

Course Description: This is a core course for the Agriculture, Food and Natural Resources Career Cluster that builds a knowledge base and technical skills in all aspects of the industry. Learners will be exposed to a broad range of agriculture, food and natural resources careers. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Foundations of Agribusiness

Knowledge Indicator(s)	Skill Set Met
0101.01 Students will learn the foundational concepts for creating an agribusiness.	
Measurement Indicators	Skill Set Met
0101.02 Identify and describe the types of agribusiness ownership.	
0101.03 Calculate return on investment.	
0101.04 Identify methods of marketing agricultural commodities, products and services in domestic and international market and create a marketing plan for an agricultural commodity, product or service.	
0101.05 Define basic finance terms and provide examples - personal inventory, net worth, income, expense.	
0101.06 Define and develop a Supervised Agricultural Experience Program (SAE).	
0101.07 Define the Four Ps (product, place, price and promotion).	
0101.08 Create an advertisement for an agricultural product.	
0101.09 Research local supply and demand of agricultural products.	
0101.10 Create a plan and begin development for their own agricultural enterprises (SAE).	

Foundations of Animal Systems

Knowledge Indicator(s)	Skill Set Met
0101.11 Students will learn the origins of livestock domestication, livestock species and breeds, and foundational concepts of livestock production and animal science.	
Measurement Indicators	Skill Set Met
0101.12 Identify and describe the origin, significance, distribution and domestication of animal systems.	
0101.13 Can recite and identify the common and scientific names of major animal species.	
0101.14 Can identify and differentiate between breeds of livestock.	
0101.15 Can identify anatomical parts of animals.	
0101.16 Can define livestock terminology (steer, heifer, barrow, gilt, etc.).	
0101.17 Identify, draw, and label parts of animal cells.	
0101.18 Define and identify animal health disorders and provide recommendations for common preventions and treatment.	
0101.19 Explain the importance of bio-security in the animal industry.	

0101.20	Identify common feedstuffs and their nutritional value.	
0101.21	Explain the difference between animal welfare and animal rights and their value to the animal industry.	
0101.22	Identify and describe the facilities need to house and produce animal species safely and efficiently.	
0101.23	Describe the effects of animal agriculture on the environment.	
0101.24	Diagram a typical animal cell and identify the organelles.	
0101.25	Practice administering injections.	
0101.26	Perform a basic health exam on a live animal.	
0101.27	Debate the issues associated with animals welfare and animal rights.	

Agriculture Innovation and Technology

Knowledge Indicator(s)		Skill Set Met
0101.28	Students will learn about historically significant innovations in agriculture and the innovations and technology that will shape the future of food and fiber production.	
Measurement Indicators		Skill Set Met
0101.29	Define agricultural biotechnology.	
0101.30	Identify and describe how biotechnology is applied in the agriculture industry.	
0101.31	Identify and describe significant innovations and inventions in the history of agriculture and their impacts on the industry.	
0101.32	Use agricultural related technology and equipment.	
0101.33	Identify and debate the issues associated with biotechnology use in the agriculture industry.	
0101.34	Research current agricultural products impacted by biotechnology practices.	

Foundations of Food Products and Processing

Knowledge Indicator(s)		Skill Set Met
0101.35	Students will learn the history of food processing, food labeling requirements, raw food materials and their value-added products, and how to preserve and process food.	
Measurement Indicators		Skill Set Met
0101.36	Identify key advancements in the history of animal and food processing.	
0101.37	Discuss the importance of food labeling to consumers.	
0101.38	Define and differentiate the quality and yield grades of food products and what they mean to the consumer.	
0101.39	Identify food products that are derived from meat, egg, poultry, fish, and dairy products.	
0101.40	Identify food products derived from fruit and vegetables.	
0101.41	Identify food products derived from grains, legumes, and oilseeds.	
0101.42	Identify common weights and measures in the food production and processing industry and apply the use of those measurements.	
0101.43	Identify and describe methods of food preservation.	
0101.44	Produce a food product (cheese, sausage, sauerkraut, etc.).	
0101.45	Compare and contrast various food labels.	
0101.46	Conduct a food preservation experiment.	

Foundations of Natural Resources

Knowledge Indicator(s)	Skill Set Met
0101.47 Students will learn about ecosystems, renewable and nonrenewable resources.	
Measurement Indicators	Skill Set Met
0101.48 Identify, define, and describe characteristics of various ecosystems.	
0101.49 Identify, define, and describe characteristics of various renewable resources.	
0101.50 Identify, define, and describe characteristics of various nonrenewable resources.	
0101.51 Identify, define, and describe characteristics of various alternative energy sources.	

Foundations of Plant Systems

Knowledge Indicator(s)	Skill Set Met
0101.52 Students will learn about the foundations of plant science and the importance of plant-based agriculture.	
Measurement Indicators	Skill Set Met
0101.53 Identify parts of a plant.	
0101.54 Describe the functions of plant parts.	
0101.55 Define components of soil and how soil is formed.	
0101.56 Identify and describe the nutritional requirements for plant growth.	
0101.57 Describe the processes of the following plant physiologies; photosynthesis, reproduction, respiration, and transpiration.	
0101.58 Diagram a typical plant cell and identify plant cell organelles and their functions.	
0101.59 Identify the components and explain the functions of plant roots.	
0101.60 Identify the components and explain the functions of plant stems.	
0101.61 Identify the components and explain the functions of plant leaves.	
0101.62 Identify the components and explain the functions of plant leaves.	
0101.63 Identify the components and explain the functions of plant flowers.	
0101.64 Conduct soil samples and soil tests.	
0101.65 Interpret soil test results and determine fertilizer and applications needs.	
0101.66 Identify agriculturally important plants by common names.	

Foundations of Power, Structural and Technical Systems

Knowledge Indicator(s)	Skill Set Met
0101.67 Students will learn the foundational skills to accurately measure, plan, and construct projects in an agricultural mechanics shop.	
Measurement Indicators	Skill Set Met
0101.68 Identify units of weight, volume, length and temperature.	
0101.69 Calculate basic math practices used in Power, Structural and Technical System.	
0101.70 Identify basic hand tools and demonstrate their proper uses in an agricultural setting.	
0101.71 Add, subtract, multiply, and divide whole numbers, with and without a calculator.	
0101.72 Use a ruler, a metric ruler, and a measuring tape to measure.	

0101.73	Add, subtract, multiply, and divide fractions.	
0101.74	Add, subtract, multiply, and divide decimals with and without a calculator.	
0101.75	Convert decimals to percentages and percentages to decimals.	
0101.76	Convert fractions to decimal and decimals to fraction.	
0101.77	Properly and safely use hand tools.	
0101.78	Construct a project using hand tools.	

Leadership Development Through FFA

Knowledge Indicator(s)		Skill Set Met
0101.79	Students will learn the history and operations of the National FFA Organization and the Three Circle Model of Agricultural Education.	
Measurement Indicators		Skill Set Met
0101.80	Explain the components and importance of the Three Circle Model of Agricultural Education.	
0101.81	Recite the FFA Creed.	
0101.82	Recite the FFA Motto.	
0101.83	Research the important dates and events in FFA History.	
0101.84	Perform basic parliamentary procedure operations (make a motion, second a motion, debate a motion).	

Course Description: This course focuses on the basic scientific principles and processes related to the production of plants and animals for the food and fiber systems. Topics of instruction include basic understanding of the livestock/poultry industry and its various components, career opportunities, soil science, crop science/agronomy, weed science, basic agricultural mechanics and related industry careers, environmental stewardship, entrepreneurship, and leadership/personal development. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Plant Science	
Knowledge Indicator(s)	Skill Set Met
0102.01 Students will demonstrate knowledge of plant identification, plant pathology and entomology.	
Measurement Indicators	Skill Set Met
0102.02 Identify plants as well as problems such as diseases, weeds, and insect pests.	
0102.03 Prepare soil for planting, and plant or transplant seeds, bulbs, and cuttings.	
0102.04 Plant seeds in specified areas and count the resulting plants to determine the percentage of seeds that germinated.	
0102.05 Prepare data summaries, reports, or analyses that include results, charts, or graphs to document research findings and results.	
0102.06 Perform general greenhouse duties, such as propagating varieties of plant materials, collecting and germinating seeds, maintaining cuttings of plants, and controlling environmental conditions.	

Soil Science	
Knowledge Indicator(s)	Skill Set Met
0102.07 Students will demonstrate knowledge of soil components, soil nutrients and land capability use.	
Measurement Indicators	Skill Set Met
0102.08 Analyze soil to determine types or quantities of fertilizer required for maximum crop production.	
0102.09 Provide information or recommendations to farmers or other landowners regarding ways in which they can best use land, promote plant growth, or avoid or correct problems such as erosion.	
0102.10 Investigate responses of soils to specific management practices to determine the use capabilities of soils and the effects of alternative practices on soil productivity.	
0102.11 Investigate soil problems and poor water quality to determine sources and effects.	
0102.12 Study soil characteristics to classify soils on the basis of factors such as geographic location, landscape position, or soil properties.	
0102.13 Assess comparative soil erosion from various planting or tillage systems, such as conservation tillage with mulch or ridge till systems, no-till systems, or conventional tillage systems with or without moldboard plows.	
0102.14 Conduct studies of nitrogen or alternative fertilizer application methods, quantities, or timing to ensure satisfaction of crop needs and minimization of leaching, runoff, or denitrification.	

Animal Nutrition

Knowledge Indicator(s)	Skill Set Met
0102.15 Students will demonstrate knowledge of nutritional needs of livestock and forage production.	
Measurement Indicators	Skill Set Met
0102.16 Monitor pasture or grazing land use to ensure that livestock are properly fed or that conservation methods, such as rotational grazing, are used.	
0102.17 Study effects of feed on quality and quantity of animal products, such as eggs and milk.	
0102.18 Study nutritional requirements of animals and nutritive values of animal feed materials.	
0102.19 Select appropriate feedstuffs for animals based on factors such as economics, digestive system and nutritional needs.	
0102.20 Appraise the adequacy of feed rations using data from the analysis of feedstuffs, animal requirements and performance.	
0102.21 Formulate animal feeds based on nutritional requirements, using feed ingredients for maximum nutrition and optimal economic production.	

Small Gas Engines Maintenance and Repair

Knowledge Indicator(s)	Skill Set Met
0102.22 Students will demonstrate knowledge of cycles of small engines, small engine parts, parts manuals and small engine maintenance.	
Measurement Indicators	Skill Set Met
0102.23 Repair and maintain gasoline engines used to power equipment such as portable saws, lawn mowers, generators, and compressors.	
0102.24 Adjust points, valves, carburetors, distributors, and spark plug gaps, using feeler gauges.	
0102.25 Reassemble engines after repair or maintenance work is complete.	
0102.26 Record repairs made, time spent, and parts used.	
0102.27 Perform routine maintenance such as cleaning and oiling parts, honing cylinders, and tuning ignition systems.	
0102.28 Obtain problem descriptions from customers and prepare cost estimates for repairs.	
0102.29 Test and inspect engines to determine malfunctions, to locate missing and broken parts, and to verify repairs, using diagnostic instruments.	
0102.30 Repair or replace defective parts such as magnetos, water pumps, gears, pistons, and carburetors, using hand tools.	
0102.31 Dismantle engines, using hand tools, and examine parts for defects.	
0102.32 Remove engines from equipment, and position and bolt engines to repair stands.	

Welding

Knowledge Indicator(s)	Skill Set Met
0102.33 Common safety hazards of welding.	
0102.34 Specific PPE needs of welding.	
0102.35 How to prepare base metal for welding.	
0102.36 Types of welding joints (butt, fillet, lap, etc.).	
0102.37 Electrode coding and selection.	
0102.38 The difference between Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW).	

0102.39	Welder machine setup.	
Measurement Indicators		Skill Set Met
0102.40	Ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits.	
0102.41	Clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding.	
0102.42	Recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment.	
0102.43	Lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers.	
0102.44	Chip or grind off excess weld, slag, or spatter, using hand scrapers or power chippers, portable grinders, or arc-cutting equipment.	
0102.45	Connect and turn regulator valves to activate and adjust gas flow and pressure so that desired flames are obtained.	
0102.46	Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals.	
0102.47	Remove rough spots from work pieces, using portable grinders, hand files, or scrapers.	
0102.48	Position and secure work pieces, using hoists, cranes, wire, and banding machines or hand tools.	
0102.49	Clean or degrease parts, using wire brushes, portable grinders, or chemical baths.	

Natural Resources

Knowledge Indicator(s)		Skill Set Met
0102.50	Students will demonstrate knowledge of natural resources and ecosystems.	
Measurement Indicators		Skill Set Met
0102.51	Identify common tree species in WV.	
0102.52	Identify common WV wildlife species.	
0102.53	Identify aquatic species (macroinvertebrates, fish, plant, invertebrates).	
0102.54	Identify ways in which forest stands may be improved.	
0102.55	Identify methods of wildlife habitat improvement.	
0102.56	Identify forest products.	
0102.57	Describe techniques used in the harvesting of wildlife.	

Agricultural Innovation and Technology

Knowledge Indicator(s)		Skill Set Met
0102.58	Emerging technology in the agriculture industry.	
0102.59	Career opportunities in technology, innovation, and entrepreneurship in agriculture.	
0102.60	Grants available to support technology, innovation, and entrepreneurship in agriculture.	
Measurement Indicators		Skill Set Met
0102.61	Identify a current question in agriculture and then develop a hypothesis and conduct research and present findings.	
0102.62	Identify a current issue or problem in agriculture and work as a group to find a solution to the problem.	

Course Description: This specialization course is for students who seek business and management techniques that will enable them to become successful in owning and operating a business in the agriculture industry. Topics covered include business organizational structures, legal and financial aspects of entrepreneurship, and marketing. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts and develop a business plan for an agricultural enterprise. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education.

Entrepreneurship Principles		Complete
Content Skill Sets		Knowledge/ Performance
0110.1	Students will demonstrate knowledge of Entrepreneurship.	
0110.2	Students will demonstrate knowledge of Time management.	
0110.3	Students will demonstrate knowledge of Goal setting.	
0110.4	Students will demonstrate knowledge of Types of business organizations.	
0110.5	Students will demonstrate knowledge of Record keeping.	
0110.6	Students will demonstrate knowledge of Biography/resume writing.	
0110.7	Students will demonstrate knowledge of Employability skills.	
0110.8	Complete an entrepreneurship self-assessment.	
0110.9	Complete strengths-finder assessment.	
0110.10	Set SMART goals for personal, school, career and business.	
0110.11	Maintain a personal calendar.	
0110.12	Document daily records of time use and activities.	
0110.13	Create a personal resume.	
0110.14	Research different types of business organizations.	
0110.15	Create a personal budget.	
0110.16	Create business summary and company description components of business plan.	

Finances and Management		Complete
Content Skill Sets		Knowledge/ Performance
0110.17	Students will demonstrate knowledge of Personal finances.	
0110.18	Students will demonstrate knowledge of Business finances.	
0110.19	Students will demonstrate knowledge of Market feasibility.	
0110.20	Students will demonstrate knowledge of Five areas of risk management.	
0110.21	Students will demonstrate knowledge of Financial record keeping.	

0110.22	Students will demonstrate knowledge of Basic economics.	
0110.23	Students will demonstrate knowledge of Business agreements.	
0110.24	Students will demonstrate knowledge of Financial stewardship.	
0110.25	Students will demonstrate knowledge of Sustainability.	
0110.26	Complete an asset inventory (land, buildings, equipment, etc.) and business agreements to determine what is needed to operate a business.	
0110.27	Complete a net worth statement.	
0110.28	Complete cash flow statement.	
0110.29	Create a business budget including fixed and variable costs and create an enterprise budget.	
0110.30	Utilize computer software to enter expense and income of a business.	
0110.31	Maintain a simulated checking account ledger.	
0110.32	Complete a break-even analysis of a product.	
0110.33	Research different sources of financing and grants.	
0110.34	Complete a loan application with supporting documentation.	
0110.35	Calculate interest on a personal car loan and a mortgage.	
0110.36	Create financial projections and business funding components of business plan.	

Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0110.37	Students will demonstrate knowledge of the 5 P's of marketing.	
0110.38	Students will demonstrate knowledge of Business communication.	
0110.39	Students will demonstrate knowledge of Personal communication.	
0110.40	Students will demonstrate knowledge of Market and customer research.	
0110.41	Students will demonstrate knowledge of Value-added concepts.	
0110.42	Students will demonstrate knowledge of Niche marketing.	
0110.43	Students will demonstrate knowledge of Networking.	
0110.44	Develop pricing strategies for products and services.	
0110.45	Plan the delivery and distribution of products and services to customers.	
0110.46	Research potential markets and competition for various products and services.	
0110.47	Create and conduct customer survey for products and services.	
0110.48	Develop advertising and promotion strategies for products and services utilizing webpage, business cards, social media, and traditional methods.	
0110.49	Develop a support network to assist with promotion and delivery of products and services to the customer.	
0110.50	Conduct a phone conversation with a customer.	
0110.51	Send an e-mail to a business inquiring about products and services.	
0110.52	Participate in a face-to-face business meeting using role play.	
0110.53	Create market analysis, sales strategies, and service or product line components of business plan.	

Business Licensing, Permitting, & Laws		Complete
Content Skill Sets		Knowledge/ Performance
0110.54	Students will demonstrate knowledge of Business licensing and permitting.	
0110.55	Students will demonstrate knowledge of Employment and business law.	
0110.56	Students will demonstrate knowledge of State and federal taxes.	
0110.57	Students will demonstrate knowledge of Business ethics.	
0110.58	Students will demonstrate knowledge of Insurance.	
0110.59	Students will demonstrate knowledge of Interviewing process.	
0110.60	Communicate with local and state government officials concerning business law and issues.	
0110.61	Complete a simulated business license application.	
0110.62	Research various business forms, application and permits.	
0110.63	Research various state and federal tax and business websites.	
0110.64	Complete a simulated tax return with supporting documents.	
0110.65	Interview an insurance agent about business and liability insurance.	
0110.66	Research staffing and labor requirements of a business.	
0110.67	Research various business policy and procedures manual.	
0110.68	Conduct simulated job interview as potential candidate.	
0110.69	Conduct simulated job interview as an employer.	
0110.70	Role play various ethical dilemmas faced by business owners.	
0110.71	Create organization and management structure components of business plan.	
0110.72	Present completed business plan to a panel of student and industry representatives.	

Course Description: This specialization course is for students who seek a deeper knowledge in the area of food science technology. Topics covered include food safety, business and economics, packaging and marketing, value-added processing, quality assurance, food processing, food preparation and presentation and careers in the food science industry. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education.

Food Safety		Complete
Content Skill Sets		Knowledge/ Performance
0111.1	Demonstrate knowledge of Safe practices and procedures in food science and technology	
0111.2	Demonstrate knowledge of National food and health safety guidelines	
0111.3	Demonstrate knowledge of Safe food handling and food borne diseases	
0111.4	Demonstrate knowledge of Avenues for food contamination (biological, chemical, and physical).	
0111.5	Demonstrate knowledge of Food borne illness prevention.	
0111.6	Demonstrate knowledge of Use of a microscope.	
0111.7	Apply the scientific method for the improvement of food processing safety.	
0111.8	Identify, sketch and compare various harmful food borne microorganisms.	
0111.9	Identify, sketch and compare various beneficial food microorganisms.	
0111.10	Examine the role and conduct an experiment with food preservatives.	
0111.11	Conduct experiments involving harmful food borne microorganisms	
0111.12	Demonstrate how proper food handling, storage and processing controls microorganisms.	
0111.13	Examine the role of pesticides, chemicals and preservatives on foods.	
0111.14	Track the flow of plant and animal products from production source to consumer and determine possible contamination points	
0111.15	Conduct a food safety assessment	
0111.16	Demonstrate proper handwashing procedures.	

Food Science Industry		Complete
Content Skill Sets		Knowledge/ Performance
0111.17	Demonstrate knowledge of Basic economics of food science technology	
0111.18	Demonstrate knowledge of American agriculture history.	
0111.19	Demonstrate knowledge of Value-added food processing.	
0111.20	Demonstrate knowledge of Food advertising and marketing.	
0111.21	Demonstrate knowledge of Agriculture commodities futures market	
0111.22	Locate and map the major food producing areas of the world by products.	

0111.23	Examine global supply and demand for agricultural products	
0111.24	Research major agriculture innovations throughout history.	
0111.25	Chart West Virginia, US and global production figures of agricultural commodities and products	
0111.26	Identify and display raw agricultural commodities and their value-added products.	
0111.27	Determine the costs of food product processing to the consumer	
0111.28	Examine present consumer food demands and project future demands	
0111.29	Create and display packaging for an agricultural product	
0111.30	Examine convenience food packaging	
0111.30	Examine and analyze marketing and advertising of agricultural products	
0111.31	Create advertising and marketing items for an agricultural product.	
0111.32	Observe and research product displays, labeling and marketing promotion techniques used in retail and wholesale food sales.	

Food Processing and Labeling		Complete
Content Skill Sets		Knowledge/ Performance
0111.33	Demonstrate knowledge of Basic food nutrition.	
0111.34	Demonstrate knowledge of food processing methods.	
0111.35	Demonstrate knowledge of Food additives.	
0111.36	Demonstrate knowledge of Food labeling, packaging, and portioning.	
0111.37	Demonstrate knowledge of Agricultural industry standards and grading systems.	
0111.38	Students will demonstrate knowledge of the use of biotechnology in agriculture and food production.	
0111.39	Students will demonstrate knowledge of Regulatory food agencies and issues.	
0111.40	Analyze and discuss industry standards and grades for agricultural commodity products.	
0111.41	Examine & discuss food labels and compare to the food nutrition pyramid.	
0111.42	Conduct experiments to determine food contents and nutritional elements.	
0111.43	Process butter, ice cream, and cheese.	
0111.44	Properly process fruits, vegetables and meats through canning, freezing, dehydrating, aging, blanching, and curing.	
0111.45	Produce food products using biotechnology (root beer, yogurt, sauerkraut, pickles, etc.)	
0111.46	Package processed agricultural products for sale and distribution.	
0111.47	Participate in or explore the FFA Poultry, Meats, Livestock, Dairy Products and Food Science Career Development Events.	
0111.48	Conduct sensory analysis experiments for smell, taste and texture of food and food additives and enhancers	
0111.49	Analyze food labels and identify food additives and enhancers	
0111.50	Examine guidelines for the home processing of vegetables and meats	
0111.51	Conduct food product sampling and consumer evaluation activities.	
0111.52	Debate and discuss food regulatory issues and the use of synthetic foods	
0111.53	Conduct and present a food and agriculture awareness campaign in your local community	
0111.54	Examine the World Health Organization, USDA and other governmental agencies involved with the world's food supply.	

Food Preparation		Complete
Content Skill Sets		Knowledge/ Performance
0111.55	Demonstrate knowledge of Safe preparation and presentation of foods	
0111.56	Demonstrate knowledge of Cultural and ethnic foods	
0111.57	Demonstrate knowledge of Preparing a menu.	
0111.58	Demonstrate knowledge of Organic foods	
0111.59	Identify community restaurants and categorize types of foods served	
0111.60	Identify global and national specialty food and ethnic preferences.	
0111.61	Survey students, parents and grandparents concerning ethnic or cultural food habits	
0111.62	Prepare traditional, regional American food specialties in and discuss relationship between ethnic preferences and the development of niche markets	
0111.63	Construct a nutritionally sound menu and prepare a food budget for a meal.	
0111.64	Identify characteristics of organic foods	
0111.65	Students will demonstrate knowledge of food science technology careers	
0111.66	Investigate the diversity of careers in the food science, dietetics and nutrition industries	
0111.67	Conduct student interest inventories	
0111.68	Identify advanced training and post-secondary educational opportunities in food science technology	
0111.69	Examine labor market information	
0111.70	Request post-secondary information	
0111.71	Demonstrate leadership skills.	

Course Description: This course introduces the knowledge and skills for applying the physical science principles and principles of operation and maintenance to mechanical equipment, welding and fabrication, structures, plumbing, electrical wiring, power utilization, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Measurements and Calculations

Knowledge Indicator(s)	Skill Set Met
0112.01 Addition, subtraction, multiplication, and division of whole numbers, with and without a calculator.	
0112.02 The use of a ruler, a metric ruler, and a measuring tape to measure.	
0112.03 Addition, subtraction, multiplication, and division of fractions.	
0112.04 Addition, subtraction, multiplication, and division of decimals, with and without a calculator.	
0112.05 Converting decimals to percentages and percentages to decimals.	
0112.06 Converting fractions to decimals and decimals to fractions.	
0112.07 Recognizing and using units of weight, volume, and temperature.	

Foundational Carpentry

Knowledge Indicator(s)	Skill Set Met
0112.08 Students will demonstrate knowledge of accurately measuring materials and safely making cuts.	
Measurement Indicators	Skill Set Met
0112.09 Measure and mark cutting lines on materials, using a ruler, pencil, chalk, and marking gauge.	
0112.10 Cut or saw boards, timbers, or plywood to required size, using handsaw, power saw, or woodworking machine.	

Foundational Plumbing

Knowledge Indicator(s)	Skill Set Met
0112.11 Basic tools for plumbing.	
0112.12 How to prepare surface for tool use.	
0112.13 Uses of plastic pipe plumbing (black roll pipe, PVC, Pex).	
0112.14 Uses of metal tubing plumbing (copper, galvanized, etc.).	
0112.15 Fixtures used for agricultural plumbing.	
Measurement Indicators	Skill Set Met
0112.16 Assemble or secure pipes, tubes, fittings, or related equipment.	
0112.17 Prepare surfaces for tool use and plumbing.	
0112.18 Properly measure, cut and join plastic piping.	

0112.19	Properly measure, cut, and join metal piping.	
0112.20	Properly join fixtures.	

Foundational Electrical Wiring

Knowledge Indicator(s)	Skill Set Met	
0112.21	Watts, voltage, and amperage.	
0112.22	The difference between conductors and insulators.	
0112.23	The units of measurement used to measure electricity.	
0112.24	The characteristics of series and parallel circuits.	
0112.25	How to install breakers, switches, and sockets.	
Measurement Indicators	Skill Set Met	
0112.26	Measure, cut, and bend wire and conduit, using measuring instruments and hand tools.	
0112.27	Strip insulation from wire ends, using wire stripping pliers, and attach wires to terminals for subsequent soldering.	
0112.28	Layout and connect 2-way switches.	
0112.29	Layout and connect 3-way switches.	
0112.30	Layout and connect branch circuits.	

SMAW & MIG Welding

Knowledge Indicator(s)	Skill Set Met	
0112.31	Common safety hazards of welding.	
0112.32	Specific PPE needs of welding.	
0112.33	How to avoid welding fumes.	
0112.34	How to prepare base metal for welding.	
0112.35	Types of welding joints (butt, fillet, lap, etc.).	
0112.36	Characteristics of Shielded Metal Arc Welding (SMAW).	
0112.37	How welding electrodes are coded.	
0112.38	Factors for electrode selection.	
0112.39	How to set up a welder before use.	
0112.40	The difference between Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW).	
0112.41	The uses of GMAW and FCAW.	
0112.42	How to set up a MIG welding machine.	
Measurement Indicators	Skill Set Met	
0112.43	Weld components in flat, vertical, or overhead positions.	
0112.44	Ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits.	
0112.45	Clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding.	
0112.46	Operate manual or semi-automatic welding equipment to fuse metal segments, using processes such as gas tungsten arc, gas metal arc, flux-cored arc, plasma arc, shielded metal arc, resistance welding, and submerged arc welding.	

0112.47	Monitor the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion, or expansion of material.	
0112.48	Examine work-pieces for defects and measure work-pieces with straightedges or templates to ensure conformance with specifications.	
0112.49	Recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment.	
0112.50	Lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers.	
0112.51	Chip or grind off excess weld, slag, or spatter, using hand scrapers or power chippers, portable grinders, or arc-cutting equipment.	
0112.52	Weld separately or in combination, using aluminum, stainless steel, cast iron, and other alloys.	
0112.53	Prepare all material surfaces to be welded, ensuring that there is no loose or thick scale, slag, rust, moisture, grease, or other foreign matter.	
0112.54	Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals.	
0112.55	Remove rough spots from work-pieces, using portable grinders, hand files, or scrapers.	
0112.56	Position and secure work-pieces, using hoists, cranes, wire, and banding machines or hand tools.	
0112.57	Guide and direct flames or electrodes on or across workpieces to straighten, bend, melt, or build up metal.	
0112.58	Clean or degrease parts, using wire brushes, portable grinders, or chemical baths.	
0112.59	Cut, contour, and bevel metal plates and structural shapes to dimensions as specified by blueprints, layouts, work orders, and templates, using powered saws, hand shears, or chipping knives.	
0112.60	Preheat work pieces prior to welding or bending, using torches or heating furnaces.	

Oxy Fuel Cutting, Welding and Brazing

Knowledge Indicator(s)	Skill Set Met
0112.61 Students will demonstrate knowledge of the use and set-up of oxy-fuel cutting, welding, and brazing equipment.	
Measurement Indicators	Skill Set Met
0112.62 Light and adjust and oxy-fuel tip for cutting, welding, and brazing.	
0112.63 Properly shut down oxy-fuel equipment.	
0112.64 Perform oxy-fuel cutting.	
0112.65 Perform oxy-fuel welding.	
0112.66 Perform oxy-fuel brazing.	

Agriculture Innovation and Technology

Knowledge Indicator(s)	Skill Set Met
0112.67 Emerging technology in the power, structural and technical systems industries.	
0112.68 The impact of international agriculture on the U.S. power, structural and technical systems industries.	
0112.69 Career opportunities in technology, innovation, and entrepreneurship in the power, structural and technical systems industries.	
0112.70 Grants available to support technology, innovation, and entrepreneurship in the power, structural and technical systems industries.	
Measurement Indicators	Skill Set Met

0112.71 Identify a current question in the power, structural and technical systems industries and then develop a hypothesis and conduct research and present findings.	
0112.72 Identify a current issue or problem in the power, structural and technical systems industries and work as a group to find a solution to the problem.	

Course Description: Students will use computer skills to develop simple sketches and plans, read and relate structural plans to specifications and building codes, estimate project costs, use construction/fabrication equipment and tools, and plan and design machinery, equipment, buildings and facilities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Structure Layout		Complete
Content Skill Sets		Knowledge/ Performance
0113.1	Students will demonstrate knowledge of reading blueprints and ordering materials.	
0113.2	Interpret specifications in blueprints, sketches, or building plans to prepare project layout and determine dimensions and materials required.	
0113.3	Select and order lumber or other required materials.	
0113.4	Students will demonstrate knowledge of framing, squaring and plumbing a structure.	
0113.5	Assemble and fasten materials to make frameworks or props, using hand tools and wood screws, nails, dowel pins, or glue.	
0113.6	Erect scaffolding or ladders for assembling structures above ground level.	
0113.7	Anchor and brace forms and other structures in place, using nails, bolts, anchor rods, steel cables, planks, wedges, and timbers.	
0113.8	Erect forms, framework, scaffolds, hoists, roof supports, or chutes, using hand tools, plumb rule, and level.	
0113.9	Dig or direct digging of post holes and set poles to support structures.	

Electrical Wiring		Complete
Content Skill Sets		Knowledge/ Performance
0113.10	Students will demonstrate knowledge of Watts, voltage, and amperage.	
0113.11	Students will demonstrate knowledge of the difference between conductors and insulators.	
0113.12	Students will demonstrate knowledge of the units of measurement used to measure electricity.	
0113.13	Students will demonstrate knowledge of the characteristics of series and parallel circuits.	
0113.14	Students will demonstrate knowledge of How to install breakers, switches, and sockets.	
0113.15	Connect wires to circuit breakers, transformers, or other components.	
0113.16	Repair or replace wiring, equipment, or fixtures, using hand tools or power tools.	
0113.17	Assemble, install, test, or maintain electrical or electronic wiring, equipment, appliances, apparatus, or fixtures, using hand tools or power tools.	

0113.18	Test electrical systems or continuity of circuits in electrical wiring, equipment, or fixtures, using testing devices, such as ohmmeters, voltmeters, or oscilloscopes, to ensure compatibility and safety of system.	
0113.19	Plan layout and installation of electrical wiring, equipment, or fixtures, based on job specifications and local codes.	
0113.20	Fasten small metal or plastic boxes to walls to house electrical switches or outlets.	
0113.21	Place conduit, pipes, or tubing, inside designated partitions, walls, or other concealed areas, and pull insulated wires or cables through the conduit to complete circuits between boxes.	

Plumbing		Complete
Content Skill Sets		Knowledge/ Performance
0113.22	Students will demonstrate knowledge of Basic tools for plumbing.	
0113.23	Students will demonstrate knowledge of How to prepare surfaces for tool use.	
0113.24	Students will demonstrate knowledge of Uses of plastic pipe plumbing (black roll, PVC, Pex).	
0113.25	Students will demonstrate knowledge of Uses of metal tubing plumbing.	
0113.26	Students will demonstrate knowledge of Fixtures used for agricultural plumbing.	
0113.27	Assemble or secure pipes, tubes, fittings, or related equipment.	
0113.28	Prepare surfaces for tool use and plumbing.	
0113.29	Properly measure, cut and join plastic piping.	
0113.30	Properly measure, cut, and join metal piping.	
0113.31	Properly join fixtures.	
0113.32	Fill pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks.	
0113.33	Fill pipes or plumbing fixtures with water or air and observe pressure gauges to detect and locate leaks.	

Fencing		Complete
Content Skill Sets		Knowledge/ Performance
0113.34	Students will demonstrate knowledge of Fence selection.	
0113.35	Students will demonstrate knowledge of Fence layout and design.	
0113.36	Students will demonstrate knowledge of Post setting.	
0113.37	Students will demonstrate knowledge of Stretching fence.	
0113.38	Establish the location for a fence, and gather information needed to ensure that there are no electric cables or water lines in the area.	
0113.39	Align posts, using lines or by sighting, and verify vertical alignment of posts, using plumb bobs or spirit levels.	
0113.40	Measure and lay out fence lines and mark posthole positions, following instructions, drawings, or specifications.	
0113.41	Dig postholes, using spades, posthole diggers, or power-driven augers.	
0113.42	Set metal or wooden posts in upright positions in postholes.	
0113.43	Discuss fencing needs with customers, and estimate and quote prices	
0113.44	Mix and pour concrete around bases of posts or tamp soil into postholes to embed posts.	
0113.45	Make rails for fences, by sawing lumber or by cutting metal tubing to required lengths.	

0113.46	Nail top and bottom rails to fence posts or insert them in slots on posts.	
0113.47	Stretch wire, wire mesh, or chain link fencing between posts, and attach fencing to frames.	
0113.48	Attach fence rail supports to posts, using hammers and pliers.	
0113.49	Assemble gates, and fasten gates into position, using hand tools.	
0113.50	Complete top fence rails of metal fences by connecting tube sections, using metal sleeves.	
0113.51	Insert metal tubing through rail supports.	
0113.52	Attach rails or tension wire along bottoms of posts to form fencing frames.	
0113.53	Nail pointed slats to rails to construct picket fences.	
0113.54	Construct and repair barriers, retaining walls, trellises, and other types of fences, walls, and gates.	
0113.55	Erect alternate panel, basket weave, and louvered fences.	

Course Description: This course builds on the principles of the previous course and provides more in-depth knowledge and skills as they relate to energy sources, lubricants, service and maintenance of machinery and equipment, and equipment operation. Students will apply principles of service and repair by troubleshooting problems and evaluating engine performance, follow guidelines to service and repair power transmission systems, hydraulic systems, and entrepreneurship. Tools used with these procedures will allow students to demonstrate proper skills and safety. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Customer Service		Complete
Content Skill Sets		Knowledge/ Performance
0114.1	Read catalogs, microfiche viewers, or computer displays in order to determine replacement part stock numbers and prices.	
0114.2	Determine replacement parts required, according to inspections of old parts, customer requests, or customers' descriptions of malfunctions.	
0114.3	Fill customer orders from stock.	
0114.4	Prepare sales slips or sales contracts.	
0114.5	Discuss use and features of various parts, based on knowledge of machines or equipment.	
0114.6	Measure parts, using precision measuring instruments, in order to determine whether similar parts may be machined to required sizes.	
0114.7	Research, order, and maintain parts inventory for services and repairs.	

Repair and Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
0114.8	Students will demonstrate knowledge of equipment maintenance and service schedules.	
0114.9	Clean and lubricate parts.	
0114.10	Clean, lubricate, and perform other routine maintenance work on equipment and vehicles.	
0114.11	Examine parts for damage or excessive wear, using micrometers and gauges.	
0114.12	Schedule maintenance for equipment, and keep equipment service records.	
0114.13	Clean parts by spraying them with grease solvent or immersing them in tanks of solvent.	
0114.14	Students will demonstrate knowledge of service manuals, troubleshooting equipment, and equipment repair procedures.	
0114.15	Repair parts or equipment.	
0114.16	Reassemble machines and equipment following repair; test operation; and make adjustments as necessary.	

0114.17	Maintain, repair, and overhaul farm machinery and vehicles, such as tractors, harvesters, and irrigation systems.	
0114.18	Examine and listen to equipment, read inspection reports, and confer with customers to locate and diagnose malfunctions.	
0114.19	Dismantle defective machines for repair, using hand tools.	
0114.20	Repair and replace damaged or worn parts.	
0114.21	Dismantle and reassemble heavy equipment using hoists and hand tools.	
0114.22	Test mechanical products and equipment after repair or assembly to ensure proper performance and compliance with manufacturers' specifications.	
0114.23	Fit bearings to adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment.	
0114.24	Diagnose faults or malfunctions to determine required repairs, using engine diagnostic equipment such as computerized test equipment and calibration devices.	
0114.25	Repair, rewire, and troubleshoot electrical systems.	

Course Description: This course is a specialized elective within the Power, Structural, and Technical Systems pathway. This course focuses on the further development of skills within physical science principles and engineering applications. Students will utilize problem-solving techniques and hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Problem-Solving & Improvements in AFNR System		Complete
Content Skill Sets		Knowledge/ Performance
0115.1	Apply physical science principles and engineering applications to solve problems and improve performance in AFNR power, structural, and technical systems.	
0115.2	Assess and select energy sources for AFNR power, structural, and technical systems.	
0115.3	Research and identify renewable and nonrenewable energy sources used in AFNR.	
0115.4	Assess the environmental impacts of renewable and nonrenewable energy sources used in AFNR.	
0115.5	Design and implement methods to evaluate the efficiency of renewable and nonrenewable energy sources in an AFNR.	
0115.6	Compare and contrast the pathways of delivery for renewable and nonrenewable energy sources in an AFNR enterprise or business.	
0115.7	Calculate the costs of using renewable and nonrenewable energy sources in an AFNR enterprise or business.	
0115.8	Devise a strategy to incorporate the use of selected energy sources in an AFNR enterprise or business.	
0115.9	Summarize methods; compare and contrast units used to benchmark energy use of AFNR structures (e.g., EUIs, BTUs, etc.).	
0115.10	Convert energy utilized in an AFNR structure to an energy utilization index (e.g., CCR, KWH, etc., to BTU consumption per square foot, etc.).	
0115.11	Apply energy benchmarking data to examine and select methods to conserve energy in AFNR structures.	

Implementation of Improvements to AFNR Systems		Complete
Content Skill Sets		Knowledge/ Performance
0115.12	Compare and contrast applications of simple machines in AFNR-related mechanical systems.	
0115.13	Perform mathematical calculations to determine the mechanical advantage of simple machines in AFNR-related mechanical systems.	
0115.14	Apply the scientific method to devise strategies to improve the efficiency of the operation of AFNR-related mechanical systems.	
0115.15	Identify the tools, machines, and equipment needed to construct and/or fabricate a project in AFNR.	
0115.16	Calculate the maintenance and purchase cost of tools, machines, and equipment used in AFNR.	
0115.17	Devise and document processes to safely implement and evaluate the safe use of AFNR-related tools, machinery, and equipment.	
0115.18	Examine owner’s manuals to classify the types of safety hazards associated with different mechanical systems used in AFNR (e.g., caution, warning, danger, etc.).	
0115.19	Select, maintain, and demonstrate the proper use of tools, machines, and equipment used in different AFNR-related mechanical	

systems.	
0115.20 Conduct a safety inspection of tools, machines, and equipment used in different AFNR-related mechanical systems.	

Computer Technologies in AFNR		Complete
Content Skill Sets		Knowledge/ Performance
0115.21	Use control, monitoring, geospatial, and other technologies in AFNR power, structural, and technical systems.	
0115.22	Apply computer and other technologies (e.g., robotics, CNC, UAS, etc.) to solve problems and increase the efficiency of AFNR systems.	
0115.23	Research and categorize computer technologies used to solve problems and increase efficiency in AFNR systems.	
0115.24	Analyze data using computer programs and other current technologies used in AFNR systems.	
0115.25	Solve problems and calculate changes in efficiency using computer technologies for AFNR systems.	
0115.26	Examine and summarize the specific intent of technologies used to solve problems and increase the efficiency of AFNR systems (e.g., robotics, UAS, CNC, etc.).	
0115.27	Calculate the change in efficiency after using technologies in AFNR systems.	
0115.28	Solve problems and evaluate changes in efficiency and create recommendations for the use of technologies in AFNR systems.	
0115.29	Examine and categorize electrical control system components used in AFNR systems (e.g., transistors, relays, HVAC, logic controllers, etc.).	
0115.30	Analyze schematic drawings for electrical control systems used in the AFNR systems.	
0115.31	Design schematic drawings for electrical control systems used in AFNR systems.	
0115.32	Differentiate between the purpose of electrical sensors and controls used in AFNR power, structural, and technical systems.	
0115.33	Interpret maintenance schedules for electrical control systems used in AFNR power, structural, and technical systems.	
0115.34	Troubleshoot electrical control system performance problems found in AFNR power, structural, and technical systems.	
0115.35	Research and summarize the importance of AFNR power, structural, and technical control systems using programmable logic controllers (PLC) and/or other computer-based systems.	
0115.36	Assess the functions of AFNR power, structural, and technical control systems using programmable logic controls (PLC) in agricultural production and manufacturing.	
0115.37	Develop and implement AFNR power, structural, and technical control systems using programmable logic controllers (PLC) and/or other computer-based systems.	

Geospatial Technologies in AFNR		Complete
Content Skill Sets		Knowledge/ Performance
0115.38	Apply geospatial technologies to solve problems and increase the efficiency of AFNR systems.	
0115.39	Research and summarize the impact of utilizing geospatial technologies (e.g., GPS, GIS, remote sensing, telematics, etc.) in AFNR systems.	
0115.40	Analyze and interpret trends in data collected utilizing geospatial technologies.	
0115.41	Collect data and create maps utilizing geospatial technologies.	
0115.42	Examine the components of precision technologies used in AFNR systems.	

0115.43	Analyze and calculate the economic impact of utilizing precision technologies (e.g., GPS/GIS) in AFNR systems.	
0115.44	Install, maintain, and service instrumentation and equipment used for precision technologies (e.g., GPS receivers, yield monitors, remote sensors, etc.) used in AFNR systems.	

NOTES:

[AFNR Standards – The National Council for Agricultural Education \(ffa.org\)](http://ffa.org)

Course Description: This course provides instruction in the technologically advanced world of agriculture and life sciences. Current applications of biotechnology in animal science, environmental science, food science, and plant science are emphasized. Basic concepts of genetics and microbiology are applied to the agriculture industry and its success in providing food and fiber for the world. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Biotechnology in the Agriculture Industry

Biotechnology in the Agriculture Industry		Skill Set Met
Knowledge Indicator(s)		
0132.1	Areas of biotechnology and their application in the agriculture industry.	
0132.2	Historical applications and contributions of biotechnology.	
0132.3	Agricultural, social, political, environmental and economic impacts of biotechnology.	
0132.4	Benefits and dangers of biotechnology.	
Measurement Indicators		Skill Set Met
0132.5	Analyze physical characteristics and Expected Progeny Difference (EPD) data and formulate conclusions about animal trait inheritance and selection.	
0132.6	Examine biotechnology practices in animal agriculture (antibiotics, growth hormones, animal health and disease prevention).	
0132.7	Relate the concepts of dominant and recessive genes to common heritable traits in animals.	
0132.8	Examine the reproductive processes in animals (heat, ovulation, fertilization, gestation and parturition).	
0132.9	Research various technological advancements in animal biotechnology (Estrus Synchronization, Artificial Insemination, Cloning and Embryo Transfer).	
0132.10	Examine biotechnology practices in plant agriculture (growth hormones, genetic engineering and tissue culturing).	
0132.11	Assess fermentation and its importance to biotechnology.	
0132.12	Compare and contrast the processes of mitosis and meiosis.	
0132.13	Analyze the processes of identifying a gene on a chromosome.	
0132.14	Assess and discuss the process of Polymerase Chain Reaction.	
0132.15	Discuss and draw conclusions about genetic engineering and its uses.	
0132.16	Identify regulatory agencies and regulations associated with biotechnology.	
0132.17	Analyze the use of equipment and materials and apply rules for safety in the laboratory.	

Lab Procedures

Lab Procedures		Skill Set Met
Knowledge Indicator(s)		
0132.18	Students will demonstrate knowledge of technology used to perform tasks and laboratory procedures in agricultural biotechnology.	
0132.19	Apply principles of animal selection to evaluate various species of livestock.	

0132.20	Examine the male and female reproductive system of an agriculture animal species.	
0132.21	Design, conduct and evaluate tissue culture experiments with various species of plants.	
0132.22	Apply aseptic techniques in tissue culture experiments.	
0132.23	Conduct and evaluate a laboratory experiment in bioremediation.	
0132.24	Perform gram staining of bacteria.	
0132.25	Illustrate and compare various microorganisms viewed under a microscope.	
0132.26	Design, conduct and evaluate fermentation experiments.	
0132.27	Conduct and evaluate the process of making cheese.	
0132.28	Conduct and evaluate experiments in food preservation and food safety.	
0132.29	Compare and contrast the cells of plants and animals viewed under a microscope.	
0132.30	Predict rate of inheritance by conducting simulated experiments.	
0132.31	Extract DNA from a plant source (Banana or strawberry) and discuss structure.	
0132.32	Conduct gel electrophoresis of DNA experiments.	
0132.33	Conduct recombinant DNA procedures.	

Course Description: Students enrolled in agricultural education courses have the unique opportunity for experiential and contextual learning on a grand scale. Students may select and participate in appropriate agricultural enterprises which provide opportunity to acquire skills, earn money and develop responsibility while also earning high school credit. This course is designed for seniors in agricultural education classes who are in their third or fourth year with satisfactory grades. Students will be placed in an agricultural occupation and will receive wages, credits toward graduation and school-release time of a maximum of three hours per day. Students who wish to enroll will need approval from program coordinator. An attendance contract will be required. The contract will be signed by the student, parent/guardian, administrator and program coordinator. Safety instruction is integrated into all activities. This course will give students experience in a potential agricultural career. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Supervised Agricultural Experience Program Development and Record Keeping		Complete
Content Skill Sets		Knowledge/ Performance
0133.01	Types of SAE programs.	
0133.02	FFA/SAE award and degree programs.	
0133.03	SAE financial records.	
0133.04	Career opportunities in the agriculture industry.	
0133.05	Complete a personal interest and resource inventory to identify potential enterprises and placement sites for individualized programs.	
0133.06	Work with teacher and employers to develop individual training plans listing competencies to be learned through agricultural cooperative education placement.	
0133.07	Summarize financial records to determine net income from SAE.	
0133.08	Calculate efficiency factors related to individual SAE.	
0133.09	Develop a portfolio substantiating completion of SAE.	
0133.10	Complete a job application and create a letter of application.	
0133.11	Participate in a job interview.	

Workplace Skills

Workplace Skills		Complete
Content Skill Sets		Knowledge/ Performance
0133.12	Job-site ethics.	
0133.13	Time management.	
0133.14	Decision-making skills.	
0133.15	Problem-solving skills.	
0133.16	Work-place safety.	
0133.17	Demonstrate a courteous attitude to customers, employers and fellow employees.	
0133.18	Display willingness to learn new techniques and follow directions.	
0133.19	Monitor the safety of the working environment.	
0133.20	Identify the location of first aid kits, emergency phone numbers, and exits.	
0133.21	Demonstrate the safe use of equipment.	

Course Description: SAE is a student-led, instructor-supervised, work-based learning experience that results in measurable outcomes within a predefined, agreed-upon set of Agriculture, Food, and Natural Resources (AFNR) Technical Standards and Career Ready Practices aligned to your career plan of study. If a student touches, prepares, sells, or communicates about anything related to AFNR, the experience will count as a legitimate SAE. SAEs are expected to relate to the concentration area in which the student seeks occupational completer status. An SAE shall fall into one of four categories: **Exploratory/Foundational:** Students will learn about the ‘big picture’ of agriculture and its many related careers. **Research/Experimentation and Analysis:** Students will conduct research or analyze information to discover new knowledge. **Ownership/Entrepreneurship:** Students will plan and operate an agriculture-related business. **Placement:** Students will work for someone else either for pay or for the experience. Students conducting all types of SAEs will track hours (both paid and unpaid), progress, income, expenses, events, etc., in the Classroom 2 Career tracking system/agriculture experience tracker (AET).

Exploratory/Foundational		Complete
Content Skill Sets		Knowledge/ Performance
0134.1	Describe career opportunities and means to achieve those opportunities in each of the AFNR career pathways.	
0134.2	Explore and identify personal agricultural interests to create a career plan.	
0134.3	Act as a responsible and contributing citizen and employee by developing key employability skills.	
0134.4	Students will expand their personal financial literacy by developing a personal budget.	
0134.5	Examine and summarize the importance of health, safety, and environmental management systems in AFNR workplaces.	
0134.6	Analyze how issues, trends, technologies, and public policies impact systems in the AFNR career cluster.	
0134.7	Job shadow a worker within the agricultural industry.	
0134.8	Students will document their knowledge, skills, and plans in the Classroom 2 Career tracking system/AET.	

Research/Experimentation & Analysis		Complete
Content Skill Sets		Knowledge/ Performance
0134.9	Investigate materials, processes, and information to establish new knowledge or the validation of previous research.	
0134.10	Follow the scientific process and accepted best practices for conducting research to ensure reliability, validity, and replicability of research.	
0134.11	Exercise safety throughout all aspects of the experimental process.	
0134.12	Apply the methods of the scientific method to control certain variables while manipulating others to observe the outcome.	
0134.13	Complete a Research Plan which safely meets all requirements.	
0134.14	Define a hypothesis.	
0134.15	Determine an appropriate experimental design, conduct the research, collect the data, draw conclusions from the data and recommend further research that can be done.	
0134.16	Formulate a why or how question, conduct data and collection using qualitative and/or quantitative methodologies.	

0134.17	Conduct an analysis of data, facts, and other information to determine the answer to the analytical question.	
0134.18	Apply the engineering design process to the invention research SAE to create a new product or service.	
0134.19	Conduct peer reviews with the supervising agricultural education instructor or other professionals at multiple stages throughout the research cycle.	
0134.20	Make a summary presentation of research and findings to a local committee organized by the agricultural education instructor.	
0134.21	Document methods, procedures, results, analysis, and conclusions in the Classroom 2 Career tracking system/AET.	

Ownership/Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
0134.22	Create, own, and operate a business that provides goods and/or services.	
0134.23	Exercise safety when operating all aspects of the business.	
0134.24	Make operational and risk management decisions on how goods and/or services are provided.	
0134.25	Conduct an operation of sufficient scope to enable the development of skills and abilities aligned to the AFNR standards.	
0134.26	Conduct an analysis of productivity and profitability at the end of each production/business cycle; make necessary changes for improvement.	
0134.27	Become familiar with common financial tools, balance sheets, income statements, inventories, and cash flow.	
0134.28	Design a business plan which provides for the continued growth and expansion of the operation.	
0134.29	Review and update the business plan annually to reflect the changes in the operation.	
0134.30	Track and document items produced, service hours worked, income, expenses, and the knowledge and skills attained within the Classroom 2 Career tracking system/AET record book.	

Placement		Complete
Content Skill Sets		Knowledge/ Performance
0134.31	Develop a job plan that includes considerations that promote a safe worksite and opportunities to learn on the job.	
0134.32	Develop agriculture, food, natural resource, and employability skills and abilities outside the classroom through a hands-on job site experience.	
0134.33	Perform an environmental safety review on yourself and your worksite.	
0134.34	Pursue and complete the necessary safety training needed for employment in the related SAE area.	
0134.35	Take measures to address any safety concerns identified.	
0134.36	Perform the tasks determined by the employer which are necessary for the operation of the business.	
0134.37	Track and document hours worked, income received, tasks completed, and the knowledge and skills attained within the Classroom 2 Career tracking system/AET record book.	

NOTES:

[Guidelines for Awarding SAE Credit Document](#)

Sources: [Educator Resources – SAE For All](#)

Course Description: This course provides instruction that expands the scientific knowledge and technical skills gained in The Science of Agriculture. Topics of instruction include livestock/poultry industry and its various components, career opportunities, soil science, crop science/agronomy, weed science, agricultural machinery and related industry careers, environmental stewardship, entrepreneurship, and leadership/personal development. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Agribusiness Management

Knowledge Indicator(s)	Skill Set Met
0136.1 Students will demonstrate knowledge of supply and demand, entrepreneurship and business planning.	
Measurement Indicators	Skill Set Met
0136.2 Execute supply-and-demand principles in agribusinesses.	
0136.3 Demonstrate entrepreneurship, including idea generation, opportunity analysis and assessment.	
0136.4 Identify components of business plans and demonstrate how to write such components using the SMART format.	
0136.5 Identify approaches in creating mission statements for agri-businesses.	
0136.6 Create and disseminate a mission statement for business activities.	
0136.7 Prepare short-term, intermediate and long-term goals and objectives that are consistent with the mission statement for an agri-business.	
0136.8 Evaluate business goals and objectives and make revisions based on observations.	

Agribusiness Marketing

Knowledge Indicator(s)	Skill Set Met
0136.9 Students will demonstrate knowledge of consumer needs, marketing principles, and advertising.	
Measurement Indicators	Skill Set Met
0136.10 Formulate, direct and coordinate marketing activities to promote products and services.	
0136.11 Identify, develop, or evaluate marketing strategy based on knowledge of establishment objectives, market characteristics, and cost and markup factors.	
0136.12 Use sales forecasting or strategic planning to ensure the sale and profitability of products, lines, or services, analyzing business developments and monitoring market trends.	
0136.13 Students will demonstrate knowledge of market conditions, growing conditions, production agriculture, and break-even costs.	
0136.14 Determine types or quantities of crops or livestock to be raised, according to factors such as market conditions, federal programs or incentives, or soil conditions.	
0136.15 Evaluate marketing or sales alternatives for farm products.	
0136.16 Maintain financial, operational, production, or employment records for farms.	

0136.17	Monitor activities such as irrigation, chemical application, harvesting, milking, breeding, or grading to ensure adherence to safety regulations.	
0136.18	Plan crop activities based on factors such as crop maturity or weather conditions.	
0136.19	Prepare budgets or financial reports for farm or ranch operations.	
0136.20	Analyze market conditions to determine acreage allocations.	
0136.21	Buy or sell futures contracts or price farm products in advance of future sales to minimize risk or maximize profits.	

Advanced Animal Principles

Knowledge Indicator(s)		Skill Set Met
0136.22	Students will demonstrate knowledge of animal selection, physiology, breeding, and genetics.	
Measurement Indicators		Skill Set Met
0136.23	Research and control animal selection and breeding practices to increase production efficiency and improve animal quality.	
0136.24	Determine genetic composition of animal populations and heritability of traits, utilizing principles of genetics.	
0136.25	Describe the functions of major organs in the male and female reproductive systems.	
0136.26	Select breeding animals based on characteristics of the reproductive organs.	
0136.27	Summarize factors that lead to reproductive maturity.	
0136.28	Evaluate and select animals for reproductive readiness.	
0136.29	Evaluate reproductive problems that occur in animals.	
0136.30	Explain the advantages of using genetically superior animals in the production of animals and animal products.	
0136.31	Select a breeding system based on the principles of genetics.	
0136.32	Explain the processes of natural and artificial breeding methods.	
0136.33	Select animal breeding methods based on reproductive and economic efficiency.	
0136.34	Compare and contrast quantitative breeding value differences between genetically superior animals and animals of average genetic value.	
0136.35	Explain the materials, methods and processes of artificial insemination.	

Landscape Design and Maintenance

Knowledge Indicator(s)		Skill Set Met
0136.36	Students will demonstrate knowledge of landscape design and maintenance.	
Measurement Indicators		Skill Set Met
0136.36	Care for established lawns by mulching, aerating, weeding, grubbing, removing thatch, and trimming or edging around flower beds, walks, or walls.	
0136.37	Use hand tools, such as shovels, rakes, pruning saws, saws, hedge or brush trimmers, or axes.	
0136.38	Prune or trim trees, shrubs, or hedges, using shears, pruners, or chain saws.	
0136.39	Mix and spray or spread fertilizers, herbicides, or insecticides onto grass, shrubs, or trees, using hand or automatic sprayers or spreaders.	
0136.40	Water lawns, trees, or plants, using portable sprinkler systems, hoses, or watering cans.	
0136.41	Trim or pick flowers and clean flower beds.	

0136.42	Follow planned landscaping designs to determine where to lay sod, sow grass, or plant flowers or foliage.	
0136.43	Plant seeds, bulbs, foliage, flowering plants, grass, ground covers, trees, or shrubs and apply mulch for protection, using gardening tools.	
0136.44	Decorate gardens with stones or plants.	
0136.45	Attach wires from planted trees to support stakes.	

Pesticide Applications

Knowledge Indicator(s)	Skill Set Met	
0136.46	Students will demonstrate knowledge of pesticide usage, mixing, labels, and safe use.	
Measurement Indicators	Skill Set Met	
0136.47	Fill sprayer tanks with water and chemicals, according to formulas.	
0136.48	Mix pesticides, herbicides, or fungicides for application to trees, shrubs, lawns, or botanical crops.	
0136.49	Cover areas to specified depths with pesticides, applying knowledge of weather conditions, droplet sizes, elevation-to-distance ratios, and obstructions.	

Horticulture

Knowledge Indicator(s)	Skill Set Met	
0136.50	Propagating horticultural plants.	
0136.51	Cultivating horticultural plants.	
0136.52	Harvesting horticultural plants.	
0136.53	Growing plants hydroponically.	
0136.54	Tools and equipment used in greenhouse and nursery production.	
0136.55	Pesticide use and safety.	
0136.56	Proper horticultural plant handling and storage.	
Measurement Indicators	Skill Set Met	
0136.57	Plant, spray, weed, fertilize, and water plants, shrubs, and trees, using hand tools and gardening tools.	
0136.58	Harvest plants, and transplant or pot and label them.	
0136.59	Feel plants' leaves and note their coloring to detect the presence of insects or disease.	
0136.60	Inspect plants to assess quality.	
0136.61	Record information about plants and plant growth.	
0136.62	Sell and deliver plants and flowers to customers.	
0136.63	Regulate greenhouse conditions, and indoor and outdoor irrigation systems.	

Course Description: This course introduces students to the principles and applications of animal processing. Students will learn carcass grading, primal and retail cuts, workplace safety, how to process primal and retail cuts, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Production and Processing of Animal Products

Knowledge Indicator(s)	Skill Set Met
0139.1 Raw materials.	
0139.2 Production processes.	
0139.3 Quality control.	
0139.4 Production costs	
0139.5 Techniques for maximizing effective manufacture and distribution of goods.	
Measurement Indicators	Skill Set Met
0139.6 Wrap, weigh, label and price cuts of meat.	
0139.7 Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper's eye.	
0139.8 Prepare special cuts of meat ordered by customers.	
0139.9 Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form.	
0139.10 Receive, inspect, and store meat upon delivery, to ensure meat quality.	
0139.11 Shape, lace, and tie roasts, using boning knife, skewer, and twine.	
0139.12 Remove bones and cut meat into cuts in preparation for marketing.	
0139.13 Use knives, cleavers, meat saws, band saws, or other equipment to perform meat cutting and trimming.	
0139.14 Clean, trim, slice, and section carcasses for future processing.	
0139.15 Cut and trim meat to prepare for packing.	
0139.16 Remove parts, such as skin, feathers, scales or bones, from carcass.	
0139.17 Inspect meat products for defects, bruises or blemishes and remove them along with any excess fat.	
0139.18 Estimate requirements and order or requisition meat supplies to maintain inventories.	
0139.19 Supervise other butchers or meat cutters.	
0139.20 Record quantity of meat received and issued to cooks and/or keep records of meat sales.	
0139.21 Negotiate with representatives from supply companies to determine order details.	
0139.22 Produce hamburger meat and meat trimmings.	
0139.23 Process primal parts into cuts that are ready for retail use.	
0139.24 Obtain and distribute specified meat or carcass.	
0139.25 Separate meats and byproducts into specified containers and seal containers.	
0139.26 Weigh meats and tag containers for weight and contents.	

Fundamentals of Animal Processing

Knowledge Indicator(s)	Skill Set Met
0139.27 Primal and retail cuts of meat.	
0139.28 HACCP plan.	
0139.29 USDA animal processing guidelines.	
Measurement Indicators	Skill Set Met
0139.30 Identify basic primal and retail cuts of beef, pork and lamb.	
0139.31 Read and understand a HACCP plan.	
0139.32 Discuss and communicate the USDA guidelines for commercial and custom meat processing facilities.	

Agriculture Innovation and Technology

Knowledge Indicator(s)	Skill Set Met
0139.33 Emerging technology in the animal processing and meat industry.	
0139.34 The impact of international agriculture on the U.S. animal processing and meat industry.	
0139.35 Career opportunities in technology, innovation, and entrepreneurship in animal processing and the meat industry.	
0139.36 Grants available to support technology, innovation, and entrepreneurship in animal processing and the meat industry.	
Measurement Indicators	Skill Set Met
0139.37 Identify a current question in the animal processing and meat industry and then develop a hypothesis and conduct research and present findings.	
0139.38 Identify a current issue or problem in the animal processing and meat industry and work as a group to find a solution to the problem.	

Course Description: This course is designed to be a core course in the Animal Systems Program of Study. The course will cover topics on animal restraint, animal management techniques, animal health, and welfare, balancing rations, pedigree analysis, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Animal Health	
Knowledge Indicator(s)	Skill Set Met
0140.01 Diseases and injuries and appropriate treatment for domestic farm animals, pets and nonfarm animals (e.g., bacterial, viral, fungal, or parasitic cause, not specific medications).	
0140.02 Records on heats, birth intervals, pedigree, and health practices of domestic farm animals, pets and nonfarm animals.	
0140.03 Biosecurity in the animal industry.	
Measurement Indicators	Skill Set Met
0140.04 Examine animals to detect illness, injury, or disease, and to check physical characteristics, such as rate of weight gain.	
0140.05 Provide medical treatment, such as administering medications and vaccinations using live or species-specific models or arrange veterinarians to provide more extensive treatment.	
0140.06 Mix feed, additives, and medications in prescribed portions and use Pierson Square for formulating feed rations.	
0140.07 Keep records documenting animal health, diet, and behavior.	

Animal Reproduction	
Knowledge Indicator(s)	Skill Set Met
0140.08 Students will demonstrate knowledge of selection methods of domestic farm animals, pets and nonfarm animals (e.g., birth weights, EPDs genotype/phenotype) AND identify breeding methods used in domestic farm animals, pets and nonfarm animals (e.g., natural and artificial insemination, embryo transfer).	
Measurement Indicators	Skill Set Met
0140.09 Select animals to be bred, and semen specimens to be used, according to knowledge of animals, genealogies, traits, and desired offspring characteristics.	
0140.10 Observe animals in heat in order to detect approach of estrus, and exercise animals to induce or hasten estrus, if necessary.	

Animal Observation and Training	
Knowledge Indicator(s)	Skill Set Met
0140.11 Students will demonstrate knowledge of how to observe and train animals for various situations (e.g., showing, training livestock) AND describe methods utilized in animal handling and restraint.	
Measurement Indicators	Skill Set Met

0140.12	Feed and water animals, and clean and disinfect pens, cages, yards, and hutches.	
0140.13	Cue or signal animals during performances.	
0140.14	Evaluate animals to determine their temperaments, abilities, or aptitude for training.	
0140.15	Feed or exercise animals or provide other general care, such as cleaning or maintaining holding or performance areas.	
0140.16	Talk to or interact with animals to familiarize them to human voices or contact.	
0140.17	Conduct training programs in order to develop and maintain desired animal behaviors for competition, entertainment, obedience, security, riding and related areas.	

Agriculture Innovation and Technology

Knowledge Indicator(s)		Skill Set Met
0140.18	Emerging technology in the livestock and companion animal industry. (e.g., embryo transfer, sexed semen, RFID).	
0140.19	The impact of international agriculture on the U.S. livestock and companion animal industry. (e.g., imports, exports, tariffs, supply and demand).	
0140.20	Career opportunities in technology, innovation, and entrepreneurship in the livestock and companion animal industry.	
0140.21	Grants available to support technology, innovation, and entrepreneurship in the livestock and companion animal industry.	
Measurement Indicators		Skill Set Met
0140.22	Identify a current question in the livestock and companion animal industry and then develop a hypothesis and conduct research and present findings.	
0140.23	Identify a current issue or problem in the livestock and companion animal industry and work as a group to find a solution to the problem.	

Course Description: This specialization course focuses on the basic scientific principles and processes related to the aquaculture industry. Topics covered will be developing feed rations, business planning, developing marketing plans for aquaculture facilities, water quality, breeding, and management. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Skillset Name	Complete
Content Skill Sets	Knowledge/ Performance
0141.01 Water quality needs of aquatic organisms.	
0141.02 Water quality testing equipment.	
0141.03 Testing water samples.	
0141.04 Environmental regulations for aquaculture facilities.	
0141.05 Monitor environments to ensure maintenance of optimum conditions for aquatic life.	
0141.06 Identify environmental requirements of a particular species and select and oversee the preparation of sites for species cultivation.	
0141.07 Prepare reports required by state and federal laws.	
0141.08 Collect and record growth, production, and environmental data.	
0141.09 Confer with biologists, fish pathologists, and other fishery personnel to obtain data concerning fish habits, diseases, food, and environmental requirements.	
0141.10 Students will demonstrate knowledge of operations in a fish hatchery and basic fish reproduction.	
0141.11 Devise and participate in activities to improve fish hatching and growth rates, and to prevent disease in hatcheries.	
0141.12 Direct and monitor trapping and spawning of fish, egg incubation, and fry rearing, applying knowledge of management and fish culturing techniques.	
0141.13 Coordinate the selection and maintenance of brood stock.	
0141.14 Direct and monitor the transfer of mature fish to lakes, ponds, streams, or commercial tanks.	
0141.15 Collect information regarding techniques for fish collection and fertilization, spawn incubation and treatment of spawn and fry.	
0141.16 Students will demonstrate knowledge of operations in a fish grow-out facility and managing an aquaculture facility.	
0141.17 Grow fish and shellfish as cash crops or for release into freshwater or saltwater.	
0141.18 Conduct and supervise stock examinations in order to identify diseases or parasites.	
0141.19 Operate and maintain cultivating and harvesting equipment.	

Course Description: This course is designed to provide students with basic leadership skills. Instructional areas include leadership styles, goal setting, time management, public speaking, job skills and interpersonal relationships. Safety instruction is integrated into relevant activities. Teachers should provide each student with real world learning opportunities and instruction related to selection, development, and maintenance of individual Supervised Agricultural Experience (SAE) programs. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Nature of Leadership		Complete
Content Skill Sets		Knowledge/ Performance
0146.01	Demonstrate an understanding of the scope of leadership.	
0146.02	Demonstrate the ability to use the inquiry process to solve problems	
0146.03	Define leadership.	
0146.04	Examine the relationship between personality traits and leadership potential.	
0146.05	Distinguish between and elaborate on the differences between formal and informal leadership styles.	
0146.06	Define and assess the role of charisma in leadership.	
0146.07	Appraise emerging issues with leadership implications.	

Leadership Applications		Complete
Content Skill Sets		Knowledge/ Performance
0146.08	Demonstrate knowledge, understanding, and applications of facts, concepts, principles, theories and models as delineated in the objectives.	
0146.09	Describe duties of officers in an organization.	
0146.10	Explain the use and purposes of specific parliamentary procedure motions.	
0146.11	Categorize motions used in the conduct of business meetings.	
0146.12	Demonstrate skills and techniques used by public speakers.	
0146.13	Examine elements of goal setting.	
0146.14	Characterize appropriate dress for the workplace.	
0146.15	Explore conflict resolution.	
0146.16	Critique personal behavior as a reflection of ethics and values.	
0146.17	Demonstrate the proper use of parliamentary law.	
0146.18	Deliver a prepared public speech.	
0146.19	Deliver an extemporaneous speech.	
0146.20	Prepare an introduction for an invited guest speaker.	

0146.21	Become involved in a controlled debate.	
0146.22	Conduct small group discussions on current events.	
0146.23	Select, develop, and conduct a community service project.	
0146.24	Select, develop, and conduct school improvement projects.	
0146.25	Prioritize activities to make efficient use of time.	
0146.26	Evaluate stress reduction practices.	
0146.27	Create a cover letter and resume.	
0146.28	Demonstrate proficiency in giving a personal interview.	
0146.29	Prioritize activities to make efficient use of time.	
0146.30	Hold a mock social gathering with adults.	

Course Description: This is a specialization course designed for students interested in entering the companion animal industry as a pet groomer, animal care giver and/or companion animal entrepreneur. The course will cover topics on grooming, animal restraint, developing feed rations, business planning, developing marketing plans and animal facilities as they apply to various companion animals such as dogs, cats, rodents, birds, reptiles, amphibians and fish. Students utilize 15 problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Animal Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
0149.1	Animal nutrition and nutrients.	
0149.2	Companion animal feeds.	
0149.3	Digestive systems of companion animals.	
0149.4	Balancing rations.	
0149.5	Feeding companion animals.	
0149.6	Feed and water animals according to schedules and feeding instructions.	
0149.7	Mix food, liquid formulas, medications, or food supplements according to instructions, prescriptions, and knowledge of animal species.	
0149.8	Order, unload, and store feed and supplies.	
0149.9	Collect and record animal information such as weight, size, physical condition, treatments received, medications given and food intake.	

Animal Care and Grooming		Complete
Content Skill Sets		Knowledge/ Performance
0149.10	Grooming a pet and other nonfarm animal.	
0149.11	Bathing a pet and other nonfarm animal.	
0149.12	Exercising a pet and other nonfarm animal.	
0149.13	Training a horse.	
0149.14	Do facility laundry and clean, organize, maintain, and disinfect animal quarters, such as pens and stables, and equipment, such as saddles and bridles.	
0149.15	Perform animal grooming duties such as washing, brushing, clipping, and trimming coats, cutting nails, and cleaning ears.	
0149.16	Exercise animals to maintain their physical and mental health.	
0149.17	Train animals to perform certain tasks.	
0149.18	Train horses or other equines for riding, harness, show, racing, or other work, using knowledge of breed characteristics, training methods, performance, and the peculiarities of each animal.	
0149.19	Use oral, spur, rein, or hand commands to condition horses to carry riders or to pull horse-drawn equipment.	
0149.20	Place tack or harnesses on horses to accustom horses to the feed of equipment.	

Animal Care Facility Management		Complete
Content Skill Sets		Knowledge/ Performance
0149.21	Working in settings such as kennels, animal shelters, and zoos.	
0149.22	Cleaning, disinfecting, and repairing cages, pens, or fish tanks.	
0149.23	Keeping facility records of animal received or discharged.	
0149.24	Answer telephones and schedule appointments.	
0149.25	Respond to questions from patrons, and provide information about animals, such as behavior, habitat, breeding habits, or facility activities.	
0149.26	Adjust controls to regulate specified temperature and humidity of animal quarters, nurseries, or exhibit areas.	
0149.27	Discuss with clients their pets' grooming needs.	
0149.28	Install, maintain, and repair animal care facility equipment such as infrared lights, feeding devices, and cages.	

Course Description: This course is designed to give students the skills and knowledge needed to enter a career in the retail industry of animal processing. This course will build upon the concepts learned in Fundamentals of Animal Processing and emphasize retail cut processing, creating value added products, working with the public, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Production and Processing of Animal Products

Knowledge Indicator(s)		Skill Set Met
0151.01	Raw materials.	
0151.02	Production processes.	
0151.03	Quality control.	
0151.04	Production costs.	
0151.05	Techniques for maximizing effective manufacture and distribution of goods.	
Measurement Indicators		Skill Set Met
0151.06	Wrap, weigh, label and price cuts of meat.	
0151.07	Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper's eye.	
0151.08	Prepare special cuts of meat ordered by customers.	
0151.09	Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form.	
0151.10	Receive, inspect, and store meat upon delivery, to ensure meat quality.	
0151.11	Shape, lace, and tie roasts, using boning knife, skewer, and twine.	
0151.12	Remove bones and cut meat into cuts in preparation for marketing.	
0151.13	Use knives, cleavers, meat saws, bandsaws, or other equipment to perform meat cutting and trimming.	
0151.14	Clean, trim, slice, and section carcasses for future processing.	
0151.15	Cut and trim meat to prepare for packing.	
0151.16	Remove parts, such as skin, feathers, scales or bones, from carcass.	
0151.17	Inspect meat products for defects, bruises or blemishes and remove them along with any excess fat.	
0151.18	Estimate requirements and order or requisition meat supplies to maintain inventories.	
0151.19	Supervise other butchers or meat cutters.	
0151.20	Record quantity of meat received and issued to cooks and/or keep records of meat sales.	
0151.21	Negotiate with representatives from supply companies to determine order details.	
0151.22	Produce hamburger meat and meat trimmings.	
0151.23	Process primal parts into cuts that are ready for retail use.	
0151.24	Obtain and distribute specified meat or carcass.	
0151.25	Separate meats and byproducts into specified containers and seal containers.	

0151.26	Weigh meats and tag containers for weight and contents.	
---------	---	--

Course Description: This course is designed to give students the skills and knowledge needed to enter a career in an animal processing plant. This course will build upon the concepts learned in Fundamentals of Animal Processing and emphasize primal cut processing, workplace safety, government regulations, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Production and Processing of Animal Products

Production and Processing of Animal Products		Skill Set Met
Knowledge Indicator(s)		
0160.1	Raw materials	
0160.2	Production processes	
0160.3	Quality control	
0160.4	Production costs	
0160.5	Techniques for maximizing effective manufacture and distribution of goods	
Measurement Indicators		Skill Set Met
0160.6	Wrap, weigh, label and price cuts of meat	
0160.7	Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper's eye	
0160.8	Prepare special cuts of meat ordered by customers	
0160.9	Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form	
0160.10	Receive, inspect, and store meat upon delivery, to ensure meat quality	
0160.11	Shape, lace, and tie roasts, using boning knife, skewer, and twine	
0160.12	Remove bones, and cut meat into cuts in preparation for marketing	
0160.13	Use knives, cleavers, meat saws, bandsaws, or other equipment to perform meat cutting and trimming	
0160.14	Clean, trim, slice, and section carcasses for future processing	
0160.15	Cut and trim meat to prepare for packing	
0160.16	Remove parts, such as skin, feathers, scales or bones, from carcass	
0160.17	Inspect meat products for defects, bruises or blemishes and remove them along with any excess fat	
0160.18	Estimate requirements and order or requisition meat supplies to maintain inventories	
0160.19	Supervise other butchers or meat cutters	
0160.20	Record quantity of meat received and issued to cooks and/or keep records of meat sales	
0160.21	Negotiate with representatives from supply companies to determine order details	
0160.22	Produce hamburger meat and meat trimmings	
0160.23	Process primal parts into cuts that are ready for retail use	
0160.24	Obtain and distribute specified meat or carcass	
0160.25	Separate meats and byproducts into specified containers and seal containers	

0160.26 Weigh meats and tag containers for weight and contents.	
---	--

CASE is a nationwide curriculum available only to CASE certified trained instructors.

Curriculum for Agricultural Science Education courses are developed using elements from pedagogical approaches that are recognized in educational literature as proven and effective modes of teaching and learning. This foundation ensures validity for CASE methodology and provides the recipe for the effectiveness of the CASE model. The CASE model is a careful blend of time-tested instructional strategies used to guide students in their studies to meet the demands of post-secondary education and careers in the Agriculture, Food, and Natural Resources (AFNR) industries

For more information, visit [Home - Curriculum for Agricultural Science Education \(case4learning.org\)](http://case4learning.org)

Course Description: This course is designed to give students the skills and knowledge needed to enter a career in the retail industry of animal processing. This course will build upon the concepts learned in Fundamentals of Animal Processing and emphasize retail cut processing, creating value added products, working with the public, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Production and Processing of Animal Products

Knowledge Indicator(s)		Skill Set Met
0151.01	Raw materials.	
0151.02	Production processes.	
0151.03	Quality control.	
0151.04	Production costs.	
0151.05	Techniques for maximizing effective manufacture and distribution of goods.	
Measurement Indicators		Skill Set Met
0151.06	Wrap, weigh, label and price cuts of meat.	
0151.07	Prepare and place meat cuts and products in display counter, so they will appear attractive and catch the shopper's eye.	
0151.08	Prepare special cuts of meat ordered by customers.	
0151.09	Cut, trim, bone, tie, and grind meats, such as beef, pork, poultry, and fish, to prepare meat in cooking form.	
0151.10	Receive, inspect, and store meat upon delivery, to ensure meat quality.	
0151.11	Shape, lace, and tie roasts, using boning knife, skewer, and twine.	
0151.12	Remove bones and cut meat into cuts in preparation for marketing.	
0151.13	Use knives, cleavers, meat saws, bandsaws, or other equipment to perform meat cutting and trimming.	
0151.14	Clean, trim, slice, and section carcasses for future processing.	
0151.15	Cut and trim meat to prepare for packing.	
0151.16	Remove parts, such as skin, feathers, scales or bones, from carcass.	
0151.17	Inspect meat products for defects, bruises or blemishes and remove them along with any excess fat.	
0151.18	Estimate requirements and order or requisition meat supplies to maintain inventories.	
0151.19	Supervise other butchers or meat cutters.	
0151.20	Record quantity of meat received and issued to cooks and/or keep records of meat sales.	
0151.21	Negotiate with representatives from supply companies to determine order details.	
0151.22	Produce hamburger meat and meat trimmings.	
0151.23	Process primal parts into cuts that are ready for retail use.	
0151.24	Obtain and distribute specified meat or carcass.	
0151.25	Separate meats and byproducts into specified containers and seal containers.	

0151.26	Weigh meats and tag containers for weight and contents.	
---------	---	--

Course Description: This course is designed to develop student understanding and skills in such areas as channel management, marketing-information management, market planning, pricing, product/service management, promotion and selling. Through the use of projects, students acquire an understanding and appreciation of marketing activities. Current technology will be used to acquire information and to complete the projects. Formal reflection is an on-going component of the course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Advertising, Promotion, Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0422.1	Explain the concept and purpose of advertising and cooperative advertising.	
0422.2	List forms of advertising media and the advantages and disadvantages of each.	
0422.3	Characterize how merchandising impacts a retailer's perceived image and/or brand.	
0422.4	Demonstrate an understanding of the concept of the marketing mix and segmentation.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
0422.5	Apply effective verbal and telephone communications, including proper grammar and vocabulary.	
0422.6	Prepare basic written reports and product presentations.	
0422.7	Follow oral and written directions.	
0422.8	Describe forms of nonverbal communication.	

Technology in Retail Merchandising		Complete
Content Skill Sets		Knowledge/ Performance
0422.6	Describe benefits of technology in retailing.	
0422.7	Describe digital pricing and inventory systems.	
0422.8	Compare the advantages and disadvantages of electronic payment to the retail establishment.	
0422.9	Characterize how technological changes impact a retailer's perceived image and/or brand.	
0422.10	Describe various forms of digital retail technology (e.g., rewards programs, loyalty cards).	
0422.11	Compare advantages and disadvantages of "brick and mortar" versus online businesses.	

Customer Service, Sales, and Selling		Complete
Content Skill Sets		Knowledge/ Performance
0422.17	Explain the importance of positive customer relations.	
0422.18	Determine the customer/client needs and buying motives.	
0422.19	Demonstrate an understanding of the buying process.	
0422.20	Demonstrate product knowledge.	
0422.21	Contrast sales approaches (e.g., greeting).	

Retail-Related Mathematics		Complete
Content Skill Sets		Knowledge/ Performance
0422.22	Solve addition, subtraction, multiplication, division, fractions, decimals, and percentage problems pertaining to business/retailing.	
0422.23	Make a change with or without change indication.	
0422.24	Calculate amount of purchases, discounts, and special charges for purchases.	
0422.25	Identify various measures used by retailers (e.g., conversion, UPT).	
0422.26	Calculate price changes.	

West Virginia Standards

Principles of Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0422.30	Explain marketing and its importance in a global economy.	
0422.31	Describe the principles, practices, and concepts used in marketing.	
0422.32	Examine consumer behavior in relation to the buying process and marketing decisions.	
0422.33	Examine and describe the key elements of the marketing mix.	
0422.34	Describe marketing functions and related activities.	
0422.35	Explain the concept of marketing strategies.	
0422.36	Apply basic marketing concepts to solve marketing challenges.	
0422.37	Examine the concept of a target market.	
0422.38	Explain the concept of market and market identification.	
0422.39	Compare types of marketing segmentation.	
0422.40	Evaluate the role of advertising and promotion in a business organization including strategies and techniques for promoting products, services, and organizations.	
0422.41	Explain how advertising and promotion is a critical component of an integrated marketing strategy.	
0422.42	Compare and contrast various media and promotional devices used by businesses to promote their products and services.	
0422.43	Evaluate the effectiveness of various advertising media.	

0422.44	Identify the company's brand promise.	
0422.45	Explain the use of brand names in selling.	
0422.46	Explain the role of promotion as a marketing function.	
0422.47	Explain the types of promotion.	
0422.48	Describe the need for marketing data.	
0422.49	Explain the need for professional and ethical standards in marketing.	
0422.50	Explain employment opportunities in marketing.	

NOTES:

Course Description: This course is designed to develop student understanding and skills in such areas as the various marketing functions. Students coordinate channel management with other marketing activities, discuss the nature of marketing plans, generate product ideas, coordinate activities in the promotional mix and demonstrate specialized sales processes and techniques. Economic and financial concepts are also stressed throughout the course. Current technology will be used to acquire information and to complete the projects. Formal reflection is an on-going component of the course along with four projects. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Advertising, Promotion, Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.1	Characterize how merchandising impacts a retailer's perceived image and/or brand.	
0425.2	Demonstrate an understanding of the concept of the marketing mix and segmentation.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
0425.3	Prepare basic written reports and product presentations.	
0425.4	Follow oral and written directions.	

Economics		Complete
Content Skill Sets		Knowledge/ Performance
0425.5	Display knowledge of basic economic concepts, including supply and demand.	
0425.6	Distinguish between consumer wants and needs.	
0425.7	Explain the concept of opportunity cost.	
0425.8	Describe the concept of global opportunities related to goods and services.	
0425.9	Define characteristics of economies related to government involvement.	

Customer Service, Sales, and Selling		Complete
Content Skill Sets		Knowledge/ Performance
0425.10	Determine the customer/client needs and buying motives.	

0425.11	Demonstrate an understanding of the buying process.	
0425.12	Demonstrate product knowledge.	

West Virginia Standards

Services Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.13	Examine the marketing objectives and strategies used by organizations in the service industry.	
0425.14	Examine how organizations properly position services within a competitive market.	
0425.15	Evaluate the “Services Marketing Mix” (the 7-Ps) and relate them to managing service quality.	
0425.16	Describe the customer experience in the service industry and examine how organizations build competitive advantage.	

Ecommerce		Complete
Content Skill Sets		Knowledge/ Performance
0425.17	Distinguish between ecommerce and traditional commerce.	
0425.18	Define and examine the business components and applications of ecommerce, including technology, sales, and marketing.	
0425.19	Examine the importance of business-to-consumer applications, “e-tailing”, and consumer behavior in an online environment.	
0425.20	Understand and apply best practices in ecommerce advertising and marketing strategies.	
0425.21	Examine the legal, ethical, and security implications related to ecommerce.	
0425.22	Develop e-commerce marketing goals and evaluate electronic communications.	

Fashion Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.23	Determine the role of fashion-leaders and followers in the fashion movement.	
0425.24	Distinguish the theories of fashion adaptation.	
0425.25	Compare the principles of the fashion movement.	
0425.26	Differentiate among fashion trends, fads, and classics.	
0425.27	Outline current trends in fashion.	
0425.28	Recognize the relationship between fabric characteristics and product use.	
0425.29	Recognize influential fashion designers.	

Sports Entertainment & Recreation Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.30	Discover the field of sports, entertainment, and recreation marketing.	
0425.31	Recognize trends of sports, entertainment, and recreation as an industry in the local, state, national, and international arenas.	
0425.32	Compare reasons for athletic and celebrity sponsorships and endorsements.	
0425.33	Critique the advantages, disadvantages, and legal issues of sponsorships and endorsements.	
0425.34	Differentiate how laws impact the sports, entertainment, and recreation industries.	
0425.35	Recognize legal implications of copyright and privacy related to the entertainment industry.	
0425.36	Examine legal implications of licensing of trademarked products in the SER industry.	
0425.37	Recognize the relationship between branding and merchandising in the SER industry.	
0425.38	Determine merchandising opportunities for a SER event.	

Hospitality and Tourism Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.39	Identify the types of products and services in the Hospitality and Tourism industry.	
0425.40	Compare the segments of the industry: motels, hotels, conference centers, bed and breakfasts, resorts, etc.	
0425.41	Analyze the cruise and airline industries relevant to customers' requests.	
0425.42	Examine how tourism financially impacts the economy on both the state and national levels.	
0425.43	Analyze customer needs for destination, mode of transportation, travel dates, financial considerations, and accommodations required.	
0425.44	Recognize the use of facilities or catering services for events such as banquets or receptions and negotiate details of arrangements with clients.	
0425.45	Inspect layouts and advertising copy and edit scripts, audio and video tapes and other promotional materials for adherence to specifications.	
0425.46	Design and provide customers with brochures and publications containing travel information, such as local customs, points of interest or foreign country regulations.	

Real Estate Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.47	Recognize the role of a real estate professional.	
0425.48	Demonstrate how the real estate market is affected by supply and demand.	
0425.49	Discover the forms of promotions most frequently used in real estate.	
0425.50	Distinguish among land, real estate, and real property.	
0425.51	Examine the powers of government that may limit ownership of real estate (e.g., eminent domain, taxation, police power, escheat).	

0425.52	Recognize different types of deeds (eight forms of deeds).	
0425.53	Analyze ethical practices as they apply to real estate law.	
0425.54	Research the following contracts used in the real estate business: Brokerage representation agreements, purchase/sales agreements, option agreements, installment agreements (contracts, deeds, and leases for land).	

Careers in Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0425.55	Research career opportunities in fashion sales, textiles, and manufacturing industries.	
0425.56	Research sports, entertainment, and recreation career opportunities at the mentorship, internship, entry, mid-management, and upper-management levels.	
0425.57	Research career opportunities in the Hospitality and Tourism industry.	
0425.58	Recognize the role of a real estate professional.	
0425.59	Recognize different real estate specializations.	
0425.60	Determine educational needs for work experience and career opportunities.	

NOTES:

Advertising, Promotion, Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0426.1	Apply knowledge of advertising in social media	
0426.2	Characterize how merchandising impacts a retailer's perceived image and/or brand	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
0426.3	Prepare basic written reports and product presentations	

Technology in Retail Merchandising		Complete
Content Skill Sets		Knowledge/ Performance
0426.4	Characterize how technological changes impact a retailer's perceived image and/or brand	
0426.5	Describe various forms of digital retail technology (e.g., rewards programs, loyalty cards)	

Customer Service, Sales, and Selling		Complete
Content Skill Sets		Knowledge/ Performance
0426.6	Determine the customer/client needs and buying motives	
0426.7	Demonstrate an understanding of the buying process	
0426.8	Contrast sales approaches (e.g., greeting)	

West Virginia Standards

Digital Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0426.9	Discuss the nature of digital marketing	
0426.10	Use analytical tracking tools for marketing communications	
0426.11	Evaluate media's contribution to campaign's effectiveness	
0426.12	Establish credibility with Internet users	
0426.13	Monitor daily social-media analytic	

0426.14	Explain the use of social media for digital marketing	
0426.15	Develop social media plan	
0426.16	Implement an integrated social-media strategy	
0426.17	Quantify contribution of social media (metrics and goals, finding what is good, measuring and adjusting on the fly, reporting and sharing insights)	
0426.18	Monitor online brand and reputation	
0426.19	Explain the nature of online advertising	
0426.20	Discuss the use of search-engine optimization tactics for digital marketing	
0426.21	Explain the role of business websites in digital marketing	
0426.22	Identify strategies for attracting targeted audience to website	
0426.23	Identify technologies to improve website ranking/positioning on search engines/directories	
0426.24	Assess web analytic	

Digital Media Communication		Complete
Content Skill Sets		Knowledge/ Performance
0426.25	Identify the purpose, audience and audience needs for preparing advertising media	
0426.26	Explain the nature and scope of channel management	
0426.27	Communicate with others (such as peers and clients) about design plans	
0426.28	Describe how the design plans are meeting the purpose, and target audience needs	
0426.29	Employ communication styles appropriate to target audience	
0426.30	Define the various types of create commons licenses	
0426.31	Describe the purpose of copyright, creative commons, public domain, etc.	
0426.32	Adhere to copyright and creative commons laws	
0426.33	Locate digital images and multimedia published under various copyright and creative commons licenses	
0426.34	Maintain digital safety, including personal and computer safety	
0426.35	Create graphics for business professional use: logos, letterheads, business cards, brochures, posters, billboards, cards, etc.	
0426.36	Create basic designs, drawings and illustrations for multimedia use in commercials, animations, advertisements, infographics, etc.	
0426.37	Utilize multiple platforms for creating and enhancing digital multimedia projects	
0426.38	Apply layout and design principles for attractiveness and readability	
0426.39	Compare the elements and principles of line and design	
0426.40	Determine how to use design to create illusions that enhance appearance	
0426.41	Examine the principles of color psychology and symbolism	
0426.42	Examine the color wheel	
0426.43	Analyze color schemes	

Marketing Strategies		Complete
Content Skill Sets		Knowledge/

	Performance
0426.44 Assess marketing promotional content in digital media	
0426.45 Repurpose content for use in multiple platforms	
0426.46 Develop digital marketing campaign	
0426.47 Develop and Evaluate digital marketing strategies	
0426.48 Implement strategies for advertising campaign	
0426.49 Outline the marketing management and planning process	
0426.50 Assess the importance of the marketing concept	
0426.51 Recognize the use of marketing positioning.	
0426.52 Plan and prepare advertising and all promotional materials to increase sales of products or services, working with customers, company officials, sales departments and advertising agencies.	
0426.53 Gather and organize information to plan advertising campaigns.	
0426.54 Gather and organize information to plan advertising campaigns.	
0426.55 Compile analyze and report data to explain economic phenomena and forecast market trends.	
0426.56 Utilize general advertising guidelines	
0426.57 Illustrate print, broadcast, outdoor/transit, and specialty media	

NOTES:

Marketing Work Experience/Internship**Course #: 0428**

Course Description: This course is designed to develop student understanding and skills in such areas as the elements of introductory employment knowledge and skills necessary for a career in the business and marketing field. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Human Relations Skills**Complete****Content Skill Sets****Knowledge/
Performance**

0428.1 Exhibit proper business ethics in all business activities.

0428.2 Exhibit appreciation of diversity in the workplace.

0428.3 Exhibit a positive attitude and relationship with customers, co-workers and management.

0428.4 Demonstrate initiative in completing job duties.

0428.5 Show respect for customers, co-workers and management.

0428.6 Serve as a team member while completing a work project.

0428.7 Follow directions when completing a project.

Basic Communications**Complete****Content Skill Sets****Knowledge/
Performance**

0428.8 Use correct grammar and vocabulary in written and oral communications.

0428.9 Write notes, memos and emails to customers, co-workers and management.

0428.10 Use proper telephone techniques.

0428.11 Follow procedures when a job is terminated.

0428.12 Describe policies and procedures to customers and clients.

0428.13 Read instructions for clarification

0428.14 Use a computer to accomplish job related tasks

0428.15 Type word processing documents.

0428.16 Fill out forms with all needed information completed.

0428.17 Identify how the inappropriate use of nonverbal communication can stifle working relationships, productivity, and teamwork.

Basic Work Skills**Complete****Content Skill Sets****Knowledge/
Performance**

0428.18 Exhibit punctuality, attendance and dependability on the job.

0428.19	Focus on tasks without direct supervision.	
0428.20	Demonstrate strategies for completion of assigned tasks.	
0428.21	Focus on time management principles when prioritizing tasks.	
0428.22	Apply organizational skills in daily work activities.	
0428.23	Show accountability for job performance.	
0428.24	Show initiative when learning new job responsibilities.	

Work Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0428.25	Demonstrate good work ethics during each work period.	
0428.26	Exhibit initiative without direct supervision.	
0428.27	Demonstrate leadership skills when working with coworkers.	
0428.28	Use problem solving skills when confronted with a problem.	
0428.29	Demonstrate flexibility and adaptability when jobs/tasks change.	
0428.30	Show openness to employers' suggestions and constructive criticism.	
0428.31	Follow directions.	
0428.32	Check accuracy of work.	
0428.33	Exhibit good grooming and hygiene.	
0428.34	Demonstrate punctuality.	
0428.35	Take on new challenges, admit mistakes and fix them.	
0428.36	Handle conflicts when confronted.	
0428.37	Set and achieve goals.	
0428.38	Participate in new training opportunities.	
0428.39	Exhibit leadership skills and take charge when warranted.	
0428.40	Read trade journals and magazine articles about the company and the industry in which they work	
0428.41	Keep work areas neat and organized.	
0428.42	Use down time productively.	
0428.43	Ask questions when unsure about instructions.	

NOTES:

Course Description: This course is designed to develop student understanding for the great outdoors and adventure. Students are provided with a unique and beneficial opportunity to experience the travel and tourism adventure industry in wild and wonderful West Virginia. This program is designed for students interested in careers pertaining to Event Planning, Hospitality, Tourism, Outdoor Leadership, Hotel/Restaurant Operations, Entrepreneurship, and more. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA or FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Introduction to Adventure Tourism		Complete
Content Skill Sets		Knowledge / Performance
0438.01	Discuss what makes adventure tourism different than other forms of tourism.	
0438.02	Examine qualities and characteristics of the adventure tourism industry.	
0438.03	Outline why people choose adventure tourism.	

Types of Adventure Tourism		Complete
Content Skill Sets		Knowledge / Performance
0438.04	Research each type of adventure tourism.	
0438.05	Present examples of each type of adventure tourism.	
0438.06	Participate in adventure tourism activities.	

Adventure Resorts versus Guiding Services		Complete
Content Skill Sets		Knowledge / Performance
0438.07	Site visit and experience both adventure resorts and guiding services.	
0438.08	Research price and trip differences between each adventure resorts and guiding services.	

Insurance and Permitting		Complete
Content Skill Sets		Knowledge / Performance
0438.09	Research insurance and permits for an adventure tourism site in WV.	
0438.10	Fill out insurance applications for an adventure tourism event, trip or activity.	
0438.11	Review different waivers for adventure tourism in WV.	

Careers in Adventure Tourism		Complete
Content Skill Sets		Knowledge / Performance
0438.12	Complete a job search in the adventure tourism field.	
0438.13	Develop a portfolio for use with applying for adventure tourism internships and work-based.	
0438.14	Participate in trainings and certifications specific to adventure tourism.	
0438.15	Observe an adventure tourism organization.	

Risk and Crisis Management		Complete
Content Skill Sets		Knowledge / Performance
0438.16	Create risk assessments for different adventure tourism activities.	
0438.17	Develop risk management plans for each different type of adventure tourism.	
0438.18	Participate in adventure tourism activities and take notes on risk management.	

Course Descriptions: This course is designed as the first course to develop student understanding and skills essential for job success. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Communications, Critical Thinking, and Computational Skills		Complete
Content Skill Sets		Knowledge/ Performance
0511.01	Demonstrate the proper way to introduce themselves and others	
0511.02	Answer the telephone, provide information to callers, take messages or transfer calls to the appropriate individuals	
0511.03	Use effective listening skills when given directions	
0511.04	Compute problems involving addition, subtraction, multiplication and division of whole numbers, decimals and fractions	
0511.05	Differentiate among wage plans	
0511.06	Follow appropriate steps to solve a problem	

Professionalism in the Workplace		Complete
Content Skill Sets		Knowledge/ Performance
0511.07	Recognize the value in having self-respect and a good self-concept	
0511.08	Develop a plan for self-improvement using work evaluations and constructive criticism provided by the different levels of authority	
0511.09	Demonstrate characteristics of professional conduct	
0511.10	Complete projects working as a member of a team	

Resource Allocations		Complete
Content Skill Sets		Knowledge/ Performance
0511.11	Develop short-term and long-term goals	
0511.12	Utilize time management techniques when completing projects	
0511.13	Develop a budget	
0511.14	Compare the services offered in banking institutions	
0511.15	Compare different types of credit and loans	
0511.16	Complete a credit and loan application	
0511.17	Analyze the purpose of insurance	
0511.18	Analyze workers' compensation and employment security programs and explain why employees should be informed of their options	

Legal Rights and Obligations		Complete
Content Skill Sets		Knowledge/ Performance
0511.19	Demonstrate the steps of obtaining a legal contract	
0511.20	Identify one's legal rights and obligations as a productive member of society	
0511.21	Research laws related to working conditions, wages, hours, social security and taxes	
0511.22	Justify the inclusion of sexual harassment laws in the workplace and the consequences of noncompliance	
0511.23	Demonstrate ethical courses of action when working with others	
0511.24	Show honesty and reliability in actions and words	

Government and Economics		Complete
Content Skill Sets		Knowledge/ Performance
0511.25	Compare the types of business ownership	
0511.26	Debate the role of government in the United States economy	
0511.27	Assess the supply and demand of various products and how each influences the economy	
0511.28	Compare the advantages and disadvantages of self-employment	
0511.29	Analyze labor unions and the impact labor unions have on the economy	

Course Descriptions: This course is designed as the second course to develop student understanding and skills that are essential for job success. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Self-Improvement Strategies		Complete
Content Skill Sets		Knowledge/ Performance
0512.01	Develop a plan for self-improvement based on work evaluations	
0512.02	Exhibit professional conduct in the workplace	
0512.03	Complete a project working as a member on a team	
0512.04	Determine an alternative solution to a problem	

Employee Benefits		Complete
Content Skill Sets		Knowledge/ Performance
0512.05	Compare employers' employee benefit offerings	
0512.06	Choose an employee benefit package for both an individual and a family	
0512.07	Assess the laws concerning unemployment compensation	
0512.08	Research laws providing benefits and protection to employees	

Business Operations		Complete
Content Skill Sets		Knowledge/ Performance
0512.09	Identify the characteristics of global economic systems	
0512.10	Demonstrate the functions of supply and demand	
0512.11	Determine the benefits of competition and profit	
0512.12	Participate in a collective bargaining situation	

Ethics and Social Responsibility		Complete
Content Skill Sets		Knowledge/ Performance

		Performance
0512.13	Determine management's role in setting ethical standards	
0512.14	Determine why legality is only the first step in behaving ethically	
0512.15	Identify how a business could promote social responsibility in its local community	
0512.16	Identify the role of American businesses in influencing ethical and social responsibility in global markets	

Employment Success Characteristics		Complete
Content Skill Sets		Knowledge/ Performance
0512.17	Identify the technological equipment relevant to the occupation	
0512.18	Follow the chain of command in reporting a problem, filing a complaint, etc.	
0512.19	Exhibit punctuality and dependability on the job	
0512.20	Master the job skills relevant to the occupation	
0512.21	Demonstrate how to ask management for a raise	
0512.22	Participate in a job interview	
0512.23	Participate in an exit interview	
0512.24	Identify methods to handle a loss of employment	
0512.25	Write a letter of reference	
0512.26	Identify reasons why people work	

Course Description: This course is designed as the first course to develop student understanding and skills using on-the-job training that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Human Relations Skills		Complete
Content Skill Sets		Knowledge/ Performance
0513.01	Exhibit proper business ethics in all business activities.	
0513.02	Show respect for customers, co-workers and management.	
0513.03	Exhibit a positive attitude and relationship with customers, co-workers, and management.	
0513.04	Serve as a team member while completing a work project.	
0513.05	Exhibit appreciation for diversity in the workplace.	
0513.06	Demonstrate initiative in completing job duties.	
0513.07	Adapt to changes in job responsibilities.	
0513.08	Appreciate diversity in the workplace.	
0513.09	Establish self-control when working with customers, co-workers, and management.	
0513.10	Use appropriate assertiveness.	
0513.11	Show empathy for customers, co-workers, and management.	
0513.12	Use feedback from others for personal growth.	
0513.13	Demonstrate proper business etiquette.	
0513.14	Identify procedures to respond to sexual harassment.	

Business Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
0513.15	Use correct grammar and vocabulary in written and oral communications.	
0513.16	Listen to and follow oral directions.	
0513.17	Read and follow written directions.	
0513.18	Provide policies and procedures to customers and clients.	
0513.19	Perform proper telephone techniques for receiving and placing calls.	

0513.20	Establish the proper procedures for job termination.	
---------	--	--

Basic Work Skills		Complete
Content Skill Sets		Knowledge/ Performance
0513.21	Exhibit punctuality, appropriate attendance and dependability in the workplace.	
0513.22	Show responsibility by working independently without direct supervision.	
0513.23	Focus on an assigned task until successful completion.	
0513.24	Utilize time management principles when completing assignments.	
0513.25	Apply organizational skills in daily activities.	
0513.26	Participate as a team member when completing a work project.	
0513.27	Produce quality work.	
0513.28	Accept accountability for one's performance.	
0513.29	Perform basic mathematical functions.	
0513.30	Operate electronic equipment with speed and accuracy.	
0513.31	Maintain records for use on the job and in class.	
0513.32	Demonstrate leadership skills when completing a project or task.	
0513.33	Demonstrate decision-making skills.	
0513.34	Solve problems individually and as a team member.	
0513.35	Participate in company meetings and activities.	

Basic Safety Techniques		Complete
Content Skill Sets		Knowledge/ Performance
0513.36	Use basic safety rules in the workplace.	
0513.37	Use company equipment properly and safely.	
0513.38	Demonstrate safety procedures for handling and lifting materials.	
0513.39	Establish and follow procedures in the case of an accident, including reporting procedures.	
0513.40	Use and follow security procedures.	
0513.41	Practice proper safety procedures for handling and storing hazardous materials.	
0513.42	Report hazardous conditions.	
0513.43	Interpret operating instructions before using equipment.	
0513.44	Explain and practice procedures for safe evacuation.	
0513.45	Identify proper agencies for safety procedures (ambulance, fire department, police department, hospitals, OSHA, etc.).	

Course Description: This course is designed as the second course to develop student understanding and skills using on-the-job training that contributes to the over-all instructional program. The instruction, through written agreement between school and employers, is a combination of study in school with employment in the appropriate field. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Human Relations Skills		Complete
Content Skill Sets		Knowledge/ Performance
0514.01	Develop self-control when working with customers, co-workers, and management.	
0514.02	Use appropriate assertiveness.	
0514.03	Demonstrate empathy for customers, co-workers, and management.	
0514.04	Use feedback from others for personal growth.	
0514.05	Utilize proper business etiquette.	
0514.06	Recognize procedures to respond to sexual harassment.	

Business Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
0514.07	Use correct grammar and vocabulary in written and oral communications.	
0514.08	Listen to and follow oral directions.	
0514.09	Read and follow written directions.	
0514.10	Provide policies and procedures to customers and clients.	
0514.11	Perform proper telephone techniques for receiving and placing calls.	
0514.12	Establish the proper procedures for job termination.	

Technology Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
0514.13	Discover how changing technology affects the workplace.	
0514.14	Predict ways workers can become technologically literate.	
0514.15	Determine how a business can effectively use the internet.	

0514.16	Debate basic copyright law protections.	
0514.17	Research ethical procedures for use of personal technological equipment.	
0514.18	Discover how changing technology affects the workplace.	

Basic Work Skills		Complete
Content Skill Sets		Knowledge/ Performance
0514.19	Compute basic mathematical functions.	
0514.20	Utilize the most common electronic equipment with speed and accuracy.	
0514.21	Breakdown appropriate records for use on the job and in class.	
0514.22	Demonstrate leadership skills when completing a project or task.	
0514.23	Distinguish decision-making skills.	
0514.24	Solve problems individually and as a team member.	
0514.25	Contribute during company meetings and activities.	

Basic Safety Techniques		Complete
Content Skill Sets		Knowledge/ Performance
0514.26	Use basic safety rules in the workplace.	
0514.27	Use company equipment properly and safely.	
0514.28	Demonstrate safety procedures for handling and lifting materials.	
0514.29	Establish and follow procedures in the case of an accident, including reporting procedures.	
0514.30	Use and follow security procedures.	
0514.31	Practice proper safety procedures for handling and storing hazardous materials.	
0514.32	Report hazardous conditions.	
0514.33	Interpret operating instructions before using equipment.	
0514.34	Explain and practice procedures for safe evacuation.	
0514.35	Identify proper agencies for safety procedures (ambulance, fire department, police department, hospitals, OSHA, etc.).	

Course Description: This course gives students the opportunity to integrate theory and practice by interacting with industry professionals. Students will study various requirements for employability including ethics, communication, teamwork and professionalism. Students will participate in hands-on, digital or work based experiences related to industry settings in order to practice skill sets and to transition from student to employee. A supervised project will be developed in one or more of the following categories: Entrepreneurship (ownership or operation of a business); Placement (employment or internship); Research and Experimentation (planning and/or conducting a scientific experiment); Exploration (exploration of related careers through activities such as shadowing employees in various work settings, conducting on-line research, attending professional development activities, etc.). Students will develop materials to supplement their Simulated Workplace portfolios.

Workplace Exploration		Complete
Content Skill Sets		Knowledge/ Performance
0520.01	Discuss methods of socialization to various employment settings within the chosen specialization field.	
0520.02	Examine organizational structures including policies and procedures of various workplace setting.	
0520.03	Compare organizational mission statements to organizational performance.	
0520.04	Identify conceptual frameworks applied in various workplace settings.	
0520.05	Identify types of customers and access their needs.	
0520.06	Examine methods of giving and receiving supervision.	
0520.07	Explain requirements and competencies for a chosen specialization.	
0520.08	Discuss methods of socialization to various employment settings within the chosen specialization field.	

Employment Process		Complete
Content Skill Sets		Knowledge/ Performance
0520.09	Research potential Work-Based Learning placements.	
0520.10	Complete a job application.	
0520.11	Design a resume to be used in the Work-Based Learning placement.	
0520.12	Plan and write a letter of introduction.	
0520.13	Supplement simulated workplace portfolio materials.	

Legal, Ethical Safety Guidelines		Complete
Content Skill Sets		Knowledge/ Performance
0520.14	Discuss labor laws applicable to Work-Based Learning.	
0520.15	Discuss workers compensation as it applies to both paid and unpaid student workers.	

0520.16	Discuss safety in the workplace.	
0520.17	Discuss confidentiality in the workplace.	

Professional Behavioral Competencies		Complete
Content Skill Sets		Knowledge/ Performance
0520.18	Exhibit professional ethical behavior.	
0520.19	Display a positive attitude in the workplace.	
0520.20	Exhibit effective verbal and non-verbal communication skills.	
0520.21	Present findings clearly and persuasively using a range of technology tools.	
0520.22	Recognize information needed for problem solving.	
0520.23	Share information through a variety of oral, written and multimedia communications.	

Workplace Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0520.24	Choose specific skills and tasks to guide the Work-Based Learning experience.	
0520.25	Assess and report on the Work-Based Learning experience.	
0520.26	Apply research-based knowledge to practice situations.	
0520.27	Research and evaluate a job in the student's career interest field.	

West Virginia Welcome

Complete

Content Skill Sets (www.wvwelcome.com)Knowledge/
Performance

0522.1 Explain ways to improve the quality service each employee provided West Virginia guests.

0522.2 Recognize importance of guests and need too exceed guest's expectations and build guest loyalty.

0522.3 Share information regarding the services and local attractions available with all guests.

0522.4 Earn WV Welcome Hospitality Training Program Certificate.

0522.5 Explain ways to improve the quality service each employee provided West Virginia guests.

First Aid/CPR

Complete

Content Skill Sets (www.profirstaid.com)Knowledge/
Performance

0522.6 Access nationally recognized First Aid and CPR standards

0522.7 Explain principles of infection control

0522.8 Understand the importance of proper handwashing according to the Center for Disease Control

0522.9 Understand the Good Samaritan Act

0522.10 Discuss informed consent

0522.11 Apply skills to obtain training and/or certification in CPR and First Aid

Foodhandler

Complete

Content Skill Sets (www.servsafe.com)Knowledge/
Performance

0522.12 Explain how food becomes unsafe and their role in keeping food safe

0522.13 Explain how, when and where to wash their hands as well as other hand care guidelines

0522.14 Identify important practices for good personal hygiene

0522.15 Time and temperature and identify food most likely to become unsafe

0522.16 Properly calibrate a thermometer and measure the temperature of food

0522.17 Identify holding and labeling TCS food for storage

0522.18 Describe how to prevent cross-contamination during preparation of food and storing utensils

0522.19 Explain what to do for people who have food allergies.

0522.20 Explain how and when to clean, sanitize and handling of cleaning towels and supplies

0522.21 Demonstrate how to handle garbage

0522.22 Identify spotting pests

0522.23 Explain how to be sure the food you receive is safe

0522.24 Identify safe ways to thaw, cook, cool, and reheat TCS food

0522.25	Earn food handler credentials	
---------	-------------------------------	--

Basic Measurement		Complete
Content Skill Sets (http://www.toolingu.com/class/140010/basic-measurement-101)		Knowledge/ Performance
0522.26	Define inspection and standardization	
0522.27	Distinguish between accuracy and precision	
0522.28	Distinguish between gaging and variable inspection	
0522.29	Define sensitivity in measuring instruments	
0522.30	Describe the steel rule	
0522.31	Describe calipers	
0522.32	Describe the micrometer	
0522.33	Explain the vernier scale	
0522.34	Identify commonly used micrometers	
0522.35	Describe gage blocks	
0522.36	Describe go/no-go gaging with plug gages	
0522.37	Identify other commonly used gages	
0522.38	Describe height gages and granite plates	
0522.39	Recognize the importance of mastering and calibration	
0522.40	Earn basic measurement credentials	

5S Overview Resources		Complete
Content Skill Sets (http://www.toolingu.com/class/220050/5S-overview-151)		Knowledge/ Performance
0522.41	Define 5S	
0522.42	Identify the steps involved in 5S	
0522.43	Describe the sort step of 5S	
0522.44	Describe the set in order step of 5S	
0522.45	Describe the sweep step of 5S	
0522.46	Describe the standardize step of 5S	
0522.47	Describe the sustain step of 5S	
0522.48	Describe 5S plus 1	
0522.49	Describe the purpose of 5S implementation	
0522.50	Describe the purpose of communication boards to 5S	
0522.51	Identify ways to assess 5S success before, during, and after implementation	
0522.52	Describe the challenges to implementing a 5S program	
0522.53	Describe the advantages to implementing a 5S program	
0522.54	Earn 5S overview credentials	

Intro to OSHAA		Complete
Content Skill Sets (http://www.toolingu.com/class/160010)		Knowledge/ Performance
0522.55	Define "standard" as used by OSHA	
0522.56	List the for OSHA inspections	
0522.57	List the order of priority and steps in an OSHA inspection	
0522.58	Describe the rights of employees and employers regarding OSHA standards	
0522.59	Describe methods of obtaining further information on workplace safety	
0522.60	Earn intro to OSHA credentials	

Personal Protection Equipment Resources		Complete
Content Skill Sets (http://www.toolingu.com/class/160020/personal-protective-equipment-111)		Knowledge/ Performance
0522.61	Explain OSHA PPE requirements for employers and employees	
0522.62	Explain the common steps performed during a hazard assessment for selecting PPE	
0522.63	Describe the importance of consistently wearing PPE	
0522.64	Earn personal protective equipment credential	
0522.65	Explain OSHA PPE requirements for employers and employees	

Walking and Working Surfaces		Complete
Content Skill Sets (http://www.toolingu.com/class/160060/walking-and-working-surfaces-171)		Knowledge/ Performance
0522.66	Describe the purpose of safeguarding walking and working surfaces	
0522.67	Describe employee responsibilities regarding walking and working surfaces	
0522.68	Identify and protect types of floor openings, wall openings, and holes	
0522.69	Earn walking and working surfaces credentials	

Blood Borne Pathogens		Complete
Content Skill Sets (http://www.toolingu.com/class/160050/bloodborne-pathogens-161)		Knowledge/ Performance
0522.70	Describe risks of blood borne pathogens and the actions to take if exposed	
0522.71	Describe workplace medical recordkeeping and sharps injury log requirements	
0522.72	Earn blood borne pathogens credentials	

SDS and Hazard Communication

Complete

Content Skill Sets (<http://www.toolingu.com/class/160045/sds-and-hazard-communication-151>)

Knowledge/
Performance

0522.73	Describe the ways hazard communication exists and is enforced	
0522.74	Identify chemical hazard classifications	
0522.75	Identify types of hazards	
0522.76	Identify types of health hazards with systemic effects	
0522.77	Describe OSHA's labeling requirements for hazardous chemicals	
0522.78	Define SDS and describe the information that OSHA requires an SDS to contain	
0522.79	Describe the hazardous chemical information and training requirements	
0522.80	Describe the training and SDS requirements necessary for a hazardous communication program	
0522.81	Learn SDS and hazard communication credentials	

Fire and Safety Prevention

Complete

Content Skill Sets (<http://www.toolingu.com/class/160070/fire-safety-and-prevention-181>)

Knowledge/
Performance

0522.82	Describe the ways hazard communication exists and is enforced	
0522.83	Identify chemical hazard classifications	
0522.84	Identify types of hazards	
0522.85	Identify types of health hazards with systemic effects	
0522.86	Describe OSHA's labeling requirements for hazardous chemicals	
0522.87	Define SDS and describe the information that OSHA requires an SDS to contain	
0522.88	Describe the hazardous chemical information and training requirements	
0522.89	Describe the training and SDS requirements necessary for a hazardous communication program	
0522.90	Learn SDS and hazard communication credentials	

Essentials of Communication

Complete

Content Skill Sets (<http://www.toolingu.com/class/950120/essentials-of-communication-120>)

Knowledge/
Performance

0522.91	Describe communication and the key steps involved.	
0522.92	Describe verbal, nonverbal and written communication.	
0522.93	Describe conflict stimulation.	
0522.94	Identify steps for resolving unhealthy conflict.	
0522.95	Earn essentials of communications credentials.	
0522.96	Describe communication and the key steps involved.	
0522.97	Describe verbal, nonverbal and written communication.	

Harassment and Discrimination

Complete

Content Skill Sets (<http://www.toolingu.com/class/950215/harassment-and-discrimination-215>)

Knowledge/
Performance

0522.89	Describe managing diversity in the workplace and Title VII of the Civil Rights Act	
0522.90	Describe gender discrimination, the glass ceiling for women in the workplace and the equal pay act	
0522.98	Describe the types sexual harassment	
0522.99	Describe the Family and Medical Leave, Americans with Disabilities, and Age Discrimination Acts	
0522.100	Describe the equal employment opportunity commission	
0522.101	Describe how to protect your company from litigation through anti-harassment and anti-discrimination policies	
0522.102	Earn harassment and discrimination credentials	
0522.103	Describe managing diversity in the workplace and Title VII of the Civil Rights Act	
0522.104	Describe gender discrimination, the glass ceiling for women in the workplace and the equal pay act	

Personal Finance

Complete

Content Skill Sets ([MoneySKILL: Instructor Login](#) and/or [EVERFI - Financial Education](#))

Knowledge/
Performance

0522.105	Define economic terms such as economy, free enterprise, and supply and demand and how they influence individuals	
0522.106	Describe some of the global factors that influence the economy	
0522.107	Learn about the costs of "free" items	
0522.108	Identify some societal level economic factors that influence our personal finances	
0522.109	Enumerate the steps necessary for creating a personal financial plan	
0522.110	Examine the risks that our financial choices carry	
0522.111	Discuss tips for making responsible financial decisions	
0522.112	Describe different types of financial institutions	
0522.113	Learn about some of the different types of accounts available	
0522.114	Discuss aspects to consider when choosing a financial institution	
0522.115	Examine the basics of the united states tax system	
0522.116	Examine and understand different types of insurance policies	
0522.117	Consider the different types of wills and their uses	
0522.118	Examine the basic elements of a contract	
0522.119	Discuss the advantages of saving money	
0522.120	Examine the advantages and disadvantages of investments and the types available	
0522.121	Discuss the advantages and disadvantages of consumer credit and the different types available	
0522.122	Examine factors that influence whether credit is extended to someone	
0522.123	Discuss factors in choosing credit cards and how to avoid credit problems	
0522.124	Create a budget	
0522.125	Explain why keeping financial records is important	
0522.126	Define identity theft and ways of reducing risks	

OSHA 10 Hour Card		Complete
Content Skill Sets (https://ondemand.puresafety.com/ http://careersafeonline.com/)		Knowledge/ Performance
0524.1	Describe the various hazards covered by OSHA standards.	
0524.2	Recognize and correct types of floor openings, wall openings, and holes.	
0524.3	Recognize the General Duty Clause.	
0524.4	Explain reporting procedures.	
0524.5	Understand OSHA inspections	
0524.6	Understand Personal Protective Equipment general guidelines.	
0524.7	Ensure current hazard communication programs and training documents meet current OSHA requirements.	
0524.8	Anticipate and recognize industrial health and hygiene risks.	
0524.9	Identify general safety procedures related to combustible and flammable liquids.	
0524.10	Recognize electrical hazards.	
0524.11	Describe proper materials handling and storage	
0524.12	Recognize safeguards that protect workers against mechanical hazards	
0524.13	Successfully complete an approved general industry OSHA 10 hour certification program.	

Lean Manufacturing Overview		Complete
Content Skill Sets (http://www.toolingu.com/class/220010/lean-manufacturing-overview-101)		Knowledge/ Performance
0524.15	Define lean manufacturing.	
0524.16	Identify common types of waste.	
0524.17	Explain the advantages of lean manufacturing.	
0524.18	Explain the importance of reducing inventory.	
0524.19	Identify sources of process variation.	
0524.20	Distinguish between inspection and error detection.	
0524.21	Explain the necessity of employee involvement.	
0524.22	List the activities of a Five S approach and explain continuous improvement.	
0524.23	Earn lean manufacturing credential.	

Essentials of Leadership		Complete
Content Skill Sets (http://www.toolingu.com/class/950110/essentials-of-leadership-110)		Knowledge/ Performance
0524.24	Define leadership and situational leadership.	
0524.25	Identify the myths about leadership.	
0524.26	Distinguish between managers and leaders.	
0524.27	Describe the interpersonal and informational roles of a manager.	
0524.28	Describe the basic ethics of being a leader.	
0524.29	Identify methods of motivation and describe empowerment.	
0524.30	Explain how to maintain a position of leadership.	
0524.31	Earn essentials of leadership credential.	

Personal Effectiveness		Complete
Content Skill Sets (http://www.toolingu.com/class/912190/personal-effectiveness-190)		Knowledge/ Performance
0524.32	Define the role of effective communication.	
0524.33	Describe common forms of written business communication.	
0524.34	Explain the steps in business writing.	
0524.35	List the steps for an effective presentation.	
0524.36	Explain how to plan and execute a meeting.	
0524.37	Explain the importance of creativity and the role of knowledge in the workplace.	
0524.38	Describe how individuals can develop their creativity.	
0524.39	Earn personal effectiveness credential.	

Team Leadership		Complete
Content Skill Sets (http://www.toolingu.com/class/950160/team-leadership-160)		Knowledge/ Performance
0524.40	Distinguish between a group and a team.	
0524.41	Identify the elements of a good team.	
0524.42	Describe the role of a team leader and roles of team members.	
0524.43	List the methods for establishing leadership of a pre-existing team.	
0524.44	Describe team-based decision making.	
0524.45	Explain how to solve a team conflict.	
0524.46	Describe how to reframe a conflict.	
0524.47	Earn team leadership credential.	

Conflict Resolution		Complete
Content Skill Sets (http://www.toolingu.com/class/950150/conflict-resolution-principles-150)		Knowledge/ Performance
0524.48	Distinguish between cognitive and affective conflicts.	
0524.49	List the four elements of workplace conflict.	
0524.50	Define mutual blame, interdependence and emotional involvement.	
0524.51	List the steps of the conflict resolution process and different response styles.	
0524.52	Earn conflict resolution credential.	

Quality and Customer Service		Complete
Content Skill Sets (http://www.toolingu.com/class/912170/quality-and-customer-service-175)		Knowledge/ Performance
0524.53	Describe quality assurance.	
0524.54	Distinguish between methods of problem analysis.	
0524.55	Describe factor analysis and reliability analysis.	
0524.56	Describe principles of continuous improvement.	
0524.57	Describe customer and field service.	
0524.58	Earn quality and customer service credential.	

Digital Citizenship		Complete
Content Skill Sets (Digital Literacy courses, programs & resources Microsoft Digital Literacy – English course resources)		Knowledge/ Performance
0524.59	Work with computers	
0524.60	Access information online	
0524.61	Communicate online	
0524.62	Participate safely and responsibility online	
0524.63	Create digital content	
0524.64	Collaborate ad Manage content digitally	

Microsoft Word		Complete
Content Skill Sets (Microsoft Imagine Academy)		Knowledge/ Performance
0524.74	Create new blank documents	
0524.75	Import files	
0524.76	Open a PDF in Word for editing	
0524.77	Insert hyperlinks, watermarks, and page numbers	
0524.78	Insert simple headers and footers	

0524.79	Customize the quick access toolbar and ribbon	
0524.80	Configure documents to print	
0524.81	Save documents in alternate file formats	
0524.82	Protect documents with passwords	
0524.83	Find and replace and copy and paste text	
0524.84	Insert built-in fields and special characters	
0524.85	Use format painter	
0524.86	Set paragraph and line spacing	
0524.87	Highlight text selections and add styles	
0524.88	Create multiple columns within sections	
0524.89	Convert text to tables and tables to text	
0524.90	Sort table data and use formulas	
0524.91	Add numbering or bullets	
0524.92	Modify list indentation, line spacing and numbering	
0524.93	Insert citations and bibliography	
0524.94	Insert images, quick parts and textboxes	
0524.95	Insert simple shapes and smartart	
0524.96	Position and wrap text around shapes	
0524.97	Create new blank documents	

Course Description: This course provides students with real-world work experience by connecting on-the-job training (OJT) to related technical instruction and academic competencies that can be applied in the workplace. Students will participate in work-based learning (WBL) opportunities, and study various requirements for employability, including ethics, communication, teamwork, and professionalism. Students will participate in hands-on, authentic WBL opportunities related to industry settings in order to practice skill sets and transition from student to employee.

Workplace Exploration		Complete
Content Skill Sets		Knowledge/ Performance
0520.01	Discuss methods of socialization to various employment settings within the chosen specialization field.	
0520.02	Examine organizational structures, including policies and procedures of various workplace settings.	
0520.03	Compare organizational mission statements to organizational performance.	
0520.04	Identify conceptual frameworks applied in various workplace settings.	
0520.05	Identify types of customers and access their needs.	
0520.06	Examine methods of giving and receiving supervision.	
0520.07	Explain requirements and competencies for a chosen specialization.	
0520.08	Discuss methods of socialization to various employment settings within the chosen specialization field.	

Employment Process		Complete
Content Skill Sets		Knowledge/ Performance
0520.09	Research potential Work-Based Learning placements.	
0520.10	Complete a job application.	
0520.11	Design a resume to be used in the Work-Based Learning placement.	
0520.12	Plan and write a letter of introduction.	
0520.13	Supplement simulated workplace portfolio materials.	

Legal, Ethical Safety Guidelines		Complete
Content Skill Sets		Knowledge/ Performance
0520.14	Discuss labor laws applicable to Work-Based Learning.	
0520.15	Discuss worker’s compensation as it applies to paid and unpaid student workers.	
0520.16	Discuss safety in the workplace.	
0520.17	Discuss confidentiality in the workplace.	

Professional Behavioral Competencies		Complete
Content Skill Sets		Knowledge/ Performance
0520.18	Exhibit professional, ethical behavior.	
0520.19	Display a positive attitude in the workplace.	
0520.20	Exhibit effective verbal and non-verbal communication skills.	
0520.21	Present findings clearly and persuasively using a range of technology tools.	
0520.22	Recognize information needed for problem-solving.	
0520.23	Share information through a variety of oral, written, and multimedia communications.	

Workplace Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0520.24	Choose specific skills and tasks to guide the Work-Based Learning experience.	
0520.25	Assess and report on the Work-Based Learning experience.	
0520.26	Apply research-based knowledge to practice situations.	
0520.27	Research and evaluate a job in the student's career interest field.	

Course Description: Patient care technicians (PCTs) are healthcare professionals who work in a variety of settings, including hospitals, clinics, nursing homes, and home health agencies. They provide direct patient care under the supervision of licensed nurses or physicians. The skillset required for PCTs is diverse and demanding. However, by completing the PCT curriculum and aligning training with the National Consortium for Health Science Education (NCSHE) Standards, PCTs will be well-prepared to provide high-quality, compassionate care to their patients. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Communication		Complete
Content Skill Sets		Knowledge/ Performance
0617.1	Communicate effectively to interact with patients, their families, and other healthcare professionals.	
0617.2	Listen actively, speak clearly, and convey empathy and compassion.	

Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0617.3	Correctly use personal protective equipment (PPE) and practice proper hand hygiene.	
0617.4	Understand and follow the principles of infection control to prevent the spread of infectious diseases.	

Vital Signs		Complete
Content Skill Sets		Knowledge/ Performance
0617.5	Measure and record vital signs accurately, including blood pressure, temperature, pulse rate, respiratory rate, and pulse oximetry.	
0617.6	Understand the normal ranges for vital sign measurements.	
0617.7	Recognize abnormal vital sign values that may indicate a change in the patient’s condition and appropriate reporting.	

Patient Safety		Complete
Content Skill Sets		Knowledge/ Performance
0617.8	Know patient safety practices and understand how to identify and report potential safety hazards.	
0617.9	Understand how to prevent falls.	
0617.10	Understand and demonstrate proper patient positioning.	
0617.11	Know when the use of restraints is necessary.	

Basic Medical Terminology

Basic Medical Terminology		Complete
Content Skill Sets		Knowledge/ Performance
0617.12	Understand basic medical terminology.	
0617.13	Use proper medical terminology to communicate effectively with other healthcare professionals.	
0617.14	Understand and properly interpret the patient's chart and medical records.	

Patient Care Skills

Patient Care Skills		Complete
Content Skill Sets		Knowledge/ Performance
0617.15	Proficiently demonstrate patient care skills including bathing, feeding, dressing, grooming, and transferring patients.	
0617.16	Understand the principles of body mechanics to prevent injury to self and patient.	
0617.17	Understand basic nutrition, therapeutic diets, and hydration.	
0617.18	Understand and proficiently demonstrate intake and output measuring and calculations, recording of results, and appropriate reporting.	
0617.19	Proficiently demonstrate appropriate patient positioning and mobility assistance.	
0617.20	Proficiently demonstrate basic wound care and dressing changes.	
0617.21	Proficiently demonstrate ostomy care, and urinary catheter care and monitoring.	
0617.22	Proficiently demonstrate elimination sample collections.	

ECG Skills

ECG Skills		Complete
Content Skill Sets		Knowledge/ Performance
0617.23	Demonstrate the skills and knowledge necessary to perform electrocardiography (ECG) including recognizing the different leads, how to place them, and what each wave represents.	
0617.24	Recognize normal and abnormal ECG rhythms and tracing, and understand the appropriate response for a cardiac emergency as seen on the ECG.	
0617.25	Demonstrate proper lead placement and how to modify placement in special circumstances (such as pacemakers).	
0617.26	Understand and demonstrate proper patient preparation, patient positioning, and the recording of accurate results.	
0617.27	Understand how to properly maintain the ECG equipment.	
0617.28	Know the anatomy and physiology of the hearts.	

Phlebotomy Skills

Phlebotomy Skills		Complete
Content Skill Sets		Knowledge/ Performance
0617.29	Proficiently demonstrate skills and knowledge necessary to perform phlebotomy.	

0617.30	Describe and define major body systems with an emphasis on the circulatory system.	
0617.31	List and describe the main superficial veins used in performing venipuncture.	
0617.32	Identify appropriate sites for capillary/venipuncture and name and locate the most desirable one(s).	
0617.33	Understand and demonstrate safety guidelines for blood collection and handling.	
0617.34	Know blood collection equipment and additives.	
0617.35	Describe the types of patient specimens that are analyzed in the clinical laboratory and the phlebotomist's role in collecting and/or transporting these specimens to the laboratory.	
0617.36	Demonstrate knowledge of established protocol for patient and specimen identification.	
0617.37	Define and utilize correct medical terminology and metric measurement needed for specimen collection.	

Emergency Procedures		Complete
Content Skill Sets		Knowledge/ Performance
0617.38	Know how to respond to emergency situations such as cardiac arrest, seizures, and choking.	
0617.39	Understand basic life support techniques, including cardiopulmonary resuscitation (CPR).	

Electronic Health Records		Complete
Content Skill Sets		Knowledge/ Performance
0617.40	Understand and demonstrate how to use electronic health records (EHRs) to document patient care accurately and efficiently.	
0617.41	Know how to enter patient data, review medical orders, and access patient information.	

Ethics and Legal Issues		Complete
Content Skill Sets		Knowledge/ Performance
0617.42	Understanding the ethical and legal issues that arise in healthcare, including patient confidentiality, informed consent, and scope of practice.	
0617.43	Know when to seek guidance from a licensed nurse or physician.	
0617.44	Understand the principles of ethical caregiving including beneficence, fidelity, and nonmaleficence.	

Culture Competence		Complete
Content Skill Sets		Knowledge/ Performance
0617.45	Display sensitivity to the cultural, ethnic, and religious backgrounds of patients.	
0617.46	Provide care that is respectful and inclusive.	
0617.47	Understand how cultural differences can affect patient care and communication.	

Notes:	
---------------	--

Course Description: The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals, and to provide information regarding careers in the Health Science Career Cluster. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices. Laboratory activities are an integral part of this program. These activities include instruction in the use of safety procedures, tools, equipment, materials and processes related to these occupations. Equipment and supplies should be provided to enhance hands-on experiences for students. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Career Preparation Skills		Complete
Content Skill Sets		Knowledge/ Performance
0700.01	Define and use proper terminology associated with the therapeutic services career pathway.	
0700.02	Describe some of the careers available in the therapeutic services career pathway.	
0700.03	Identify common characteristics of the careers in the therapeutic services career pathway.	
0700.04	Research the history of the therapeutic services career pathway and describe how the associated careers have evolved and impacted society.	
0700.05	Identify skills required to successfully enter any career in the therapeutic services career pathway.	
0700.06	Describe technologies associated in careers within the therapeutic services career pathway.	
0700.07	Define and use proper terminology associated with the allied health career pathway.	
0700.08	Describe some of the careers available in the allied health career pathway.	
0700.09	Identify common characteristics of the careers in the allied health career pathway.	
0700.10	Research the history of the allied health career pathway and describe how the careers have evolved and impacted society.	
0700.11	Identify skills required to successfully enter any career in the allied health career pathway.	
0700.12	Describe technologies associated in careers within the allied health career pathway.	
0700.13	Define and use proper terminology associated with the diagnostic services career pathway.	
0700.14	Describe some of the careers available in the diagnostic services career pathway.	
0700.15	Identify common characteristics of the careers in the diagnostic services career pathway.	
0700.16	Research the history of the diagnostic services career pathway and describe how the careers have evolved and impacted society.	
0700.17	Identify skills required to successfully enter any career in the diagnostic services career pathway.	
0700.18	Describe technologies associated in careers within the diagnostic services career pathway.	
0700.19	Define and use proper terminology associated with the health informatics career pathway.	
0700.20	Describe some of the careers available in the health informatics career pathway.	

0700.21	Identify common characteristics of the careers in the health informatics career pathway.	
0700.22	Research the history of the health informatics career pathway and describe how the careers have evolved and impacted society.	
0700.23	Identify skills required to successfully enter any career in the health informatics career pathway.	
0700.24	Describe technologies associated in careers within the health informatics career pathway.	
0700.25	Define and use proper terminology associated with the biotechnology research and development career pathway.	
0700.26	Describe some of the careers available in the biotechnology research and development career pathway.	
0700.27	Identify common characteristics of the careers in the biotechnology research and development career pathway.	
0700.28	Research the history of the biotechnology research and development career pathway and describe how the careers have evolved and impacted society.	
0700.29	Identify skills required to successfully enter any career in the biotechnology research and development career pathway.	
0700.30	Describe technologies associated in careers within the biotechnology research and development career pathway.	

Understanding the Workplace		Complete
Content Skill Sets		Knowledge/ Performance
0700.31	Describe how work relates to the needs and functions of the economy, society and personal fulfillment.	
0700.32	Describe the influences that societal, economic and technological changes have on employment trends and future training.	
0700.33	Describe the need for career planning, changing careers and the concept of lifelong learning and how they relate to personal fulfillment.	
0700.34	Describe how legislation such as the Americans with Disabilities Act and child labor laws regulates employee rights.	
0700.35	Demonstrate the ability to locate, understand and use career information.	
0700.36	Use the Internet to access career and education planning information.	
0700.37	Identify skills that are transferable from one occupation to another.	
0700.38	Demonstrate use of career resources to identify occupational clusters, career opportunities within each cluster, employment outlook and education/ training requirements.	
0700.39	Explain the relationship between educational achievement and career success.	
0700.40	Demonstrate personal qualities (e.g. Dependability, punctuality, responsibility, integrity, getting along with others) that are needed to be successful in the workplace.	
0700.41	Demonstrate skills needed to interact positively with others.	
0700.42	Demonstrate employability skills such as working on a team, problem-solving and organizational skills.	

Leadership Development		Complete
Content Skill Sets		Knowledge/ Performance
0700.43	Use results of an interest assessment to describe their top interest areas and relate to careers/career clusters.	
0700.44	Identify five values that they consider important in making a career choice.	
0700.45	Identify skills needed for career choices and match to personal abilities.	
0700.46	Demonstrate the ability to apply skills of self-advocacy and self-determination throughout the career planning process.	

0700.47	Identify strengths and areas in which assistance is needed at school.	
0700.48	Apply results of all assessments to personal abilities to make realistic career choices.	
0700.49	Identify and demonstrate steps in making career decisions.	
0700.50	Identify and demonstrate processes for developing short and long-term goals.	
0700.51	Discuss the establishment and history of the HOSA organization.	
0700.52	Identify the characteristics and responsibilities of leaders.	
0700.53	Demonstrate use of parliamentary procedure skills during a meeting.	
0700.54	Participate on a committee which has an assigned task and report to the class.	
0700.55	Demonstrate effective communication skills through delivery of a speech, a presentation or by conducting a demonstration.	
0700.56	Create a technology-based project related to the health science career cluster.	
0700.57	Identify secondary and postsecondary courses that meet tentative career plans.	
0700.58	Identify advantages/disadvantages of entering various secondary and postsecondary programs for the attainment of career goals.	
0700.59	Demonstrate knowledge of varied types and sources of financial aid to obtain assistance for postsecondary education.	
0700.60	Identify inappropriate discriminatory behaviors that may limit opportunities in the workplace.	
0700.61	Develop a career and education plan that includes short and long-term goals, high school program of study and postsecondary/work goals.	
0700.62	Describe how extracurricular programs can be incorporated in career and education planning.	
0700.63	Demonstrate knowledge of high school exit options (e.g., diploma, certificate of completion, special diploma, GED, etc.) And impact on post-school opportunities.	
0700.64	Describe high school credits and explain how GPAs are calculated.	
0700.65	Demonstrate skills to complete a job application.	
0700.66	Demonstrate skills essential for a job interview.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0700.67	Understand how information technology is used in health science career cluster.	
0700.68	Identify information technology (IT) careers in the health science career cluster including the responsibilities, tasks and skills required.	
0700.69	Relate information technology project management concepts and terms to careers in the health science career cluster.	
0700.70	Manage information technology components typically used in professions of the health science career cluster.	
0700.71	Identify security-related ethical and legal IT issues faced by professionals in the health science career cluster.	
0700.72	Identify the functions of web browsers and use them to access the world wide web and other computer resources typically used in the health science career cluster.	
0700.73	Use e-mail to send simple messages and files to other Internet users.	
0700.74	Demonstrate ways to communicate effectively using Internet technology.	
0700.75	Use different types of web search engines effectively to locate information relevant to the health science career cluster.	

Course Description: Instructional content will focus on healthcare information technology applications, employability skills, career development and technical skill preparation. The knowledge and skills acquired in this course provide guidance for career selection and application for both entry-level employment and postsecondary preparation. Instruction will incorporate project and problem-based healthcare practices and procedures to demonstrate the criticality of these skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Operations/Employment in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0710.01	Describe the desired traits of a healthcare professional.	
0710.02	Review departmental mission statement, goals, objectives and strategic plan.	
0710.03	Review departmental policies, procedures and processes.	
0710.04	Monitor customer expectations through satisfaction plans and measurement tools to assure adequacy of products and services.	
0710.05	Become familiar with ization, consolidation and/or re-engineering processes.	
0710.06	Adhere to a Code of Ethics to ensure corporate compliance.	
0710.07	Become familiar with legal, regulatory and accreditation or codes.	
0710.08	Become familiar with hazardous materials management program.	
0710.09	Review Emergency Preparedness Plan.	
0710.10	Read and comprehend help wanted ads.	
0710.11	Discuss qualifying for a job and how to get help finding a job.	
0710.12	Develop a resume and cover letter.	
0710.13	Write a business letter and address envelopes.	
0710.14	Fill out a job application.	
0710.15	Practice applying for a job by phone.	
0710.16	Practice interviewing skills.	
0710.17	Discuss how to keep a job.	
0710.18	Practice filling out business forms.	
0710.19	Practice communicating with the public.	
0710.20	Identify process for applying for medical coverage (employee).	
0710.21	Complete an accident report.	
0710.22	Complete a business travel expense form.	

Aseptic Procedures/Employment in Health Occupations		Complete
Content Skill Sets		Knowledge/ Performance
0710.23	Demonstrate various decontamination techniques and procedures.	
0710.24	Demonstrate knowledge of precaution guidelines.	
0710.25	Select procedures and precautions to be followed when using chemicals.	
0710.26	Review hazardous waste disposal policies and procedures in accordance with regulatory requirements.	
0710.27	Monitor the operations of a waste management program including recycling and reduction of regulated medical, solid, hazardous chemical and radioactive waste materials.	
0710.28	Demonstrate process and environmental requirements for proper handling and storage of sterile and non-sterile items.	
0710.29	Demonstrate appropriate inventory control and distribution systems.	
0710.30	Describe a program to purchase materials, supplies and capital equipment within allocated resources.	

Resource Management/Employment in Health Occupations		Complete
Content Skill Sets		Knowledge/ Performance
0710.31	Assess procedures and processes for the maintenance of equipment.	
0710.32	Review written instructions from the equipment manufacturers' operations manual, departmental policies and procedures.	
0710.33	Participate in a comprehensive training and education program, covering such aspects as safety, infection control, hazardous materials and new equipment use.	

Aesthetics/Employment in Health Occupations		Complete
Content Skill Sets		Knowledge/ Performance
0710.34	Maintain a clutter free environment.	
0710.35	Maintain the facility in good repair.	
0710.36	Deliver and present products and services in a timely manner.	

Course Description: This course is designed to allow instructional content to focus on basic medical terminology, growth and development, nutrition, health maintenance practices, and healthcare delivery systems. It is designed to provide the student with knowledge and technical skills required for infection control and the prevention of disease transmission, CPR, and First Aid. Students will be provided with the opportunity to acquire certification in these areas. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Notes: National Consortium for Health Science Education Health Care Standards and Accountability Criteria:
[NATIONAL CONSORTIUM FOR HEALTH SCIENCE EDUCATION STANDARDS](#)

*Clinical Specialty I and II include a clinical experience of 25-55 hours in selected Clinical Specialization.

* Foundations of Health Science (0711) is a prerequisite for Advanced Principles of Health Science (0715). These two courses provide the introductory core for all Health Science Programs of Study.

*Admission to Advanced Principles of Health Science (0715) requires a minimum course completion score of 80% in Foundations of Health Science (0711).

Refer to policy 2520.13 Guidance Document for recommended electives

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0711.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	
0711.02	Explain how different diseases can influence the functioning, behaviors, and attitudes of individuals including dementia/Alzheimer's disease.	
0711.03	Describe selected client service strategies (e.g., service, quality client care, client participation).	
0711.04	Define the stages and processes of death and dying and the influence those stages have on clients and their families.	

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0711.05	Discuss healthcare fields and the types of workers needed.	
0711.06	Describe employer behavioral expectations of healthcare personnel.	
0711.07	Identify the impact of quality in healthcare facilities as well as the responsibilities of users of the healthcare system (e.g., healthcare	

	workers maintenance of personal wellness).	
0711.08	Describe selected types of healthcare facilities and healthcare delivery systems (e.g., organizational and financial structure, departments and services, type and levels of healthcare personnel, policies, and requirements).	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0711.09	Describe the components of verbal and nonverbal communication and situations in which these skills can be effectively used.	
0711.10	Explain how active listening skills can improve client/individual and team communication.	
0711.11	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0711.12	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0711.13	Explain the roles and responsibilities of team members.	
0711.14	Describe the use of information technology in healthcare settings.	
0711.15	Using a problem-solving process applied to healthcare situations, describe how healthcare workers can effectively communicate with their clients/individuals and team members.	

Healthcare Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0711.16	Describe dimensions of values as they impact healthcare.	
0711.17	Describe basic principles of professional relationships.	
0711.18	Describe how ethical decision-making influences the care of clients.	
0711.19	Explain how an individual's diversity, socioeconomic, or religious beliefs could lead to potential ethical differences with that of other healthcare employees.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0711.20	Explain the laws (e.g., liability, influence on client care).	
0711.21	Explore legal issues such as sexual harassment, wrongful discharge, negligence, malpractice and violence in the workplace (e.g., abuse, neglect, exploitation, and the Vulnerable Adults law).	
0711.22	Identify the legal issues related to informed consent, advanced directives, ensuring the clients' rights and responsibilities, and accurate documentation.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0711.23	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities,	

	their employees, and clients/individuals.	
0711.24	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0711.25	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0711.26	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

Respecting Client and Staff Diversity		Complete
Content Skill Sets		Knowledge/ Performance
0711.27	Discuss the appropriate workplace expectations to interact with team members and care for clients/individuals from diverse cultures, gender, age groups.	
0711.28	Using a problem-solving process, applied to healthcare situations, describe how healthcare employees can respect client and staff diversity.	

WEST VIRGINIA STANDARDS

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0711.29	Identify the six essential nutrients.	
0711.30	Examine the basic food groups.	
0711.31	Compare therapeutic diets.	
0711.32	Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare. a. Metric system b. mathematical (averages, ratios, fractions, percentages, addition, subtraction, multiplication, division) c. Conversions (height, weight/mass, length, volume, temperature, household measurements)	
0711.33	Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.	
0711.34	Demonstrate use of the 24-hour clock/military time.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
0711.35	Identify and describe health issues in West Virginia.	
0711.36	Compare and contrast world health issues to West Virginia health issues.	

Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
0711.36	Working in a team, analyze major West Virginia or Global health challenges and proposed solutions.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0711.37	Apply skills to obtain training and/or certification in Health Care Provider or Professional Rescuer CPR, AED and FBAO.	
0711.38	Apply skills to obtain training and/or certification in First Aid.	

Course Description: Instructional content will focus on healthcare safety, environmental safety processes and procedures, ethical and legal responsibilities and mathematical computations. Medical terminology and the reinforcement, expansion, and enhancement of biology content specific to diseases and disorders are an integral part of the course. Instruction will incorporate project and problem-based healthcare practices and procedures to demonstrate the importance of these skills. Students will develop basic technical skills required for all health career specialties including patient privacy, communication, teamwork, and occupational safety, and be provided with opportunities to obtain certifications in HIPPA/Data Privacy and health care safety. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Notes: National Consortium for Health Science Education Health Care Standards and Accountability Criteria:
[NATIONAL CONSORTIUM FOR HEALTH SCIENCE EDUCATION STANDARDS](#)

*Clinical Specialty I and II include a clinical experience of 25-55 hours in selected Clinical Specialization.

*Foundations of Health Science (0711) is a prerequisite for Advanced Principles of Health Science (0715). These two courses provide the introductory core for all Health Science Programs of Study.

*Admission to Advanced Principles of Health Science (0715) requires a minimum course completion score of 80% in Foundations of Health Science (0711).

Refer to policy 2520.13 Guidance Document for recommended electives.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0715.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	
0715.02	Explain how different diseases can influence the functioning, behaviors, and attitudes of individuals including dementia/Alzheimer's disease.	
0715.03	Describe selected client service strategies (e.g., service, quality client care, client participation).	
Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0715.04	Describe employer behavioral expectations of healthcare personnel.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0715.06	Describe communication skills that are important when managing conflict.	
0715.07	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0715.08	Explain the roles and responsibilities of team members.	
0715.09	Describe the use of information technology in healthcare settings.	
0715.10	Using a problem-solving process applied to healthcare situations, describe how healthcare workers can effectively communicate with their clients/individuals and team members.	

Healthcare Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0715.11	Describe dimensions of values as they impact healthcare.	
0715.12	Describe basic principles of professional relationships.	
0715.13	Describe how ethical decision-making influences the care of clients.	
0715.14	Explain how an individual's diversity, socioeconomic, or religious beliefs could lead to potential ethical differences with that of other healthcare employees.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0715.15	Explain the laws (e.g., liability, influence on client care).	
0715.16	Identify the legal issues related to informed consent, advanced directives, ensuring the clients' rights and responsibilities, and accurate documentation.	
0715.17	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0715.18	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0715.19	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0715.20	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

Respecting Client and Staff Diversity		Complete
Content Skill Sets		Knowledge/ Performance
0715.21	Describe one's personal belief system as well as the belief systems and practices of diverse cultures.	
0715.22	Explore personal responsibility as a healthcare employee to treat each person as an individual.	
0715.23	Discuss the appropriate workplace expectations to interact with team members and care for clients/individuals from diverse cultures, gender, age groups.	

WEST VIRGINIA STANDARDS

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0715.23	Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare: a. Metric system. b. mathematical (averages, ratios, fractions, percentages, addition, subtraction, multiplication, division). c. Conversions (height, weight/mass, length, volume, temperature, household measurements).	
0715.24	Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.	
0715.25	Demonstrate use of the 24-hour clock/military time.	
0715.26	Classify the basic structural and functional organization of the human body (tissue, organ and system).	
0715.27	Recognize body planes, directional terms, quadrants, and cavities.	
0715.28	Analyze the basic structure and function of the human body.	
0715.29	Describe common diseases and disorders of each body system (prevention, pathology, diagnosis, and treatment).	
0715.30	Recognize emerging diseases and disorders.	
0715.31	Investigate biomedical therapies as they relate to the prevention, pathology and treatment of disease.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
0715.32	Explain factors influencing the health care delivery system.	
0715.33	Explain the impact of emerging issues such as technology, epidemiology, bioethics and socioeconomics on healthcare delivery systems.	
0715.34	Discuss common methods of payment for healthcare.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0715.35	Identify technical skills required for all career specialties and demonstrate skills and knowledge as appropriate.	

0715.36	Apply procedures for measuring and recording vital signs including normal ranges.	
0715.37	Identify additional technical skills based upon career specialties.	

Course Description: This course focuses on the structure and function of each system in the human body. Additional instructional components include concepts that pertain to the body as a whole, applicable medical terminology and the pathophysiology common to each system. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Basic Structure of the Human Body		Complete
Content Skill Sets		Knowledge/ Performance
0716.01	Differentiate anatomy and physiology.	
0716.02	Examine two subdivisions of anatomy.	
0716.03	Interpret terms referring to location, direction, planes and sections of the body.	
0716.04	Examine metabolism, anabolism, catabolism and homeostasis.	
0716.05	Distinguish the molecular structure and function of DNA and RNA.	
0716.06	Describe acids and bases.	
0716.07	Examine the process of neutralization.	
0716.08	Differentiate ph and the ph scale.	
0716.09	Classify examples of the ph of body fluids.	
0716.10	Establish the significance of ph for body function.	
0716.11	Examine a buffer.	
0716.12	Define and pronounce medical terminology applicable to body structures and functions.	

Cells		Complete
Content Skill Sets		Knowledge/ Performance
0716.13	Examine the structure of a typical cell.	
0716.14	Distinguish the function of each cell structure.	
0716.15	Define mitosis.	
0716.16	Differentiate the five phases of mitosis.	
0716.17	Examine diffusion, osmosis, filtration, active transport, phagocytosis and pinocytosis.	
0716.18	Assess cell specialization.	
0716.19	Establish the meaning of benign, malignant and metastasis.	

Tissues, Organs and Organ Systems

Tissues, Organs and Organ Systems		Complete
Content Skill Sets		Knowledge/ Performance
0716.20	Examine the four main types of tissues, describing their function and location.	
0716.21	Define organ.	
0716.22	Define organ system.	
0716.23	Assess the function of each organ and organ system in the human body.	
0716.24	Distinguish the process by which tissue is repaired.	
0716.25	Determine the vitamins favorable to tissue repair.	

Integumentary System

Integumentary System		Complete
Content Skill Sets		Knowledge/ Performance
0716.26	Define integument.	
0716.27	Examine the function of the skin.	
0716.28	Distinguish epidermis, dermis, and subcutaneous layers including structure, function and location.	
0716.29	Examine the appendages of the skin and their structure, function and location.	
0716.30	Correlate skin functions as a barrier to microorganisms.	
0716.31	Differentiate the following disorders: acne vulgaris, athlete's feet, dermatitis, eczema, impetigo, psoriasis, ring worm, urticaria, furuncles, carbuncles, shingles, herpes, skin cancer and burns.	
0716.32	Determine common types of skin lesions in relationship to their characteristics and size including an example of each.	

Skeletal System

Skeletal System		Complete
Content Skill Sets		Knowledge/ Performance
0716.33	Determine the functions of the skeletal system.	
0716.34	Describe how bones are classified.	
0716.35	Distinguish types of joint movement.	
0716.36	Examine the process by which bone is formed.	
0716.37	Label the parts of the long bone, describing structure and function.	
0716.38	Examine how bones grow.	
0716.39	Distinguish bones of the skeleton by name and location.	
0716.40	Examine four types of fractures.	
0716.41	Differentiate open reduction, closed reduction and traction.	
0716.42	Recognize common bone and joint disorders.	

Muscular System		Complete
Content Skill Sets		Knowledge/ Performance
0716.43	Interpret the function of muscle.	
0716.44	Name, describe, and locate each type of muscle.	
0716.45	Differentiate contractility, extensibility, elasticity and excitability as they relate to muscular function.	
0716.46	Establish how muscles work in pairs.	
0716.47	Relate the attachment of the origin and insertion of a muscle.	
0716.48	Distinguish the terms antagonist, flexor, extensor, levator, depressor and dilator.	
0716.49	Examine energy and heat in relationship to the work of muscles.	
0716.50	Assess muscle fatigue and tone.	
0716.51	Name, locate and describe the function of the main skeletal muscles.	
0716.52	Examine the effect of sports training on muscles.	
0716.53	Compare common muscular disorders.	

Circulatory System		Complete
Content Skill Sets		Knowledge/ Performance
0716.54	Determine the function of the circulatory system.	
0716.55	Examine and locate the components of the circulatory system.	
0716.56	Recognize substances that are added and removed from the blood during circulation through body organs.	
0716.57	Examine the structure and function of the heart.	
0716.58	Demonstrate the blood pathway through cardiopulmonary circulation.	
0716.59	Determine the conductive pathway of an electrical impulse as the heart contracts.	
0716.60	Examine disorders of the heart.	
0716.61	Differentiate the specialized circulatory systems.	
0716.62	Trace the blood in fetal circulation.	
0716.63	Compare and contrast the types of blood vessels.	
0716.64	Recognize the principal arteries and veins of the body.	
0716.65	Establish the process by which blood flows through the arteries and veins.	
0716.66	Distinguish systolic and diastolic blood pressure.	
0716.67	Examine disorders of the blood vessels.	

Blood		Complete
Content Skill Sets		Knowledge/ Performance
0716.68	Examine the structure and function of blood.	

0716.69	Examine the function of blood components.	
0716.70	Recognize the three types of blood cells.	
0716.71	Identify hemoglobin, erythropoiesis, hemolysis and coagulation.	
0716.72	Describe the inflammatory process.	
0716.73	Differentiate the four types of blood.	
0716.74	Assess the significance of the Rh antigen.	
0716.75	Examine disorders of the blood.	

Lymphatic System and Immunity		Complete
Content Skill Sets		Knowledge/ Performance
0716.76	Examine the lymphatic system, characterizing each component.	
0716.77	Distinguish lymph nodes.	
0716.78	Differentiate the role of the tonsils, spleen and thymus gland.	
0716.79	Compare types of immunity.	
0716.80	Define immunization, antigen, immunoglobulin and autoimmunity.	
0716.81	Examine the process of hypersensitivity/allergy development.	
0716.82	Determine the meaning, signs and treatment of anaphylaxis.	
0716.83	Distinguish the symptoms of AIDS.	
0716.84	Examine AIDS transmission and prevention.	
0716.85	Describe Standard Precautions.	

Respiratory System		Complete
Content Skill Sets		Knowledge/ Performance
0716.86	Examine the structure of the respiratory system.	
0716.87	Recognize the function of the respiratory system.	
0716.88	Identify the mediastinum.	
0716.89	Describe the breathing process.	
0716.90	Examine the role of the nervous system and chemical factors necessary for the control of breathing.	
0716.91	Differentiate four types of lung capacity volumes.	
0716.92	Distinguish types of respirations (i.e. Apnea, dyspnea, eupnea, hyperpnea, orthopnea and tachypnea).	
0716.93	Characterize infectious and noninfectious disorders of the respiratory system.	

Digestive System		Complete
Content Skill Sets		Knowledge/ Performance

0716.94	Examine the structure and function of the digestive system including accessory organs.	
0716.95	Trace the digestive process through the alimentary canal.	
0716.96	Compare mechanical and chemical digestion.	
0716.97	Determine the action of enzymes on carbohydrates, fats and protein.	
0716.98	Recognize common disorders of the digestive system.	

Urinary System		Complete
Content Skill Sets		Knowledge/ Performance
0716.99	Examine structure and function of the urinary system.	
0716.100	Describe formation of urine by the nephron.	
0716.101	Differentiate chemical and nervous system control of urine secretion.	
0716.102	Recognize common disorders of the urinary system.	

Endocrine System		Complete
Content Skill Sets		Knowledge/ Performance
0716.103	Examine glands of the endocrine system including the hormone secreted by each and their locations.	
0716.104	Determine the negative feedback system in controlling the secretion of hormones.	
0716.105	Recognize prostaglandins.	
0716.106	Determine the causative factors for endocrine gland disorders.	
0716.107	Recognize common disorders of the endocrine system.	

Nervous System		Complete
Content Skill Sets		Knowledge/ Performance
0716.108	Examine the structure and function of the nervous system.	
0716.109	Assess main divisions of the nervous system.	
0716.110	Determine the function of the neuron.	
0716.111	Distinguish the parts of the neuron.	
0716.112	Examine the brain, describing the location and function of each area.	
0716.113	Examine the spinal cord, describing parts and function.	
0716.114	Identify cerebrospinal fluid and explain its circulation.	
0716.115	Assess disorders of the brain and spinal cord.	
0716.116	Distinguish characteristics and function of a mixed nerve.	
0716.117	Distinguish the function of the cranial and spinal nerves.	
0716.118	Examine the function of the sympathetic and parasympathetic nervous system.	

0716.119	Examine the simple reflex arc.	
0716.120	Recognize disorders of the central nervous system and peripheral nervous system.	

Sensory Organs		Complete
Content Skill Sets		Knowledge/ Performance
0716.121	Examine the structure and function of sensory organs.	
0716.122	Determine parts of the eye and describe their function.	
0716.123	Trace a pathway of light from outside to the brain.	
0716.124	Determine parts of the ear and describe their function.	
0716.125	Trace the pathway of sound from outside the ear to the brain.	
0716.126	Evaluate disorders of the eye, ear and nose.	
0716.127	Examine the process associated with the sense of smell.	

Reproductive System		Complete
Content Skill Sets		Knowledge/ Performance
0716.128	Examine the structure and function of the male and female reproductive systems.	
0716.129	Determine the process of meiosis.	
0716.130	Describe the process of fertilization.	
0716.131	Distinguish stages of fetal development including characteristics of the zygote, embryo and fetus.	
0716.132	Differentiate infertility, artificial insemination and in-vitro fertilization.	
0716.133	Identify the stages of the menstrual cycle.	
0716.134	Discuss menopause.	
0716.135	Recognize common disorders of the male and female reproductive systems.	

Genetics		Complete
Content Skill Sets		Knowledge/ Performance
0716.136	Examine genetics, mutation and genetically linked disorders.	
0716.137	Identify two main types of mutation.	
0716.138	Characterize genetic counseling and engineering.	

Course Description: Upon successful completion of this course, students will master competencies consistent in the areas of ECG Technician and Phlebotomist. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Health Care Delivery System		Complete
Content Skill Sets		Knowledge/ Performance
0720.01	Examine departments found within hospitals and healthcare facilities including the function of each.	
0720.02	Determine healthcare providers working within hospitals, clinics and physician's offices.	
0720.03	Characterize the organizational structure of a hospital.	
0720.04	Examine the role of the clinical laboratory and the electrocardiography departments.	
0720.05	Relate the phlebotomist's role in clinical laboratory medicine.	
0720.06	Differentiate the roles and qualifications of clinical laboratory personnel.	
0720.07	Recognize the ECG technician's qualifications and role in the clinical facility.	
0720.08	Examine professionalism as it relates to the phlebotomist and ECG technician.	

Laboratory and EKG Departments in a Health Care System		Complete
Content Skill Sets		Knowledge/ Performance
0720.09	Examine the types of laboratory procedures performed in the Clinical Laboratory and ECG Departments.	
0720.10	Determine how laboratory testing and cardiography is used to assess bodily functions and disease.	
0720.11	Interpret medical terms and abbreviations commonly used in the laboratory and cardiography departments.	

Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
0720.12	Determine the meaning of negligence, malpractice, assault, battery, liability and Respondent Superior.	
0720.13	Examine legal responsibilities and actions given sample scenarios.	
0720.14	Interpret the scope of practice of the phlebotomist and ECG technician.	
0720.15	Recognize common ethical standards within the healthcare profession.	
0720.16	Interpret patient confidentiality, recognizing common threats to confidentiality.	
0720.17	Examine the Patients' Bill of Rights as it applies to clinical laboratory personnel and the ECG technician.	

		Complete
Content Skill Sets		Knowledge/ Performance
0720.18	Determine policies and procedures for maintaining safety in the laboratory and during ECG procedures.	
0720.19	Examine the modes of transmission of microorganisms.	
0720.20	Compare methods for controlling the growth and spread of microorganisms.	
0720.21	Apply infection control and safety procedures based on the Occupational Safety and Health Administration (OSHA) and the Centers for Disease Control (CDC) (i.e. Standard Precautions).	
0720.22	Apply proper use of personal protective equipment (PPE).	
0720.23	Examine nosocomial infections.	
0720.24	Determine the electrical, radiation, biological hazards and fire safety procedures used in the hospital including the clinical laboratory.	
0720.25	Illustrate the hazard symbols for radiation, biohazard, toxic or poison, carcinogen, corrosive, flammable and NFPA chemical hazard.	
0720.26	Recognize and label biohazard specimens.	
0720.27	Determine the safety measures followed by a phlebotomist when collecting or transporting a specimen.	
0720.28	Differentiate the following conditions listing first aid for each: petechiae, hematoma, infection, syncope, emesis, osteomyelitis and sepsis.	

Communication		Complete
Content Skill Sets		Knowledge/ Performance
0720.29	Demonstrate the proper method for greeting and interacting with a patient.	
0720.30	Distinguish important components of an interview of a patient or a patient's representative in preparation for obtaining specimens.	
0720.31	Examine instructions to be given to patients in preparation for routine blood collection, glucose testing, bleeding times and other procedures normally performed by the phlebotomist.	
0720.32	Examine instructions to be given to patients in preparation for electrocardiography procedures.	
0720.33	Relate techniques for dealing with family and visitors during the collection of specimens and electrocardiography procedures.	
0720.34	Assess the importance of appearance and grooming for phlebotomists and ECG technicians.	
0720.35	Articulate telephone use within the context of extra-laboratory communication.	
0720.36	Relate rules of telephone etiquette appropriate for the clinical setting.	
0720.37	Recognize the role of the computer within the laboratory and ECG department.	

Quality Assurance in Laboratory Testing		Complete
Content Skill Sets		Knowledge/ Performance
0720.38	Determine policies and procedures used in the clinical laboratory to assure quality in obtaining of blood specimens.	
0720.39	Examine the system for monitoring quality assurance in the collection and transportation of laboratory specimens.	

Specimen Transport and Processing

Complete

Content Skill Sets		Knowledge/ Performance
0720.40	Determine the laboratory criteria for identifying an appropriate request for specimen collection.	
0720.41	Relate legal responsibilities of the laboratory and phlebotomist for the need of the physicians' request for all specimen collecting and testing.	
0720.42	Implement methods for transporting and processing blood specimens for routine and special testing.	
0720.43	Distinguish methods for processing and transporting specimens for testing at reference laboratories.	
0720.44	Recognize the potential clerical and technical errors that may occur during specimen processing.	
0720.45	Relate the general effects of time on test quality and patient care regarding processing and transporting of specimens.	
0720.46	Determine the conditions that must be met if blood specimens and laboratory tests are to be used as legal evidence.	
0720.47	Relate criteria for a normal ECG.	
0720.48	Determine lethal arrhythmias.	

Collection Equipment and Precautions

Complete

Content Skill Sets		Knowledge/ Performance
0720.49	Determine the additives used in blood collection and rationale for their use.	
0720.50	Differentiate the evacuated tube color codes associated with the additives.	
0720.51	Demonstrate the types of equipment needed to collect blood by venipuncture, capillary and arterial punctures.	
0720.52	Choose supplies carried on a phlebotomist's tray.	
0720.53	Relate special precautions necessary during blood collections.	
0720.54	Distinguish substances that can interfere in clinical analysis of blood constituents.	
0720.55	Differentiate the mode of action for each anticoagulant.	
0720.56	Examine the meaning of the following terms, listing possible causes of each: Demolished Sample, Short Draw, Clotting in Whole Blood Tubes, Lipemic and Icteric.	
0720.57	Determine the effects of the tourniquet, hand squeezing and heating pads on capillary and venipuncture.	
0720.58	Recognize a winged infusion set.	
0720.59	Relate situations appropriate for the use of a winged infusion needle.	
0720.60	Recognize a syringe, explaining when this technique would be used.	

Specimen Collection Procedures

Complete

Content Skill Sets		Knowledge/ Performance
0720.61	Examine "chain of custody" as it relates to blood specimens collected to rule out illegal drug use.	

0720.62	Determine the meaning of the following terms: TDM, Peak Levels, Trough Levels, Random Sampling, Toxic Levels, Intramuscular and Intravascular.	
0720.63	Determine steps used in specimen collection techniques for glucose testing: two hour, random, fasting and glucose tolerance testing.	
0720.64	Correctly time and label specimen.	
0720.65	Determine steps in the procedure for blood alcohol specimen collection.	
0720.66	Relate the phlebotomist's role in the collection of urine specimens for routine urinalysis, culture and sensitivity and timed specimens.	
0720.67	Perform a multi-draw venipuncture.	
0720.68	Demonstrate the approach steps in a skin puncture procedure.	
0720.69	Demonstrate identification of the patient.	
0720.70	Perform the steps in a skin puncture procedure.	
0720.71	Perform the steps in a venipuncture.	
0720.72	Demonstrate the collecting, labeling, and transporting specimens for the following analyses: cold agglutinins, type, antibody screen, cross match and blood cultures.	

Circulatory System

Circulatory System		Complete
Content Skill Sets		Knowledge/ Performance
0720.73	Examine the structures of the heart.	
0720.74	Distinguish the four chambers of the heart.	
0720.75	Distinguish the name, location and function of the heart valves.	
0720.76	Illustrate the flow of blood through the heart, labeling each structure.	
0720.77	Relate the pumping action of the heart known as the Cardiac Cycle.	
0720.78	Distinguish four properties of the cardiac cells.	
0720.79	Distinguish between systemic and pulmonary circulation.	
0720.80	Relate the sequence of the electrical impulse of the conduction system.	
0720.81	Examine structures of the conduction system including labeling each on a drawing.	
0720.82	Examine blood and blood components.	
0720.83	Label major blood vessels on a drawing.	

Basic Electrophysiology

Basic Electrophysiology		Complete
Content Skill Sets		Knowledge/ Performance
0720.84	Relate the electrical conduction pathway of the heart.	
0720.85	Examine the correlation between structures in the conduction pathway and the cardiac cycle.	

0720.86	Differentiate the waveforms and segments of the heartbeat as demonstrated on the ECG.	
0720.87	Recognize causes of dysrhythmias.	
0720.88	Relate the meaning of isoelectric line.	

Electrocardiography		Complete
Content Skill Sets		Knowledge/ Performance
0720.89	Articulate the difference between electrocardiogram and electrocardiograph.	
0720.90	Determine the reasons for performing an ECG.	
0720.91	Examine the universal marking codes for a manual 12 lead ECG and the auto 12 lead.	
0720.92	Diagram the limb, augmented and chest leads of an ECG.	
0720.93	Recognize and correct problems associated in the performance of an ECG tracing.	
0720.94	Determine the placement of ECG electrodes on the body.	

Electrocardiography Machine and Paper		Complete
Content Skill Sets		Knowledge/ Performance
0720.95	Articulate the difference between electrocardiogram and electrocardiograph.	
0720.96	Determine the reasons for performing an ECG.	
0720.97	Examine the universal marking codes for a manual 12 lead ECG and the auto 12 lead.	
0720.98	Diagram the limb, augmented and chest leads of an ECG.	
0720.99	Recognize and correct problems associated in the performance of an ECG tracing.	
0720.100	Determine the placement of ECG electrodes on the body.	

Leads		Complete
Content Skill Sets		Knowledge/ Performance
0720.101	Articulate the 12 leads in a tracing.	
0720.102	Relate the difference between unipolar and bipolar.	
0720.103	Determine the color of the limb and chest leads for a standard 12 lead ECG.	
0720.104	Examine the principle of Einthoven's triangle and diagram the three leads used.	
0720.105	Articulate the augmented limb leads and diagram them on a chart.	
0720.106	Relate the precordial or chest leads in order, explaining what they measure.	
0720.107	Articulate the frontal and horizontal leads of an ECG.	

Electrocardiograph Techniques		Complete
Content Skill Sets		Knowledge/ Performance
0720.108	Articulate the universal standard of ECG measurement.	
0720.109	Identify the patient using proper procedure.	
0720.110	Identify yourself and explain procedure to the patient.	
0720.111	Document patient's medication history and vital signs.	
0720.112	Determine relaxation methods to make the patient comfortable.	
0720.113	Place the patient into the proper recording position.	
0720.114	Prepare the patient's skin before placement of leads.	
0720.115	Place sensors in proper positions on the patient.	
0720.116	Connect the cable wires to sensors in proper sequence.	
0720.117	Acquire ECG tracing using universal standards.	
0720.118	Recognize and correct artifacts on the ECG tracing.	
0720.119	Correct standardization of voltage.	
0720.120	Determine how to identify the tracing after completion.	
0720.121	Document any variation from a normal tracing or any information useful to the interpreting physician.	
0720.122	Document any physical or extrinsic situation that could alter ECG vector or standard lead placement.	
0720.123	Verify information on ECG tracing.	

Quality Assurance in the Performance of ECG		Complete
Content Skill Sets		Knowledge/ Performance
0720.124	Relate criteria for a normal ECG.	
0720.125	Determine lethal arrhythmias.	
0720.126	Report lethal arrhythmias immediately to a nurse or physician.	
0720.127	Characterize the guide used in interpreting an ECG strip.	
0720.128	Calculate the rate of the patient's heartbeat on an ECG tracing.	
0720.129	Demonstrate utilization of the components of rhythm strip analysis.	
0720.130	Interpret terms associated with the interpretation of an ECG (i.e. Normal sinus rhythm, sinus arrhythmia, sinus arrest, bradycardia and tachycardia).	

Course Description: The Introduction to Pet Grooming, Boarding and Obedience course is an introductory course to the Pet Grooming concentration designed for students to gain basic understanding of the each of these three segments of the pet industry. The performance skill sets will focus on students performing basic bathing and drying of dogs and cats.

Origin of Animal Species		Complete
Content Skill Sets		Knowledge/ Performance
0170.01	Investigate the history and development of domestic pets.	
0170.02	Identify common and scientific names of pet species.	
0170.03	Identify the parts of the external anatomy of pet species.	
0170.04	Group pet breeds according to similarities.	
0170.05	Identify breeds of pet species.	
0170.06	Practice and use terminology associated with pet species.	

Pet Care and Handling		Complete
Content Skill Sets		Knowledge/ Performance
0170.07	Establish proper handling facilities.	
0170.08	Maintain facilities and equipment to house animals safely.	
0170.09	Perform a basic exam on a live animal.	
0170.10	Practice monitoring vital signs of pet animals	
0170.11	Perform CPR, wound care, and other emergency medical procedures.	
0170.12	Restrain pet animals properly and safely.	
0170.13	Restrain animals correctly for bite/scratch prevention.	
0170.14	Record pet vaccination records at time of check in.	
0170.15	Handle and treat older pets appropriately.	

Animal Rights and Welfare		Complete
Content Skill Sets		Knowledge/ Performance
0170.16	Define and describe the difference between rights and welfare.	
0170.17	Debate the issues associated with animal welfare and animal rights.	
0170.18	Research current pet industries and their impact on current animal practices.	

Animal Behavior		Complete
Content Skill Sets		Knowledge/ Performance
0170.19	Evaluate the body language of pet animals and their indicators.	
0170.20	Training animals for various purposes.	
0170.21	Accustoming animals to human voice and contact.	
0170.22	Feed and water animals, and clean and disinfect pens, cages, yards, and hutches.	
0170.23	Cue or signal animals during performances.	
0170.24	Evaluate animals to determine their temperaments, abilities, or aptitude for training.	
0170.25	Feed or exercise animals or provide other general care, such as cleaning or maintaining holding or performance areas.	
0170.26	Talk to or interact with animals to familiarize them to human voices or contact.	
0170.27	Conduct training programs in order to develop and maintain desired animal behaviors for competition, entertainment, obedience, security, riding and related areas.	

Pet Grooming		Complete
Content Skill Sets		Knowledge/ Performance
0170.28	Use bathing tub correctly.	
0170.29	Restrain animals properly while bathing.	
0170.30	Use proper water temperature and pressure while bathing animals.	
0170.31	Select shampoos and conditioners according to needs of animal.	
0170.32	Dry animals by hand.	
0170.33	Dry animals with cage dryers.	
0170.34	Use proper technique to dry according to coat type.	

Course Description: The Pet Grooming and Understanding Personalities course is a core course in the Pet Grooming concentration designed for students to gain a deeper understanding of the pet grooming laboratory and the anatomy of canines and felines as well and the health, nutrition, reproduction and behavior of these animals. Students will perform more advanced grooming techniques on animals.

Grooming Equipment Maintenance and Use		Complete
Content Skill Sets		Knowledge/ Performance
0171.01	Use grooming equipment properly.	
0171.02	Do facility laundry and clean, organize, maintain, and disinfect animal quarters, such as pens, crates, and equipment.	
0171.03	Clean, disinfect and repair cages, pens, crates.	
0171.04	Answer telephones and schedule appointments.	
0171.05	Discuss with clients their pets' grooming needs.	
0171.06	Order, unload, and store equipment and supplies.	
0171.07	Respond to questions from patrons, and provide information about animals, such as behavior or facility activities.	

Canine Internal Anatomy		Complete
Content Skill Sets		Knowledge/ Performance
0171.08	Identify internal organs and anatomy of the dog.	
0171.09	Identify functions of organs of the body.	
0171.10	Observe coat types of different breeds.	
0171.11	Recognize skin conditions and treatments.	
0171.12	Clean ears properly.	
0171.13	Identify the anatomy of the external and inner ear.	
0171.14	Identify the anatomy of the nail.	
0171.15	Properly clip, file, and Dremel nails.	
0171.16	Identify parts of the mouth and teeth.	
0171.17	Recognize diseases of the mouth and gum disease.	
0171.18	Brush teeth and check for gum disease.	
0171.19	Identify the parts and function of the anal glands.	

Feline Internal Anatomy		Complete
Content Skill Sets		Knowledge/ Performance
0171.20	Identify internal organs.	
0171.21	Identify functions of organs of the body.	
0171.22	Recognize diseases of the skin and their treatments.	
0171.23	Properly clip and file nails.	
0171.24	Recognize diseases of the mouth and gum disease.	

Canine and Feline Disease		Complete
Content Skill Sets		Knowledge/ Performance
0171.25	Identify common diseases of pets and their symptoms and treatments.	
0171.26	Identify zoonotic diseases and their symptoms.	
0171.27	Examine animals to detect illness, injury, or disease, and to check physical characteristics.	
0171.28	Keep records documenting animal health, diet, or behavior.	
0171.29	Examine pet animals for internal and external parasites.	
0171.30	Identify treatment and procedures to control parasites.	
0171.31	Maintain proper laboratory sanitation to control disease.	

Animal Reproduction		Complete
Content Skill Sets		Knowledge/ Performance
0171.32	Select animals to be bred, according to knowledge of animals, genealogies, traits, and desired offspring characteristics.	
0171.33	Describe the estrus cycle in domestic pet animals	
0171.34	Understand the reproductive physiology of the canine and feline.	

Animal Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
0171.35	Identify nutrients required for a balanced diet	
0171.36	Order food for animals and arrange for its delivery.	
0171.37	Identify parts and functions of the digestive system.	
0171.38	Analyze food labels for nutritional value.	
0171.39	Maintain growth, feeding, production, and cost records.	
0171.40	Calculate percentage of protein in diet for a particular stage of growth.	

0171.41	Feed and water animals according to schedules and feeding instructions.	
---------	---	--

Course Description: This specialization course is for students who seek business and management techniques that will enable them to become successful in owning and operating a business in the pet grooming, obedience and boarding industries. Topics covered include business organizational structures, legal and financial aspects of entrepreneurship, and marketing. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts and develop a business plan.

Employment Skills		Complete
Content Skill Sets		Knowledge/ Performance
0173.01	Complete an entrepreneurship self-assessment.	
0173.02	Complete strengths-finder assessment.	
0173.03	Set SMART goals for personal, school, career, and business.	
0173.04	Maintain a personal calendar.	
0173.05	Document daily records of time use and activities.	
0173.06	Create a personal resume.	
0173.07	Research different types of business organizations.	
0173.08	Create a personal budget.	
0173.09	Create business summary and company description components of business plan.	
0173.10	Develop a marketing plan for a groomer or kennel operator.	
0173.11	Identify ways to advertise for a groomer or kennel operator.	

Business Finance		Complete
Content Skill Sets		Knowledge/ Performance
0173.12	Complete an asset inventory (land, buildings, equipment, etc.) and business agreements to determine what is needed to operate a business.	
0173.13	Complete a net worth statement.	
0173.14	Complete a cash flow statement.	
0173.15	Create a business budget including fixed and variable costs and create an enterprise budget.	
0173.16	Utilize computer software to enter expense and income of a business.	
0173.17	Maintain a simulated checking account ledger	
0173.18	Complete a break-even analysis of a product.	
0173.19	Research different sources of financing and grants.	
0173.20	Complete a loan application with supporting documentation.	
0173.21	Calculate interest on a personal car loan and a mortgage.	
0173.22	Create financial projections and business funding components of a business plan.	

Marketing		Complete
Content Skill Sets		Knowledge/ Performance
0173.23	Develop pricing strategies for products and services.	
0173.24	Plan the delivery and distribution of products and services to customers.	
0173.25	Research potential markets and competition for various products and services.	
0173.26	Create and conduct customer survey for products and services.	
0173.27	Develop advertising and promotion strategies for products and services.	
0173.28	Develop a support network to assist with promotion and delivery of products and services to the customer.	
0173.29	Conduct a phone conversation with a customer.	
0173.30	Send an e-mail to a business inquiring about products and services.	
0173.31	Participate in a face-to-face business meeting using role play.	
0173.32	Create market analysis, sales strategies, and service or product line components of a business plan.	
0173.33	Create an advertising campaign to promote business in grooming or kennel operation.	

Business Law**Complete****Content Skill Sets****Knowledge/
Performance**

0173.34	Communicate with local and state government officials concerning business law and issues.	
0173.35	Complete a simulated business license application.	
0173.36	Research various business forms, application and permits.	
0173.37	Research various state and federal tax and business websites.	
0173.38	Complete a simulated tax return with supporting documents.	
0173.39	Interview an insurance agent about business and liability insurance.	
0173.40	Research staffing and labor requirements of a business.	
0173.41	Research various business policy and procedures manuals.	
0173.42	Conduct simulated job interview as potential candidate.	
0173.43	Conduct simulated job interview as an employer.	
0173.44	Role play various ethical dilemmas faced by business owners.	
0173.45	Create organization and management structure components of a business plan.	
0173.46	Present completed business plan to a panel of student and industry representatives.	
0173.47	Research West Virginia Law in relation to working with, grooming, and kenneling animals.	
0173.48	Financial record keeping.	
0173.49	Keep financial records such as net worth statements, inventories, financial statements, income and expense logs, and other pertinent records.	
0173.50	Create and maintain an SAE portfolio to include financial records, resume, sample student work, and documenting pictures.	
0173.51	Create a payroll system for a grooming or kennel operation.	
0173.52	Develop an advertising plan.	
0173.53	Research the need for liability insurance for a business.	
0173.54	Understand the importance of professional advice from legal, accounting, and veterinary professionals.	
0173.55	Estimate monthly expenses for utilities, phone, repairs/maintenance, and supplies.	

Course Description: This is the foundational course in the Forest Industry Program of Study. Learners will be exposed to a broad range of forestry topics including dendrology, wildlife, forest fire, and basic forest measurements. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Foundations of Forestry

Knowledge Indicator(s)	Skill Set Met
0182.1 history of local, state, and federal forestry.	
0182.2 forest ownership.	
0182.3 forest regions.	
0182.4 role of government in Forestry.	
0182.5 careers in Forestry.	
Measurement Indicators	Skill Set Met
0182.6 research history of forestry in their local community and state.	
0182.7 create a map of the major forest regions and biomes in North America.	
0182.8 interview a Forester who manages a National Forest to determine major management practices.	
0182.9 research a career in the Forest industry.	

Dendrology and Morphology

Knowledge Indicator(s)	Skill Set Met
0182.10 stages of tree growth.	
0182.11 internal and external parts of a tree.	
0182.12 basic dendrology.	
0182.13 tree taxonomy.	
0182.14 identification features of trees.	
Measurement Indicators	Skill Set Met
0182.15 diagram the major internal and external parts of a tree.	
0182.16 take a core sample from a tree and analyze the growth rings and internal parts.	
0182.17 identify trees based on leaf characteristics.	
0182.18 determine common name of common tree species.	
0182.19 observe a stand of trees and identify various stages of tree growth.	

Wildlife and the Forest

Knowledge Indicator(s)	Skill Set Met
0182.20 interaction of wildlife and the forest.	
0182.21 animal classification.	
0182.22 animal adaptations.	
0182.23 common forest wildlife species.	
0182.24 wildlife and forest ecosystems.	
0182.25 food chains and webs.	
0182.26 biodiversity.	
0182.27 hunting and trapping regulations.	
Measurement Indicators	Skill Set Met
0182.28 research wildlife species and give oral presentation to class.	
0182.29 draw forest food chains and food webs.	
0182.30 research invasive forest pests and determine impact on biodiversity.	
0182.31 interview a wildlife biologist or DNR officer to determine major wildlife management practices.	

Forest Fire

Knowledge Indicator(s)	Skill Set Met
0182.32 the fire triangle.	
0182.33 fire as a management tool in Forestry.	
0182.34 causes of forest fires.	
0182.35 wild fires.	
0182.36 forest fire prevention and suppression.	
0182.37 tools used for forest fire prevention and suppression.	
Measurement Indicators	Skill Set Met
0182.38 identify tools used for forest fire prevention and suppression.	
0182.39 interview a forest firefighter to determine major responsibilities.	

Basic Forestry Measurements

Knowledge Indicator(s)	Skill Set Met
0182.40 basic tools used in Forest Management.	
0182.41 dendrometers and hypsometers.	
0182.42 basic surveying.	
0182.43 orientation.	
0182.44 pacing.	
Measurement Indicators	Skill Set Met
0182.45 use an azimuth or quadrant compass to determine bearing.	

0182.46	calculate distances by pacing.	
0182.47	use various dendrometers to measure tree diameter.	
0182.48	use various hypsometers to measure tree height.	

Course Description: This course is designed to be a basic forestry course for students interested in forestry. The course will cover topics on best management practices, timber felling basics, dendrology, tree measurement basics, water quality, forest fire, read topography maps and basic log road layout, forest hazards ID, basic forestry concepts of edge, diversity, succession and structure, forest business and economics, forest insects, forest disease, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Basic Forestry Concepts		Complete
Content Skill Sets		Knowledge/ Performance
0183.01	Tree growth.	
0183.02	Dendrology.	
0183.03	Measuring standing timber.	
0183.04	Tree and forest measurement tools.	
0183.05	Select trees to be cut down, assessing factors such as site, terrain, and weather conditions before beginning work.	
0183.06	Measure felled logs or loads of pulpwood to calculate volume, weight, dimensions, and marketable value, using measuring devices and conversion tables.	
0183.07	Select and mark trees for thinning or logging and draw detailed plans that include access roads.	
0183.08	Thin and space trees and control weeds and undergrowth, using manual tools and chemical, or supervise workers performing these tasks.	
0183.09	Provide forestry education and general information, advice, and recommendations to woodlot owners, community organization, and the general public.	
0183.10	Perform reforestation, or forest renewal, including nursery and silviculture operations, site preparation, seeding and tree planting programs, cone collection, and tree improvement.	
0183.11	Inspect trees and collect samples of plants, seeds, foliage, bark and roots to locate insect and disease damage.	

Operating a Chainsaw		Complete
Content Skill Sets		Knowledge/ Performance
0183.12	Proper personal protective clothing to wear when operating a chainsaw.	
0183.13	Basic techniques used to fell standing trees.	
0183.14	Parts of a chainsaw.	
0183.15	Chainsaw repair and maintenance.	
0183.16	Maintain and repair chainsaws and other equipment, clean, oil, and grease equipment, and sharpen properly.	

Best Management Practices

Complete

Content Skill Sets

**Knowledge/
Performance**

0183.17	Students will demonstrate knowledge of best management practices used in forest industry.	
0183.18	Survey, measure, and map access roads and forest areas such as burns, cut-over areas, experimental plots, and timber sales sections.	
0183.19	Provide information about regulations such as those concerning environmental protection, resource utilization, fire safety and accident prevention.	

Course Description: This course is an advanced course in the Forest Industry Program of Study. The course will allow students to cover the topics of timber management, measurement and evaluation and logging practices in depth utilizing problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Timber Evaluation, Measurement and Management		Complete
Content Skill Sets		Knowledge/ Performance
0184.01	Measuring standing timber and logs.	
0184.02	Measurement tools.	
0184.03	Evaluate log characteristics and determine grades, using established criteria.	
0184.04	Appraise trees for certain characteristics, such as twist, rot, and heavy limb growth, and gauge amount and direction of lean, to determine how to control the direction of a tree's fall with the least damage.	
0184.05	Record data about individual trees or load volumes into tally books or hand-held collection terminals.	
0184.06	Paint identification marks of specified colors on logs to identify grades or species, using spray cans, or call out grades to log markers.	
0184.07	Assess logs after cutting to ensure that the quality and length are correct.	
0184.08	Measure log lengths and mark boles for bucking into logs, according to specifications.	
0184.09	Tag unsafe trees with high-visibility ribbons.	
0184.10	Identify logs of sub or special grade so that they can be returned to shippers, regarded, recut, or transferred for other processing.	
0184.11	Jab logs with metal ends of scale sticks and inspect logs to ascertain characteristics or defects such as water damage, splits, knots, broken ends, rotten areas, twists, and curves.	
0184.12	Mark logs for identification.	

Chainsaw and Logging Equipment Use and Safety		Complete
Content Skill Sets		Knowledge/ Performance
0184.13	Proper personal protective clothing to wear when operating a chainsaw.	
0184.14	Use of a chainsaw and other logging equipment.	
0184.15	Stop saw engines, pull cutting bars from cuts, and run to safety as tree falls.	
0184.16	Saw back-cuts, leaving sufficient sound wood to control direction of fall.	
0184.17	Clear brush from work areas and escape routes and cut sapling and other trees from direction of falls, using axes, chainsaws, or bulldozers.	
0184.18	Measure felled trees and cut them into specified log lengths, using chain saws and axes.	
0184.19	Determine position, direction, and depth of cuts to be made, and placement of wedges or jacks.	

0184.20	Control the direction of a tree's fall by scoring cutting lines with axes, sawing undercuts along scored lines with chainsaws, knocking slabs from cuts with single-bit axes, and driving wedges.	
0184.21	Trim off the tops and limbs of trees, using chainsaws, delimiters, or axes.	
0184.22	Insert jacks or drive wedges behind saws to prevent binding of saws and to start trees falling.	
0184.23	Saw felled trees into lengths.	
0184.24	Split logs, using axes, wedges, and mauls, and stack wood in ricks or cord lots.	

Course Description: This course is an advanced course in the Forest Industry Program of Study. The course will cover topics on woodlot management, forest disease and pests, and forest land management. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Woodlot Management	
Knowledge Indicator(s)	Skill Set Met
0185.1 forest site characteristics.	
0185.2 factors affecting tree growth.	
0185.3 growth and development of forests.	
0185.4 tree tolerance.	
0185.5 stages of succession.	
0185.6 crop tree selection.	
0185.7 logging site best management practices.	
Measurement Indicators	Skill Set Met
0185.8 use soil survey data to determine site index of specific forest site.	
0185.9 analyze aspect and soil properties to determine tree growth patterns.	
0185.10 analyze and identify successional stages of a forest.	
0185.11 identify shade tolerant and intolerant tree species.	
0185.12 determine proper harvesting method for woodlots based on landowner's goals.	
0185.13 design skid roads in compliance with WV best management practices.	
0185.14 reseed skid trails and log landings.	
0185.15 research maintenance procedures for drainage systems in controlling soil erosion.	

Tree Diseases and Pests	
Knowledge Indicator(s)	Skill Set Met
0185.16 common forest insect pests.	
0185.17 common forest diseases.	
0185.18 common invasive species in forests.	
Measurement Indicators	Skill Set Met
0185.19 identify damaging forest insects	
0185.20 research methods to prevent and control forest insects.	
0185.21 observe a stand of trees to identify common forest diseases.	
0185.22 research methods to prevent and control forest diseases.	

0185.23	identify common plant and animal invasive species found in forests.	
0185.24	prescribe a select cut, sanitation cut, and or salvage cut on an infected area.	
0185.25	demonstrate the technique of girdling to remove undesirable trees.	

Forest Land Management

Knowledge Indicator(s)		Skill Set Met
0185.26	topographic and aerial maps.	
0185.27	land management at the local, state and federal level.	
0185.28	management of private lands.	
Measurement Indicators		Skill Set Met
0185.29	conduct an environmental assessment for a specific site.	
0185.30	analyze political, biological, economical and sociological impacts on managing ecosystems.	
0185.31	interpret current and historical aerial photography for land cover and land use applications.	
0185.32	conduct a property title search.	
0185.33	measure acreage on maps.	
0185.34	prepare and write a conservation plan for a specific parcel of land.	
0185.35	prepare and write a timber management plan for a specific woodlot.	
0185.36	determine location and other information from maps using Global Positioning Systems (GPS).	
0185.37	measure elevation of a given area using survey equipment.	

Course Description: This specialization course covers topics on advanced wildlife management principles, water quality, fish biology, history of fish and wildlife, habitat management, life history, and wildlife values as a natural resource. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Fish and Wildlife Habitats		Complete
Content Skill Sets		Knowledge/ Performance
0190.01	Major types of fish and wildlife.	
0190.02	Habitat management.	
0190.03	Fish and wildlife laws and regulations.	
0190.04	Study animals in their natural habitats, assess effects of the environment and industry on animals, interpret findings, and recommend alternative operating conditions for the industry.	
0190.05	Inventory or estimate plant and wildlife populations.	
0190.06	Make recommendations on management systems and planning for wildlife populations and habitats, consulting with stakeholders and the public at large to explore options.	
0190.07	Inform and respond to the public regarding wildlife and conservation issues, such as plant identification, hunting ordinances, and nuisance wildlife.	

Animal Behavior and Anatomy		Complete
Content Skill Sets		Knowledge/ Performance
0190.08	Anatomy and physiology of fish and wildlife species.	
0190.09	Riparian zones.	
0190.10	Invasive species.	
0190.11	Organize and conduct experimental studies with live animals in controlled or natural surroundings.	
0190.12	Study characteristics of animals such as origin, interrelationships, classification, life histories and diseases, development, genetics, and distribution.	
0190.13	Analyze characteristics of animals to identify and classify them.	
0190.14	Prepare collections of preserved specimens or microscopic slides for species identification and study of development or disease.	
0190.15	Collect and dissect animal specimens and examine specimens under a microscope.	
0190.16	Raise specimens for study and observation or for use in experiments.	

Watershed and Water Quality		Complete
Content Skill Sets		Knowledge/ Performance
0190.17	Delineate a local watershed boundary.	
0190.18	Test water samples for various chemical parameters.	

Course Description: This specialization course covers topics on soil and water conservation, basic wildlife management, environmental law and regulations, basic forestry, and land management. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Soil Management		Complete
Content Skill Sets		Knowledge/ Performance
0200.01	Analyze soil profiles to determine texture, depth, permeability, internal drainage, soil color and horizons.	
0200.02	Use information to determine land use and limitations.	
0200.03	Calculate the slope of land.	
0200.04	Collect soil samples and conduct experiments to measure pH and amounts of available Nitrogen, Phosphorus and Potassium.	
0200.05	Compare and contrast soil fertility from different locations such as: cropland, forest land, pasture, etc.	
0200.06	Develop a nutrient management plan.	
0200.07	Apply best management practices to specific sites such as agriculture, construction, log landing and oil and gas wells.	
0200.08	Access and use published and on-line soil data to determine land use and limitations.	
0200.09	Determine land capability classes and subclasses of land using soil profile observation and soil survey data.	

Water Management		Complete
Content Skill Sets		Knowledge/ Performance
0200.10	Analyze the hydrologic cycle.	
0200.11	Use topographic maps to delineate the watershed of a given area, identify drainage patterns and identify stream orders.	
0200.12	Conduct chemical water quality tests to determine temperature, turbidity, dissolved oxygen, pH, alkalinity, nitrogen levels of various water samples from a given watershed and determine land use practices in the watershed based on results.	
0200.13	Conduct a biological stream assessment by collecting macro-invertebrates and determine the water quality of the stream based on results.	
0200.14	Analyze a wetland to determine benefits to surrounding area and identify wetland plants and animals.	
0200.15	Explain how Geographic Information Systems (GIS) are being used to help communities assess water quality and watershed health information.	

Forest Management**Complete****Content Skill Sets****Knowledge/
Performance**

0200.16	Understand the basic forestry concepts: succession, forest structure, site, growing space, crown class, site index, tolerance, wildfire, aspect and forest measurements.	
0200.17	Know the factors affecting tree growth.	
0200.18	Research dendrology.	
0200.19	Know the various methods of measuring standing timber.	
0200.20	Riparian buffers.	
0200.21	Wildfires and prescribed burns.	
0200.22	Best management practices in forestry and state BMP regulations.	
0200.23	Evaluate a forest stand for existing factors affecting tree growth (soil moisture and depth, aspect, slope).	
0200.24	Identify common WV tree species using multiple indicators (leaf margin, bark, arrangement, fruit, etc.).	
0200.25	Know and be able to use the following tree and forest measurement tools: Biltmore stick, diameter tape, increment borer, clinometer, topographic map, compass, GPS and soil survey map.	
0200.26	Calculate the amount of board feet in a standing tree using tree measurements and volume tables.	
0200.27	Read a topographical map and lay out a logging road based on topography of a site.	

Wildlife Management**Complete****Content Skill Sets****Knowledge/
Performance**

0200.28	Students will demonstrate knowledge of biodiversity and wildlife management practices.	
0200.29	Conduct a habitat assessment of a given area to determine suitability for specific species of wildlife.	
0200.30	Identify invasive plant and animal species and their impact on the environment.	
0200.31	Identify threatened and endangered species of wildlife and methods to protect their populations.	
0200.32	Identify native plant and animal species and their range, habitat and functions.	

Land Management**Complete****Content Skill Sets****Knowledge/
Performance**

0200.33	Topographic maps, aerial maps, soil survey data and soil test results.	
0200.34	Basic geology.	
0200.35	Basic surveying.	
0200.36	Land management at the local, state and federal level.	
0200.37	Management of private lands.	
0200.38	Conduct an environmental assessment for a specific site.	
0200.39	Research land reclamation practices for various sites: wetlands, mines and oil and gas well sites.	
0200.40	Analyze political, biological, economical and sociological impacts on managing ecosystems.	

0200.41	Interpret current and historical aerial photography for land cover and land use applications.	
0200.42	Conduct a property title search.	
0200.43	Measure acreage on maps.	
0200.44	Prepare and write a conservation plan for a specific parcel of land.	
0200.45	Determine location and other information from maps using Global Positioning Systems (GPS).	
0200.46	Measure elevation of a given area using survey equipment.	

Environmental Laws and Government Agencies		Complete
Content Skill Sets		Knowledge/ Performance
0200.47	Students will demonstrate knowledge of environmental regulations and laws and local, state and federal agencies involved in conservation and environmental preservation.	
0200.48	Identify environmental regulations and their impacts to agriculture, forestry, mining and the oil and gas industry.	
0200.49	Identify regulatory agencies that govern agriculture, forestry, mining and the oil and gas industry.	
0200.50	Apply principles of nutrient, water and waste management to environmental problems.	
0200.51	Research government programs that support private land owners to conduct conservation practices.	

Environmental Laws and Government Agencies		Complete
Content Skill Sets		Knowledge/ Performance
0200.52	Emerging technology in natural resources related industries.	
0200.53	The impact of international agriculture on U.S. and global natural resources.	
0200.54	Career opportunities in technology, innovation, and entrepreneurship in natural resources related fields.	
0200.55	Grants available to support technology, innovation, and entrepreneurship in natural resources related fields.	
0200.56	Identify a current question in the natural resources sector and then develop a hypothesis and conduct research and present findings.	
0200.57	Identify a current issue or problem in the natural resources sector and work as a group to find a solution to the problem.	

Course Description: This course is designed to provide students with basic knowledge, skills and attitudes necessary for successful entry into a grounds maintenance occupation. Major instructional concepts included in this area of study are: safety principles in grounds maintenance, grounds maintenance equipment identification and use, career opportunities in grounds maintenance, lawn and landscape improvement and maintenance, and plant and soil science. Safety instruction is integrated into all activities. Teachers should provide each student with real world learning opportunities and instruction related to selection, development, and maintenance of individual Supervised Agricultural Experience (SAE) programs. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Industry, Safety, and Tools

Complete

Content Skill Sets		Knowledge/ Performance
0201.01	Career opportunities associated with grounds maintenance.	
0201.02	Tools and equipment associated with grounds maintenance.	
0201.03	Grounds maintenance safety.	
0201.04	Evaluate grounds maintenance tools, equipment and fuels for function and safety.	
0201.05	Recognize personal safety clothing and equipment needed for grounds maintenance procedures.	
0201.06	Utilize grounds maintenance tools and equipment safely.	
0201.07	Perform maintenance and service operations on grounds maintenance tools and equipment.	

Turf and Landscape

Complete

Content Skill Sets		Knowledge/ Performance
0201.08	Pest management.	
0201.09	Lawn care.	
0201.10	Landscape maintenance.	
0201.11	Analyze the information on pesticide labels.	
0201.12	Identify common pests, diseases and appropriate control techniques.	
0201.13	Create an integrated pest management (IPM) plan for a lawn.	
0201.14	Distinguish safe lawn mowing techniques from unsafe techniques.	
0201.15	Properly mow a lawn.	
0201.16	Use a lawn edger to edge a lawn.	
0201.17	Properly aerate and dethatch turf.	
0201.18	Irrigate lawns and landscapes.	
0201.19	Collect soil samples and conduct tests.	

0201.20	Analyze and interpret soil test results and determine soil needs.	
0201.21	Establish a schedule for applying fertilizer and lime to soil.	
0201.22	Demonstrate correct pruning procedures of trees and shrubs.	
0201.23	Choose proper mulch and mulching techniques for landscape plants.	
0201.24	Implement appropriate techniques to protect plants from winter conditions.	
0201.25	Demonstrate ability to mix and pour concrete.	
0201.26	Construct and maintain wood structures for use in landscapes.	
0201.27	Demonstrate ability to seal asphalt walks and driveways.	

Course Description: This course provides instruction on the broad field of horticulture with an emphasis on the scientific and technical knowledge for a career in horticulture. Topics in this course include plant growth and development, plant nutrition, media selection, basic plant identification, pest management, chemical disposal, customer relations, career opportunities, leadership development, and entrepreneurial skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Plant Anatomy, Classification and Identification

Knowledge Indicator(s)		Skill Set Met
0212.01	Plant identification and classification.	
0212.02	Major plant parts and functions.	
0212.03	Plant life cycles.	
Measurement Indicators		Skill Set Met
0212.04	Identify crop plant families and the horticultural crops in each one.	
0212.05	Analyze plant cells under a microscope.	

Plant Propagation, Growth and Nutrition

Knowledge Indicator(s)		Skill Set Met
0212.06	Photosynthesis and respiration.	
0212.07	Naturally occurring plant hormones and synthetic plant growth regulators.	
0212.08	Essential nutrients for plant growth and development.	
0212.09	Soil pH and cation exchange capacity.	
0212.10	Soil types and properties and the impact on horticultural plant production.	
0212.11	Synthetic fertilizer formulations and application.	
0212.12	Organic matter and its role in nutrient storage and plant nutrition.	
0212.13	Legume – rhizobium symbiosis and its potential contribution to plant nitrogen needs.	
0212.14	Optimum conditions for sexual and asexual propagation of plants.	
0212.15	Propagation techniques.	
0212.16	Tissue culturing (micro propagation).	
0212.17	Recombinant DNA technology in the plant industry.	
Measurement Indicators		Skill Set Met
0212.18	Conduct plant growth, photosynthesis/respiration, and hormone experiments.	
0212.19	Conduct experiments on plant growth comparing use of synthetic fertilizer with compost and/or organic fertilizers.	
0212.20	Collect soil and plant tissue samples for testing and interpret the test results.	
0212.21	Convert nutrient recommendations (from soil sample test results) into application rates for both synthetic and organic fertility amendments.	
0212.22	Conduct plant nutrition experiments.	
0212.23	Conduct experiments associated with seed germination rates, viability, and vigor.	
0212.24	Propagate various plants by the asexual methods of cutting, division, separation, layering, budding and grafting.	
0212.25	Aseptically propagate plants using micro propagation techniques.	

Plant Pests and Pest Management

Knowledge Indicator(s)		Skill Set Met
0212.26	Plant pests and disorders.	
0212.27	Pest control strategies associated with integrated pest management.	
Measurement Indicators		Skill Set Met
0212.28	Collect and identify major weeds species in horticultural crops, their life cycle and primary means of propagation/reproduction.	
0212.29	Collect and identify major insect species (pest and beneficial) that impact horticultural crops.	
0212.30	Collect diseased horticultural plants and identify the disease.	

Season Extension

Knowledge Indicator(s)		Skill Set Met
0212.31	Crops that can be produced in a high tunnel.	
0212.32	Low cost season extension practices and systems including low tunnels, hoop houses, fall bed preparation and more.	
Measurement Indicators		Skill Set Met
0212.33	Construct a season extension structure.	
0212.34	Grow appropriate crops in a season extension structure.	

Plant Production Schedule

Knowledge Indicator(s)		Skill Set Met
0212.35	Students will demonstrate knowledge of planning and scheduling various crops in greenhouses, high tunnels and outside growing areas.	
Measurement Indicators		Skill Set Met
0212.36	Observe and record environmental conditions during germination, growth, and development of a crop.	
0212.37	Monitor the progress of planting and determine the need to adjust environmental conditions.	
0212.38	Prepare and implement a plant production schedule based on predicted environmental conditions (plant hardiness zone map).	
0212.39	Create a planting schedule of a crop based on days to germination, maturity, season, and market demands.	

Agriculture Innovation and Technology

Knowledge Indicator(s)		Skill Set Met
0212.40	Emerging technology in the various plant systems industries.	
0212.41	The impact of international agriculture on the U.S. plant systems industries.	
0212.42	Career opportunities in technology, innovation, and entrepreneurship in plant systems industries.	
0212.43	Grants available to support technology, innovation, and entrepreneurship in plant systems industries.	
Measurement Indicators		Skill Set Met
0212.44	Identify a current question in the plant systems industries and then develop a hypothesis and conduct research and present findings.	
0212.45	Identify a current issue or problem in plant systems industries and work as a group to find a solution to the problem.	

Course Description: This specialization course covers topics on floral design, business planning, market plan development, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Creating and Designing Floral Arrangements		Complete
Content Skill Sets		Knowledge/ Performance
0213.01	Designing live, dried, or artificial flowers and foliage.	
0213.02	Cutting live, dried, or artificial flowers and foliage.	
0213.03	Arranging live, dried, or artificial flowers and foliage.	
0213.04	Floral design concepts.	
0213.05	Tools and equipment used in floral design.	
0213.06	Water plants, and cut, condition, and clean flowers and foliage for storage.	
0213.07	Select flora and foliage for arrangements, working with numerous combinations to synthesize and develop new creations.	
0213.08	Wrap and price completed arrangements.	
0213.09	Trim material and arrange bouquets, wreaths, terrariums, and other items using trimmers, shapers, wire, pins, floral tape, foam, and other materials.	
0213.10	Decorate or supervise the decoration of buildings, halls, churches, or other facilities for parties, weddings, and other occasions.	
0213.11	Grow flowers for use in arrangements or for sale in shop.	

Operating a Floral Shop		Complete
Content Skill Sets		Knowledge/ Performance
0213.12	Organizing a floral shop to operate effectively and efficiently.	
0213.13	Perform general cleaning duties in the store to ensure the shop is clean and tidy.	
0213.14	Unpack stock as it comes into the shop.	
0213.15	Conduct classes or demonstrations, or train other workers.	

Floral Retail		Complete
Content Skill Sets		Knowledge/ Performance
0213.16	Marketing floral products.	
0213.17	Retail selling of floral products.	

0213.18	Confer with clients regarding price and type of arrangement desired and the date, time, and place of delivery.	
0213.19	Order and purchase flowers and supplies from wholesalers and growers.	
0213.20	Plan arrangement according to client's requirements, utilizing knowledge of design and properties of materials, or select appropriate design pattern.	
0213.21	Perform office and retail service duties such as keeping financial records, serving customers, answering telephones, selling giftware items and receiving payment.	
0213.22	Inform customers about the care, maintenance, and handling of various flowers and foliage, indoor plants, and other items.	

Course Description: This specialization course covers instruction that expands the scientific knowledge and skills to include more advanced scientific computations and communication skills needed in the horticulture industry. Topics include greenhouse plant production and management, bedding plant production, watering systems light effects, career planning, leadership development and entrepreneurial skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Plant Care and Handling		Complete
Contest Skill Sets		Knowledge/ Performance
0214.01	Propagating horticultural plants.	
0214.02	Cultivating horticultural plants.	
0214.03	Harvesting horticultural plants.	
0214.04	Growing plants hydroponically.	
0214.05	Proper horticultural plant handling and storage.	
0214.06	Determine plant growing conditions, such as greenhouses, hydroponics, or natural settings, and set planting and care schedules.	
0214.07	Prepare soil for planting, and plant or transplant seeds, bulbs, and cuttings.	
0214.08	Cut and prune trees, shrubs, flowers, and plants.	
0214.09	Identify plants as well as problems such as diseases, weeds, and insect pests.	

Greenhouse Tools and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
0214.10	Tools and equipment used in greenhouse and nursery management and production.	
0214.11	Position and regulate plant irrigation systems, and program environmental and irrigation control computers.	
0214.12	Inspect facilities and equipment for signs of disrepair and perform necessary maintenance work.	
0214.13	Construct structures and accessories such as greenhouses and benches.	
0214.14	Position and regulate plant irrigation systems, and program environmental and irrigation control computers.	

Greenhouse and Nursery Business Management		Complete
Content Skill Sets		Knowledge/ Performance
0214.15	Planning, operating, and managing a greenhouse or nursery business.	
0214.16	Manage nurseries that grow horticultural plants for sale to retail customers, for display or exhibition, or for research.	

0214.17	Select and purchase seeds, plant nutrients, disease control chemicals, and garden and lawn care equipment.	
0214.18	Tour work areas to observe work being done, to inspect crops, and to evaluate plant and soil conditions.	
0214.19	Assign work schedules and duties to nursery and greenhouse staff and supervise their work.	
0214.20	Determine types and quantities of horticultural plants to be grown, based on budgets, projected sales volumes, and/or executive directives.	
0214.21	Explain and enforce safety regulations and policies.	
0214.22	Coordinate clerical, recordkeeping, inventory, requisitioning, and marketing activities.	
0214.23	Provide information to customers on the care of trees, shrubs, flowers, plants, and lawns.	

Pesticides and Fertilizer		Complete
Content Skill Sets		Knowledge/ Performance
0214.24	Pesticide use and safety.	
0214.25	Apply pesticides and fertilizers to plants.	

Course Description: This specialization course covers topics on plant nutrition, site preparation, plant selection, harvesting, equipment, value-added agriculture, insect and disease identification and control, food safety, soil management, entrepreneurship and animal control. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Planting and Harvesting		Complete
Content Skill Sets		Knowledge/ Performance
0220.01	Planting, cultivating, irrigating, and harvesting fruits, vegetables, trees, and shrubs.	
0220.02	Tools and equipment used in fruit and vegetable production.	
0220.03	Plant, spray, weed, fertilize, and water plants, shrubs, and trees, using hand tools and gardening tools.	
0220.04	Harvest plants, and transplant or pot and label them.	
0220.05	Dig, cut, and transplant seedlings, cuttings, trees, and shrubs.	
0220.06	Dig, rake, and screen soil; and, fill cold frames and hot beds in preparation for planting.	
0220.07	Harvest fruit and vegetables by hand.	

Pesticides, Herbicides, and Fertilizers		Complete
Content Skill Sets		Knowledge/ Performance
0220.08	Fertilizer and pesticide application and safety.	
0220.09	Fruit and vegetable production structures.	
0220.10	Operate tractors and other machinery and equipment to fertilize, cultivate, harvest, and spray fields and plants.	
0220.11	Haul and spread topsoil, fertilizer, peat moss, and other materials to condition soil, using wheelbarrows or carts and shovels.	
0220.12	Identify plants, pests, and weeds to determine the selection and application of pesticides and fertilizers.	
0220.13	Apply pesticides, herbicides or fertilizers to crops.	

Plant Care		Complete
Content Skill Sets		Knowledge/ Performance
0220.14	Plant care, observation, and record keeping.	
0220.15	Crop grading and sorting.	
0220.16	Feel plants' leaves and note their coloring to detect the presence of insects or disease.	
0220.17	Inspect plants and bud ties to assess quality.	

0220.18	Move containerized shrubs, plants, and trees, using wheelbarrows or tractors.	
0220.19	Clean work areas.	
0220.20	Record information about plants and plant growth.	
0220.21	Sell and deliver plants and flowers to customers.	
0220.22	Record information about crops, such as pesticide use, yields, or costs.	
0220.23	Participate in the inspection, grading, sorting, storage, and post-harvest treatment of crops.	

Irrigation		Complete
Content Skill Sets		Knowledge/ Performance
0220.24	Irrigation systems.	
0220.25	Set up and operate irrigation equipment.	
0220.26	Maintain and repair irrigation and climate control systems.	

Equipment Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
0220.27	Tool and equipment repair and maintenance.	
0220.28	Repair and maintain farm vehicles, implements, and mechanical equipment.	

Course Description: This is a specialization course designed for students interested in entering the livestock industry as a herd manager or livestock entrepreneur. The course will cover topics on nutrient management, farm planning, business planning, developing marketing plans, developing feed rations, forages, grassland management, embryo transfer and animal facilities as they apply to various livestock such as cattle, swine, sheep, goats, poultry and horses. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Animal Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
0230.01	Animal nutrition and nutrients.	
0230.02	Livestock feeds.	
0230.03	Digestive systems of livestock.	
0230.04	Balancing rations.	
0230.05	Feeding livestock.	
0230.06	Feed and water livestock; and monitor food and water supplies.	
0230.07	Order food for animals and arrange for its delivery.	
0230.08	Maintain growth, feeding, production, and cost records.	

Livestock Care and Management		Complete
Content Skill Sets		Knowledge/ Performance
0230.09	Livestock management practices.	
0230.10	Livestock facilities and equipment.	
0230.11	Livestock grooming.	
0230.12	Inspect, maintain, and repair equipment, machinery, buildings, pens, yards, and fences.	
0230.13	Move equipment, poultry, or livestock from one location to another, manually or using trucks or carts.	
0230.14	Clean stalls, pens, and equipment, using disinfectant solutions, brushes, shovels, water hoses, and/or pumps.	
0230.15	Mark livestock to identify ownership and grade, using brands, tags, paint, or tattoos.	
0230.16	Herd livestock to pastures for grazing or to scales, trucks, or other enclosures.	
0230.17	Adjust controls to maintain specific building temperatures required for animals' health and safety.	
0230.18	Brand, tattoo, or tag animals in order to allow animal identification.	
0230.19	Perform procedures such as animal dehorning or castration.	
0230.20	Organize or conduct animal shows.	

0230.21	Shift animals between grazing areas to ensure that they have sufficient access to food.	
0230.22	Milk animals such as cows and goats, by hand or using milking machines.	
0230.23	Segregate animals according to weight, age, color, and physical condition.	
0230.24	Groom, clip, trim, and/or castrate animals; dock ears and tails; and/or shear coats to collect hair.	
0230.25	Spray livestock with disinfectants and insecticides; or dip or bathe animals.	
0230.26	Collect, inspect, and place eggs in incubators; operate machines for egg washing, candling, and grading; and pack eggs in cartons.	
0230.27	Trim and shear poultry beaks, toes, and wings using debeaking machines, heated hand shears, or hot wires.	

Livestock Reproduction		Complete
Content Skill Sets		Knowledge/ Performance
0230.28	Livestock reproduction organs and systems.	
0230.29	The estrous cycle.	
0230.30	Phases of reproductive development.	
0230.31	Livestock artificial insemination procedures/equipment and other reproduction technology.	
0230.32	Evaluating breeding animals.	
0230.33	Prepare containers of semen for freezing and storage or shipment, placing them in dry ice or liquid nitrogen.	
0230.34	Maintain logs of semen specimens used and animals bred.	
0230.35	Measure specified amounts of semen into calibrated syringes and insert syringes into inseminating guns.	
0230.36	Inject prepared animal semen into female animals for breeding purposes, by inserting nozzle of syringe into vagina and depressing syringe plunger.	
0230.37	Examine semen microscopically to assess and record density and motility of gametes, and dilute semen with prescribed diluents according to formulas.	
0230.38	Perform duties related to livestock reproduction, such as breeding animals within appropriate timeframes, performing artificial inseminations, and helping with animal births.	

Course Description: SAE is a student-led, instructor-supervised, work-based learning experience that results in measurable outcomes within a predefined, agreed-upon set of Agriculture, Food, and Natural Resources (AFNR) Technical Standards and Career Ready Practices aligned to your career plan of study. If a student touches, prepares, sells, or communicates about anything related to AFNR, the experience will count as a legitimate SAE. SAEs are expected to relate to the concentration area in which the student seeks occupational completer status. An SAE shall fall into one of four categories: **Exploratory/Foundational:** Students will learn about the ‘big picture’ of agriculture and its many related careers. **Research/Experimentation and Analysis:** Students will conduct research or analyze information to discover new knowledge. **Ownership/Entrepreneurship:** Students will plan and operate an agriculture-related business. **Placement:** Students will work for someone else either for pay or for the experience. Students conducting all types of SAEs will track hours (both paid and unpaid), progress, income, expenses, events, etc., in the Classroom 2 Career tracking system/agriculture experience tracker (AET).

Exploratory/Foundational		Complete
Content Skill Sets		Knowledge/Performance
0234.1	Describe career opportunities and means to achieve those opportunities in each of the AFNR career pathways.	
0234.2	Explore and identify personal agricultural interests to create a career plan.	
0234.3	Act as a responsible and contributing citizen and employee by developing key employability skills.	
0234.4	Students will expand their personal financial literacy by developing a personal budget.	
0234.5	Examine and summarize the importance of health, safety, and environmental management systems in AFNR workplaces.	
0234.6	Analyze how issues, trends, technologies, and public policies impact systems in the AFNR career cluster.	
0234.7	Job shadow a worker within the agricultural industry.	
0234.8	Students will document their knowledge, skills, and plans in the Classroom 2 Career tracking system/AET.	

Research/Experimentation & Analysis		Complete
Content Skill Sets		Knowledge/Performance
0234.9	Investigate materials, processes, and information to establish new knowledge or the validation of previous research.	
0234.10	Follow the scientific process and accepted best practices for conducting research to ensure reliability, validity, and replicability of research.	
0234.11	Exercise safety throughout all aspects of the experimental process.	
0234.12	Apply the methods of the scientific method to control certain variables while manipulating others to observe the outcome.	
0234.13	Complete a Research Plan which safely meets all requirements.	
0234.14	Define a hypothesis.	
0234.15	Determine an appropriate experimental design, conduct the research, collect the data, draw conclusions from the data and recommend further research that can be done.	
0234.16	Formulate a why or how question, conduct data and collection using qualitative and/or quantitative methodologies.	

0234.17	Conduct an analysis of data, facts, and other information to determine the answer to the analytical question.	
0234.18	Apply the engineering design process to the invention research SAE to create a new product or service.	
0234.19	Conduct peer reviews with the supervising agricultural education instructor or other professionals at multiple stages throughout the research cycle.	
0234.20	Make a summary presentation of research and findings to a local committee organized by the agricultural education instructor.	
0234.21	Document methods, procedures, results, analysis, and conclusions in the Classroom 2 Career tracking system/AET.	

Ownership/Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
0234.22	Create, own, and operate a business that provides goods and/or services.	
0234.23	Exercise safety when operating all aspects of the business.	
0234.24	Make operational and risk management decisions on how goods and/or services are provided.	
0234.25	Conduct an operation of sufficient scope to enable the development of skills and abilities aligned to the AFNR standards.	
0234.26	Conduct an analysis of productivity and profitability at the end of each production/business cycle; make necessary changes for improvement.	
0234.27	Become familiar with common financial tools, balance sheets, income statements, inventories, and cash flow.	
0234.28	Design a business plan which provides for the continued growth and expansion of the operation.	
0234.29	Review and update the business plan annually to reflect the changes in the operation.	
0234.30	Track and document items produced, service hours worked, income, expenses, and the knowledge and skills attained within the Classroom 2 Career tracking system/AET record book.	

Placement		Complete
Content Skill Sets		Knowledge/ Performance
0234.31	Develop a job plan that includes considerations that promote a safe worksite and opportunities to learn on the job.	
0234.32	Develop agriculture, food, natural resource, and employability skills and abilities outside the classroom through a hands-on job site experience.	
0234.33	Perform an environmental safety review on yourself and your worksite.	
0234.34	Pursue and complete the necessary safety training needed for employment in the related SAE area.	
0234.35	Take measures to address any safety concerns identified.	
0234.36	Perform the tasks determined by the employer which are necessary for the operation of the business.	
0234.37	Track and document hours worked, income received, tasks completed, and the knowledge and skills attained within the Classroom 2 Career tracking system/AET record book.	

NOTES:

[Guidelines for Awarding SAE Credit Document](#)

Sources: [Educator Resources – SAE For All](#)

Course Description: This specialization course covers topics on lawn care and turf production, golf course management, irrigation systems, turf equipment and maintenance, landscape design, landscape plants, landscape maintenance, plant pruning, marketing, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Landscape Design and Installation		Complete
Content Skill Sets		Knowledge/ Performance
0240.01	Planting and establishing turf.	
0240.02	Tools and equipment used in turf and landscape installation.	
0240.03	Installing various landscaping materials.	
0240.04	Landscape design.	
0240.05	Follow planned landscaping designs to determine where to lay sod, sow grass, or plant flowers or foliage.	
0240.06	Plant seeds, bulbs, foliage, flowering plants, grass, ground covers, trees, or shrubs and apply mulch for protection, using gardening tools.	
0240.07	Decorate gardens with stones or plants.	
0240.08	Haul or spread topsoil or spread straw over seeded soil to hold soil in place.	
0240.09	Plan or cultivate lawns or gardens.	
0240.10	Attach wires from planted trees to support stakes.	
0240.11	Install rock gardens, ponds, decks, drainage systems, irrigation systems, retaining walls, fences, planters, or playground equipment.	
0240.12	Build forms and mix and pour cement to form garden borders.	

Pesticides		Complete
Content Skill Sets		Knowledge/ Performance
0240.13	Pesticide use and safety.	
0240.14	Mix and spray or spread fertilizers, herbicides, or insecticides onto grass, shrubs, or trees, using hand or automatic sprayers or spreaders.	

Irrigation Systems		Complete
Content Skill Sets		Knowledge/ Performance
0240.15	Irrigation systems.	
0240.16	Use irrigation methods to adjust the amount of water consumption and to prevent waste.	
0240.17	Maintain irrigation systems, including winterizing the systems and starting them up in spring.	

Lawn Care and Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
0240.18	Tools and equipment used in turf and landscape maintenance.	
0240.19	Lawn care and maintenance.	
0240.20	Operate vehicles and powered equipment, such as mowers, tractors, twin- axle vehicles, snow blowers, chain saws, electric clippers, sod cutters, and pruning saws.	
0240.21	Mow or edge lawns, using power mowers or edgers.	
0240.22	Shovel snow from walks, driveways, or parking lots and spread salt in those areas.	
0240.23	Care for established lawns by mulching, aerating, weeding, grubbing, removing thatch, or trimming or edging around flower beds, walks, or walls.	
0240.24	Use hand tools, such as shovels, rakes, pruning saws, saws, hedge or brush trimmers, or axes.	
0240.25	Prune or trim trees, shrubs, or hedges, using shears, pruners, or chain saws.	
0240.26	Gather and remove litter.	
0240.27	Maintain or repair tools, equipment, or structures, such as buildings, greenhouses, fences, or benches, using hand or power tools.	
0240.28	Provide proper upkeep of sidewalks, driveways, parking lots, fountains, planters, burial sites, or other grounds features.	
0240.29	Water lawns, trees, or plants, using portable sprinkler systems, hoses, or watering cans.	
0240.30	Trim or pick flowers and clean flower beds.	
0240.31	Rake, mulch, and compost leaves.	
0240.32	Care for natural turf fields, making sure the underlying soil has the required composition to allow proper drainage and to support the grasses used on the fields.	
0240.33	Advise customers on plant selection or care.	
0240.34	Mark design boundaries and paint natural or artificial turf fields with team logos or names before events.	

Course Description: This course is designed as an introductory course for students to learn American Sign Language (ASL). Students will learn the alphabet (fingerspelling), numbers, vocabulary, phonology (hand shape, movement, and orientation of the signs), and basic ASL sentence structure. They will discover the importance of facial expressions, non-manual markers, and body language. Additionally, students will be introduced to classifiers and signing space. In this course, students will study Deaf culture and the history of sign language. Receptive and expressive practice will be provided.

American Sign Language (ASL) Foundational Handshapes		Complete
Content Skill Sets		Knowledge/ Performance
0300.1	Model handshapes, palm orientations, location, and movement.	
0300.2	Comprehend basic ASL handshapes.	
0300.3	Recognize the manual ASL alphabet.	
0300.4	Receptively comprehend the manual alphabet.	
0300.5	Receptively comprehend numbers in ASL.	

ASL Vocabulary		Complete
Content Skill Sets		Knowledge/ Performance
0300.6	Receptively comprehend ASL vocabulary.	
0300.7	Expressively model ASL vocabulary.	
0300.8	Actively use ASL vocabulary to participate in conversational dialogue.	
0300.9	Make and respond to introductions and farewells using appropriate ASL vocabulary.	
0300.10	Ask and answer questions on simple topics.	

Expressive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0300.11	Present information and/or stories based on simple topics from a signed, oral, or written source correctly.	
0300.12	Give simple directions, commands, requests, and instructions.	
0300.13	Communicate the need for clarification on simple topics.	
0300.14	Produce signs that are clear and accurate.	
0300.15	Finger spell clearly and fluently.	
0300.16	Mark sentence boundaries by pausing appropriately.	
0300.17	Dramatize stories commonly known by members of the Deaf Community (ABC, numbers, or classifier stories).	

Receptive ASL**Complete****Content Skill Sets****Knowledge/
Performance**

0300.18	Recognize simple words, phrases, and sentences in ASL.	
0300.19	Comprehend main ideas using basic vocabulary on familiar topics.	
0300.20	Follow short, simple directions, commands, and instructions.	
0300.21	Understand simple stories, poems, and informational texts.	
0300.22	Identify people and objects in the environment based on signed descriptions.	

Interactive ASL**Complete****Content Skill Sets****Knowledge/
Performance**

0300.23	Have short conversations on basic information about familiar topics.	
0300.24	Make and respond to introductions and farewells using appropriate spatial agreement.	
0300.25	Ask and answer questions on simple topics.	

Deaf Culture**Complete****Content Skill Sets****Knowledge/
Performance**

0300.26	Identify beliefs, values, and customs of the Deaf Community.	
0300.27	Demonstrate an awareness of Deaf heritage and identify major historical events and individuals from culture.	
0300.28	Provide examples of commonly-held historical beliefs among the Deaf culture (educational opportunities, hearing devices, etc.).	
0300.29	Identify and understand the significance of ASL, objects, images, products, and symbols of the Deaf culture.	
0300.30	Recognize behaviors unique to the Deaf culture (e.g., hugs, eye contact, touching, personal space, attention-getting, turn-taking).	
0300.31	Demonstrate an understanding of the concept of culture through comparisons of Deaf culture with other cultures.	
0300.32	Observe and discuss the historical and current role of technology in the Deaf culture.	
0300.33	Explore the existence of ASL in the United States and foreign influences on its etymological development.	

ASL Comparisons**Complete****Content Skill Sets****Knowledge/
Performance**

0300.34	Develop insights into the nature of language through comparisons of ASL and English.	
0300.35	Recognize similarities and differences between English and the visual/conceptual features of ASL.	
0300.36	Compare the word order patterns used in ASL with grammatical rules used in English.	
0300.37	Communicate with inflections for questions, negatives, and statements in ASL while comparing this to the inflectional patterns in English.	
0300.38	Identify formal and informal forms of ASL and English.	

Non-manual Behaviors		Complete
Content Skill Sets		Knowledge/ Performance
0300.39	Use appropriate facial expressions.	
0300.40	Demonstrate proper body language.	
0300.41	Clearly show spatial organization.	
0300.42	Incorporate basic non-manual markers into signing.	

Community		Complete
Content Skill Sets		Knowledge/ Performance
0300.43	Use ASL within and beyond the school setting.	
0300.44	Show evidence of becoming life-longer learners by using ASL for personal enjoyment, enrichment, and career development.	
0300.45	Locate resources for the deaf and recognize the potential of ASL.	
0300.46	Present ASL and Deaf awareness information.	
0300.47	Identify opportunities to use ASL for enjoyment.	
0300.48	Research deafness-related careers.	
0300.49	Attend or view cultural events and social activities.	

Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
0300.50	Learn and follow the interpreter professional tenets, conduct, and considerations.	
0300.51	Comprehend the foundation of ethics.	
0300.52	Understand the interpreter's roles and responsibilities.	
0300.53	Practice ethical decision-making.	

History of the Profession		Complete
Content Skill Sets		Knowledge/ Performance
0300.54	Examine the history of the establishment of the Registry of Interpreters for the Deaf (RID).	
0300.55	Research certification of sign language interpreters.	
0300.56	Recognize sign language interpreter assessments and levels.	

ASL Foundations		Complete
------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
0300.57 Form and interpret basic ASL classifier handshapes.	
0300.58 Use ASL affirmation and negation.	
0300.59 Apply directionality of verbs in ASL.	
0300.60 Utilize time-markers.	
0300.61 Incorporate plurals in signing.	
0300.62 Map signing space.	
0300.63 Accurately use pronouns.	
0300.64 Include non-manual sign modifications (mouth movements, eyebrows, eye gaze, etc.).	

Legal Aspects		Complete
Content Skill Sets		Knowledge/ Performance
0300.65 Demonstrate content knowledge of sign laws pertaining to interpreters.		
0300.66 Apply laws to the interpreting profession.		

Connections		Complete
Content Skill Sets		Knowledge/ Performance
0300.67 Reinforce and add further knowledge of other disciplines using ASL.		
0300.68 Use technology to obtain information and resources pertaining to the Deaf community.		

Course Description: This course will build on the knowledge and skills learned in Sign Language 1. It is designed for students to continue to acquire advanced American Sign Language (ASL) vocabulary. Grammatical aspects of ASL will be practiced and applied. Students will enhance their receptive, expressive, and interactive ASL skills. Students will continue to learn aspects of Deaf history and culture in this course. Additionally, students will be able to interact with the Deaf community.

Basic Communication		Complete
Content Skill Sets		Knowledge/ Performance
0301.1	Communicate in American Sign Language (ASL) on a wide range of topics.	
0301.2	Incorporate and understand appropriate handshapes, palm orientations, location, movement, and non-manual behaviors in signing.	
0301.3	Use and comprehend fingerspelling and numbers.	

ASL Vocabulary		Complete
Content Skill Sets		Knowledge/ Performance
0301.4	Expand ASL vocabulary both expressively and receptively.	
0301.5	Ask and answer questions on complex topics using more advanced ASL vocabulary.	

Expressive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.6	Present information and/or stories/poems on topics from a signed, oral, or written source correctly.	
0301.7	Give directions, commands, requests, and instructions.	
0301.8	Communicate the need for clarification on topics to confirm understanding.	
0301.9	Produce signs that are clear, fluent, and accurate.	
0301.10	Fingerspell clearly and fluently.	
0301.11	Mark sentence and topic boundaries by pausing appropriately.	
0301.12	Express needs, likes, and dislikes with supporting details.	
0301.13	Incorporate facial expressions, body language, and non-manual markers.	

Receptive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.14	Recognize words, phrases, and sentences in ASL.	
0301.15	Comprehend main ideas using vocabulary on various topics.	

0301.16	Follow directions, commands, and instructions.	
0301.17	Understand stories, poems, and informational texts.	
0301.18	Differentiate between similar descriptions of people, ideas, objects, and emotions based on signed descriptions.	

Interactive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.19	Have conversations on information about different topics.	
0301.20	Request and provide information on a variety of topics.	
0301.21	Ask and answer questions on various topics.	
0301.22	Negotiate the meaning of signed information to reach understanding.	
0301.23	Discuss opinions and preferences about personal experiences and other topics.	

Deaf Culture		Complete
Content Skill Sets		Knowledge/ Performance
0301.24	Demonstrate knowledge and understanding of the relationships of practices and contributions of Deaf culture and the Deaf community.	
0301.25	Discuss ASL literary examples including visual elements of ASL expansion.	
0301.26	Describe contributions made by individuals contributing to Deaf heritage.	
0301.27	Research the significance of ASL, objects, images, products, and symbols of Deaf culture.	
0301.28	Explore the membership of the Deaf community.	
0301.29	Identify organizations and their roles in the Deaf community.	
0301.30	Conceptualize and debate topics pertinent to Deaf culture.	
0301.31	Study Deaf humor, literature, and cultural arts of the Deaf community.	

ASL Comparisons		Complete
Content Skill Sets		Knowledge/ Performance
0301.32	Examine and compare options regarding ASL as a language.	
0301.33	Summarize the syntactical and linguistic similarities and differences between ASL and English.	
0301.34	Analyze and debate topics pertinent to ASL.	
0301.35	Communicate with inflections for questions, negatives, and statements in ASL while comparing this to the inflectional patterns in English.	
0301.36	Utilize critical elements of ASL that must be mastered to convey meaning.	

Non-manual Behaviors		Complete
-----------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
0301.37 Use appropriate facial expressions in all signing.	
0301.38 Demonstrate proper body language in all interpreting.	
0301.39 Clearly show spatial organization in all signed communication.	
0301.40 Incorporate all essential non-manual markers into signing.	

Community	
Content Skill Sets	Complete Knowledge/ Performance
0301.41 Use ASL within and beyond the school setting (club activities, "silent dinners," etc.).	
0301.42 Show evidence of becoming life-long learners by using ASL for personal enjoyment, enrichment, and career development.	
0301.43 Locate resources for the Deaf and recognize the potential of ASL.	
0301.44 Present ASL and Deaf awareness information.	
0301.45 Identify opportunities to use ASL for enjoyment.	
0301.46 Research deafness-related careers.	
0301.47 Attend or view cultural events and social activities.	
0301.48 Expand knowledge of career opportunities and limitations by reviewing legislation affecting career choices and accommodations.	

Professionalism	
Content Skill Sets	Complete Knowledge/ Performance
0301.49 Adhere to the interpreter's professional tenets, conduct, and considerations.	
0301.50 Follow the proper dress code for interpreting.	
0301.51 Understand the interpreter's roles and responsibilities.	
0301.52 Practice ethical decision-making.	

History of the Profession	
Content Skill Sets	Complete Knowledge/ Performance
0301.53 Examine the history of sign language interpreters.	
0301.54 Recognize sign language interpreter assessments and levels.	

ASL Foundations	
Content Skill Sets	Complete Knowledge/ Performance
0301.55 Utilize and interpret basic ASL classifiers handshapes.	

0301.56	Use ASL affirmation and negation.	
0301.57	Apply directionality of verbs in ASL.	
0301.58	Utilize time-markers.	
0301.59	Incorporate plurals in signing.	
0301.60	Map signing space.	
0301.61	Accurately use pronouns.	
0301.62	Include non-manual sign modifications (mouth movement, eyebrows, eye gaze, etc.).	

Legal Aspects		Complete
Content Skill Sets		Knowledge/ Performance
0301.63	Demonstrate content knowledge of significant laws pertaining to interpreters.	
0301.64	Apply laws to the interpreting profession.	

Connections		Complete
Content Skill Sets		Knowledge/ Performance
0301.65	Reinforce and add further knowledge of other disciplines using ASL.	
0301.66	Use technology to obtain information and resources pertaining to the Deaf community.	
0301.67	Examine resources and information pertaining to the interpreting profession.	
0301.68	Identify issues from different perspectives of members of the Deaf community (i.e., using topics found in Deaf publications such as <i>WVAD Newsletter</i> , <i>Deaf President Now</i> , and other state and federal legislation, etc.).	
0301.69	Analyze the appropriate technology available to the Deaf community in cross-cultural settings.	
0301.70	Articulate the main ideas and other significant details on topics from other classes or from Deaf culture as presented on videos or live presentations.	

Course Description: This course will build on the knowledge and skills learned in Sign Language 1 and 2. It is designed for students to learn complex American Sign Language (ASL) vocabulary. Students will refine all grammatical aspects of ASL. They will communicate in ASL demonstrating a wide range of skills in receptive, expressive, and interactive skills. The Code of Professional Conduct Tenets for sign language interpreters will be used to guide students. Students will learn more about the Deaf community and culture through Deaf language models.

Basic Communication		Complete
Content Skill Sets		Knowledge/ Performance
0302.1	Communicate in American Sign Language (ASL) on a wide range of topics.	
0302.2	Incorporate and understand appropriate handshapes, palm orientations, location, movement, and non-manual behaviors in signing.	
0302.3	Use and comprehend fingerspelling and numbers.	
0302.4	Incorporate an increased ASL lexicon into everyday language use.	

ASL Vocabulary		Complete
Content Skill Sets		Knowledge/ Performance
0302.5	Expand ASL vocabulary both expressively and receptively.	
0302.6	Ask and answer questions on complex topics using advanced ASL vocabulary.	

Expressive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0302.7	Present information and/or stories/poems on complex topics from a signed, oral, or written source correctly.	
0302.8	Give detailed directions, commands, requests, and instructions.	
0302.9	Communicate the need for clarification on topics to confirm understanding.	
0302.10	Produce signs that are clear, fluent, and accurate.	
0302.11	Fingerspell clearly and fluently.	
0302.12	Mark sentence and topic boundaries by pausing appropriately.	
0302.13	Express advanced needs, likes, and dislikes with supporting details.	
0302.14	Incorporate facial expressions, body language, and non-manual markers appropriately at all times.	
0302.15	Demonstrate cultural nuances of meaning in expressive products of various literary categories.	

Receptive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0302.16	Recognize complex words, phrases, and sentences in ASL.	
0302.17	Comprehend main ideas and themes using vocabulary on various topics.	
0302.18	Follow detailed directions, commands, and instructions.	
0302.19	Understand extended stories, poems, and informational texts.	
0302.20	Differentiate between similar descriptions of people, ideas, objects, and emotions based on detailed signed descriptions.	
0302.21	Show understanding of cultural nuances of meaning in ASL.	

Interactive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0302.22	Have lengthy conversations on information about a variety of topics.	
0302.23	Request and provide detailed information on a variety of topics.	
0302.24	Comprehensively ask and answer questions on various topics.	
0302.25	Analyze the main lot, characterization, and setting in ASL literature.	
0302.26	Have in-depth discussions on opinions and preferences about personal experiences and other topics.	
0302.27	Create and present ABC, number, or classifier stories.	

Deaf Culture		Complete
Content Skill Sets		Knowledge/ Performance
0302.28	Propose solutions to issues and problems that are of concern to members of the Deaf community.	
0302.29	Examine ASL literary examples including visual elements of ASL expansion.	
0302.30	Describe contributions made by individuals contributing to Deaf heritage.	
0302.31	Research the significance of ASL, objects, images, products, and symbols of Deaf culture.	
0302.32	Explore the membership of the Deaf community.	
0302.33	Identify organizations and their roles in the Deaf community.	
0302.34	Conceptualize and debate topics pertinent to Deaf culture.	
0302.35	Study Deaf humor, literature, and cultural arts of the Deaf community.	
0302.36	Research and present a current event from the Deaf community or culture.	
0302.37	Discover cross-cultural relevance of common issues in both the hearing and Deaf cultures.	
0302.38	Apply knowledge gained on the communication of Deaf individuals to experiences in interactions within the community.	

ASL Comparisons		Complete
------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
0302.39 Compare and contrast figurative language and idioms of both ASL and English.	
0302.40 Summarize the syntactical and linguistic similarities and differences between ASL and English.	
0302.41 Analyze and debate topics pertinent to ASL.	
0302.42 Communicate with inflections for questions, negatives, and statements in ASL while comparing this to the inflectional patterns in English.	
0302.43 Utilize critical elements of ASL that must be mastered to convey meaning.	
0302.44 Demonstrate the difference between auditory language and ASL including homophones.	

Non-manual Behaviors		Complete
Content Skill Sets		Knowledge/ Performance
0302.45 Use appropriate facial expressions in all interpreting.		
0302.46 Demonstrate proper body language in all interpreting.		
0302.47 Clearly show spatial organization in all interpreting.		
0302.48 Incorporate all essential non-manual makers into interpreting.		

Community		Complete
Content Skill Sets		Knowledge/ Performance
0302.49 Use ASK within and beyond the school setting (club activities, “silent dinners,” etc.)		
0302.50 Show evidence of becoming life-long learners by using ASL for personal enjoyment, enrichment, and career development.		
0302.51 Locate resources for the Deaf and recognize the potential of ASL.		
0302.52 Present ASL and Deaf awareness information.		
0302.53 Identify opportunities to use ASL for enjoyment.		
0302.54 Research deafness-related careers.		
0302.55 Attend or view Deaf cultural events and social activities.		
0302.56 Expand knowledge of career opportunities and limitations while reviewing, legislation affecting career choices and accommodations.		
0302.57 Experience interpreting opportunities (job shadowing, interviewing an interpreter, etc.).		
0302.58 Interview members of the Deaf community.		
0302.59 Exchange information of important issues related to the school and/or community.		

Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
0302.60 Adhere to the interpreter’s professional tenets, conduct, and considerations.		

0302.61	Follow the proper dress code for interpreting.	
0302.62	Understand the interpreter's roles and responsibilities.	
0302.63	Practice ethical interpreter decision-making.	
0302.64	Distinguish sign language interpreter assessments and levels.	
0302.65	Analyze own linguistic growth through recorded video segments.	

ASL Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0302.66	Utilize and interpret ASL classifiers handshapes.	
0302.67	Use ASL affirmation and negation in interpreting.	
0302.68	Apply directionality of verbs in ASL interpreting.	
0302.69	Utilize time-markers appropriately.	
0302.70	Incorporate plurals in interpreting.	
0302.71	Map signing space.	
0302.72	Accurately use pronouns.	
0302.73	Include non-manual sign modifications (mouth movements, eyebrows, eye gaze, etc.).	
0302.74	Identify the five parameters of ASL.	

Legal Aspects		Complete
Content Skill Sets		Knowledge/ Performance
0302.75	Demonstrate content knowledge of significant laws pertaining to interpreters.	
0302.76	Apply laws to the interpreting profession.	
0302.77	Analyze social and legislative issues that affect the Deaf community.	

Connections		Complete
Content Skill Sets		Knowledge/ Performance
0302.78	Reinforce and add further knowledge of other disciplines using ASL.	
0302.79	Use technology to obtain information and resources pertaining to the Deaf community.	
0302.80	Examine resources and information pertaining to the interpreting professions.	
0302.81	Identify issues from different perspectives of members of the Deaf community (i.e., using topics found in Deaf publications such as <i>WVAD Newsletter</i> , <i>Deaf President Now</i> , other state and federal legislation, etc.).	
0302.82	Analyze the appropriate technology available to the Deaf community in cross-cultural settings.	
0302.83	Articulate the significant details on topics from other classes or from Deaf culture as presented on video or live presentations.	
0302.84	Project future advances that will affect the Deaf and/or ASL.	

Course Description: This course is designed to focus on sign language interpreting. Students will learn the professional aspects of interpreting (ethics, career options, billing practices, etc.). Extensive interpreting practice will be provided. Students will observe and actively participate in the work-based integration through actual interpreting experiences. The Code of Professional Conduct for sign language interpreters will be practiced. Students will use ASL both within and beyond the school setting.

Basic Communication		Complete
Content Skill Sets		Knowledge/ Performance
0000.1	Communicate in American Sign Language (ASL) on a wide range of topics.	
0000.2	Incorporate and understand appropriate handshapes, palm orientations, location, movement, and non-manual behaviors in signing.	
0000.3	Use and comprehend complex fingerspelling and number systems.	
0000.4	Incorporate an increased ASL lexicon into everyday language use.	

ASL Vocabulary		Complete
Content Skill Sets		Knowledge/ Performance
0000.5	Expand ASL vocabulary both expressively and receptively.	
0000.6	Ask and answer questions on complex topics using advanced ASL vocabulary.	

Expressive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0000.7	Present information and/or stories/poems on complex topics from a signed, oral, or written source correctly.	
0000.8	Give detailed directions, commands, requests, and instructions.	
0000.9	Communicate the need for clarification on topics to confirm understanding.	
0000.10	Produce signs that are clear, fluent, and accurate.	
0000.11	Fingerspell clearly and fluently.	
0000.12	Mark sentence and topic boundaries by pausing appropriately.	
0000.13	Express advanced needs, likes, and dislikes with supporting details.	
0000.14	Incorporate facial expressions, body language, and non-manual markers appropriately at all times.	
0000.15	Demonstrate cultural nuances of meaning in expressive products of various literary categories.	

Receptive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0000.16	Recognize technical words, phrases, and sentences in ASL.	
0000.17	Comprehend main ideas and themes using advanced genre-specific ASL on various topics.	
0000.18	Exhibit knowledge of detailed directions, commands, and instructions.	
0000.19	Understand elaborate stories, poems, and informational texts.	
0000.20	Differentiate between similarly detailed descriptions of people, ideas, objects, and emotions based on detailed signed descriptions.	
0000.21	Show understanding of cultural nuances of meaning in ASL.	

Interactive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0000.22	Have lengthy conversations on information about a variety of topics.	
0000.23	Request and provide elaborate information on a variety of topics.	
0000.24	Comprehensively ask and answer questions on various topics.	
0000.25	Analyze the main plot, characterization, and setting in ASL literature.	
0000.26	Have in-depth discussions on opinions and preferences about personal experiences and other topics.	

Deaf Culture		Complete
Content Skill Sets		Knowledge/ Performance
0000.27	Advocate for the Deaf community in a professional manner.	
0000.28	Have an in-depth understanding of the cultural norms of Deaf culture and the Deaf community.	
0000.29	Research and present a current event from the Deaf community or culture.	
0000.30	Explore the membership of the Deaf community.	
0000.31	Identify organizations and their roles in the Deaf community.	
0000.32	Conceptualize and debate topics pertinent to Deaf culture.	
0000.33	Study Deaf humor, literature, and cultural arts of the Deaf community.	

ASL Comparisons		Complete
Content Skill Sets		Knowledge/ Performance
0000.34	Compare and contrast figurative language and idioms of both ASL and English.	
0000.35	Summarize the syntactical and linguistic similarities and differences between ASL and English.	
0000.36	Communicate with inflections of questions, negatives, and statements in ASL while comparing this to the inflectional patterns in English.	

0000.37	Utilize critical elements of ASL that must be mastered to convey meaning.	
---------	---	--

Non-manual Behaviors		Complete
Content Skill Sets		Knowledge/ Performance
0000.38	Use appropriate facial expressions.	
0000.39	Demonstrate proper body language.	
0000.40	Clearly show spatial organization.	
0000.41	Incorporate all essential non-manual makers.	

Community		Complete
Content Skill Sets		Knowledge/ Performance
0000.42	Use ASL within and beyond the school setting (club activities, "silent dinners," etc.).	
0000.43	Show evidence of becoming life-long learners by using ASL for personal enjoyment, enrichment, and career development.	
0000.44	Locate resources for the Deaf and recognize the potential of ASL.	
0000.45	Present ASL and Deaf awareness information.	
0000.46	Identify opportunities to use ASL for enjoyment.	
0000.47	Research deafness-related careers.	
0000.48	Attend or view Deaf cultural events and social activities.	
0000.49	Expand knowledge of career opportunities and limitations while reviewing legislation affecting career choices and accommodations.	
0000.50	Experience interpreting opportunities (job shadowing, interviewing an interpreter, etc.).	
0000.51	Interview members of the Deaf community.	

Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
0000.52	Adhere to interpreter professional tenets, conduct, and considerations.	
0000.53	Follow the proper dress code for interpreting.	
0000.54	Understand interpreter roles and responsibilities.	
0000.55	Practice ethical interpreter decision-making.	
0000.56	Distinguish sign language interpreter assessments and levels.	
0000.57	Analyze own linguistic growth through recorded video segments.	
0000.58	Develop independent approaches to doing this such as being able to work with little supervision.	
0000.59	Create and sustain constructive and cooperative working relationships with others.	

ASL Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0000.60	Utilize and interpret ASL classifier handshapes.	
0000.61	Use ASL affirmation and negation in interpreting.	
0000.62	Apply directionality of verbs in ASL interpreting.	
0000.63	Utilize time-markers appropriately.	
0000.64	Incorporate plurals in interpreting.	
0000.65	Map signing space using discourse mapping.	
0000.66	Accurately use pronouns.	
0000.67	Include non-manual sign modifications (mouth movements, eyebrows, eye-gaze, etc.).	
0000.68	Utilize the five parameters of ASL.	
0000.69	Understand the structure and content of ASL, including meaning, mar, and articulation.	

Legal Aspects		Complete
Content Skill Sets		Knowledge/ Performance
0000.70	Demonstrate content knowledge of significant laws pertaining to interpreters.	
0000.71	Apply laws to the interpreting profession.	

Connections		Complete
Content Skill Sets		Knowledge/ Performance
0000.72	Reinforce and add further knowledge of other disciplines using ASL.	
0000.73	Use technology to obtain information and resources pertaining to the Deaf community.	
0000.74	Examine resources and information pertaining to the interpreting profession.	
0000.75	Identify issues from different perspectives of members of the Deaf community (i.e., using topics found in Deaf publications such as <i>WVAD Newsletter</i> , <i>Deaf President Now</i> , other state and federal legislation, etc.).	
0000.76	Analyze the appropriate technology available to the Deaf community in a cross-cultural setting.	
0000.77	Articulate the significant details on topics from other classes or from Deaf culture as presented on video or live presentations.	

Interpreting		Complete
Content Skill Sets		Knowledge/ Performance
0000.78	Access communication to make adjustments in approaches to interpreting.	
0000.79	Self-monitor the interpretation during and after the task.	
0000.80	Concentrate and stay undistracted during interpreting for an extended period of time.	

0000.81	Use the appropriate lag time while interpreting.	
0000.82	Interpret both expressively and receptively in a way others will understand.	
0000.83	Maintain composure and control emotions even in difficult interpreting situations.	
0000.84	Show respect and a good work ethic in all interpreting assignments.	
0000.85	Adhere to standards of confidentiality in all interpreting assignments.	
0000.86	Demonstrate respect for consumers and all others involved in the interpreting assignments.	

Course Description: Through the study of medical terminology, the student will be introduced to the language of medicine. Students will gain an understanding of basic elements, rules of building and analyzing medical words, and medical terms associated with the human body utilizing a systems approach. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Basic Elements of Medical Words		Complete
Content Skill Sets		Knowledge/ Performance
0721.01	Examine the four basic medical elements and interpret their role in forming medical terms.	
0721.02	Interpret medical terms by identifying their component elements.	
0721.03	Articulate the basic rules for building medical terms.	
0721.04	Utilize basic steps to pronounce and define medical terms.	
0721.05	Analyze the position and role of suffixes when used in building medical terms.	
0721.06	Compare surgical, diagnostic, and symptomatic suffixes.	
0721.07	Analyze suffixes to determine their part of speech.	
0721.08	Examine the role of diminutive suffixes.	
0721.09	Analyze the position and role of prefixes used in building medical terms.	
0721.10	Compare prefixes indicating position, number, measurement, negation and direction.	

Medical Terminology Associated with the Body as a Whole		Complete
Content Skill Sets		Knowledge/ Performance
0721.11	Examine medical terms associated with the levels of organization of structure and function within the human body.	
0721.12	Demonstrate an understanding of the disease process by defining medical terms used in pathology.	
0721.13	Define and pronounce medical terms used in conjunction with anatomical body planes, cavities, and regions.	
0721.14	Compare diagnostic and therapeutic procedures associated with body structure.	
0721.15	Analyze medical terms indicating the direction and position of the body.	
0721.16	Interpret abbreviations related to body structure.	

Medical Terminology Associated with Body Systems		Complete
Content Skill Sets		Knowledge/ Performance
0721.17	Demonstrate knowledge of medical terminology associated with the following body systems:	

	<ul style="list-style-type: none"> • Integumentary • Gastrointestinal • Respiratory • Cardiovascular • Blood and lymphatic • Musculoskeletal • Genitourinary • Reproductive • Endocrine • Nervous • Special senses 	
0721.18	Define and pronounce medical terms used to identify the basic structure and function of each body system.	
0721.19	Interpret the meaning of combining forms, suffixes and prefixes.	
0721.20	Define and integrate medical terms associated with basic pathology.	
0721.21	Compare commonly used diagnostic and symptomatic medical terms.	
0721.22	Identify and interpret medical terms related to surgery, diagnostic imaging, and therapeutic and laboratory procedures.	
0721.23	Examine medical terms associated with clinical procedures used in the process of examination and evaluation of structure and function.	
0721.24	Analyze medical terms related to oncology.	
0721.25	Examine medical terms used in pharmacology to treat common disorders.	
0721.26	Interpret the meaning of common medical abbreviations related to body systems.	

Course Description: Within this course, students will learn basic principles of human behavior. As a result of this knowledge, students should gain an improved sense of self and build interpersonal relationship skills. The end goal will be the delivery of conscientious, personalized care which conveys respect and sincerity. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Challenges and Satisfaction of Being a Healthcare Provider		Complete
Content Skill Sets		Knowledge/ Performance
0725.01	Demonstrate knowledge of the realities of a health career in relationship to challenges, responsibilities, problems and satisfactions.	
0725.02	Compare satisfaction gained from the approval of others to that of an inner feeling of pride from knowing you performed your job well.	
0725.03	Determine what is meant for the healthcare provider to set standards of excellence.	
0725.04	Examine the concepts of mediocrity and empowerment.	

Philosophy of Individual Worth and Self-Understanding		Complete
Content Skill Sets		Knowledge/ Performance
0725.05	Demonstrate knowledge of the philosophy of individual worth and self-understanding in relation to the provider/patient relationship.	
0725.06	Examine the "Philosophy of Individual Worth."	
0725.07	Describe the ethical role of the healthcare provider in providing quality service in relationship to patient diversity.	
0725.08	Characterize how "prejudice" can influence the practice of the healthcare worker.	
0725.09	Determine the relationship between learning and a change in behavior.	

Influences on Behavior		Complete
Content Skill Sets		Knowledge/ Performance
0725.10	Demonstrate knowledge of factors that influence behavior.	
0725.11	Research the healthcare implications in genetic testing and gene therapy.	
0725.12	Examine ways in which the developmental process can be influenced during the prenatal and childhood period.	
0725.13	Differentiate the four dimensions of the developmental process.	
0725.14	Determine the basic stages of human growth and development.	
0725.15	Compare responsibility for behavior during childhood and the adult period.	
0725.16	Examine the five levels of human need as proposed by Maslow.	

0725.17	Determine the process by which a behavior is formed.	
---------	--	--

Theoretical Perspectives on Developmental Psychology		Complete
Content Skill Sets		Knowledge/ Performance
0725.18	Demonstrate knowledge of the major theoretical perspectives within the field of developmental psychology.	
0725.19	Define theory and interpret the role theories play in the understanding of human development.	
0725.20	Characterize Sigmund Freud, summarizing his theory of personality development.	
0725.21	Examine Erik Erickson’s theory of psychosocial development.	
0725.22	Research Lawrence Kohlberg’s psychology of moral development.	
0725.23	Assess Jean Piaget’s theory of cognitive development.	

Self-Approval and Acceptance		Complete
Content Skill Sets		Knowledge/ Performance
0725.24	Demonstrate knowledge of concepts of self-approval and acceptance and the influence each have on human behavior.	
0725.25	Determine the differences between self-concept and self-esteem.	
0725.26	Distinguish the six-step method of the problem-solving process.	
0725.27	Examine the “martyr complex.”	
0725.28	Determine the correlation between approval and disapproval in relationship to the person giving it.	
0725.29	Assess the role of conformity in acceptance.	
0725.30	Differentiate between sympathy and empathy.	

Influence of Emotions on Behavior		Complete
Content Skill Sets		Knowledge/ Performance
0725.31	Demonstrate how emotions influence behavior and how to use this knowledge in relationships with patients.	
0725.32	Examine emotions and their psychological effects.	
0725.33	Critique “stress”, “mind talk” and “stressor.”	
0725.34	Determine the essential characteristics of unconditional love.	
0725.35	Establish the meaning of “temperament.”	
0725.36	List factors that influence formation of temperament.	

Adjustments and Threats to Adjustments		Complete
Content Skill Sets		Knowledge/ Performance
0725.37	Examine potential threats to adjustment occurring during childhood, adolescence and adulthood.	

0725.38	Examine “adjustment” by comparing and contrasting a person who is well adjusted versus one who is poorly adjusted.	
0725.39	Determine steps for adapting to a new situation.	
0725.40	Identify the role of the healthcare worker in the modification of behavior in consideration of the code of ethics.	
0725.41	Differentiate six life stages in which milestones can threaten adjustments, naming one significant change occurring in each stage.	
0725.42	Recognize five long term effects of child abuse.	
0725.43	Determine three stressors that adolescents commonly experience.	
0725.44	Examine traumatic effects of discrimination, sexism, rape, and domestic violence.	

Defense Mechanisms, Inner Conflict and Frustration		Complete
Content Skill Sets		Knowledge/ Performance
0725.45	Examine behaviors resulting from defense mechanisms, inner conflict and frustration.	
0725.46	Determine the role of the healthcare provider in the recognition and reduction of behaviors resulting from defense mechanisms.	
0725.47	Examine defense mechanisms and explain their purpose.	
0725.48	Compare substance dependency and defense mechanisms.	
0725.49	Determine actions that can reduce a patient’s need for defensive behavior.	
0725.50	Assess three types of inner conflict.	
0725.51	Determine the meaning of frustration, examining underlying causes and effects.	
0725.52	Relate a general approach to dealing with frustration.	

Illness and Patient Behavior		Complete
Content Skill Sets		Knowledge/ Performance
0725.53	Identify common behavior patterns of patients.	
0725.54	Understand appropriate strategies for use in the provision of health care.	
0725.55	Examine five communication techniques that may be used when responding to patients.	
0725.56	Articulate five guidelines for becoming an effective member of the healthcare team.	

Patient Behavior and Human Relations in the Provision of Health Care		Complete
Content Skill Sets		Knowledge/ Performance
0725.57	Identify common behavior patterns of patients.	
0725.58	Examine appropriate strategies for use in the provision of health care.	
0725.59	Examine five communication techniques that may be used when responding to patients.	
0725.60	Articulate five guidelines for becoming an effective member of the healthcare team.	

Verbal and Nonverbal Communication		Complete
Content Skill Sets		Knowledge/ Performance
0725.61	Provide five examples of nonverbal behavior that convey a message.	
0725.62	Recognize and interpret nonverbal behavior.	
0725.63	Examine message discrepancy.	
0725.64	Determine why assumptions and expectations can be a source of communication breakdown.	
0725.65	Distinguish ways in which the healthcare provider can assist with the clarification of communication.	

Gains and Losses Throughout Life		Complete
Content Skill Sets		Knowledge/ Performance
0725.66	Examine the effects of losses that occur throughout the lifespan.	
0725.67	Identify effective coping skills for dealing with losses throughout the lifespan.	
0725.68	Determine the effects of suppressed emotions.	
0725.69	Discuss common reactions of survivors to various causes of death.	
0725.70	Examine appropriate responses of the healthcare provider in situations involving suicide.	
0725.71	Differentiate euthanasia, including active and passive, complete and incomplete suicide and assisted-suicide.	
0725.72	Relate seven guidelines for coping with loss and helping others to do so.	

Death, Grief and Caring for the Dying Patient		Complete
Content Skill Sets		Knowledge/ Performance
0725.73	Understand the emotional, physical and legal facts involved in the care of patients during the process of death and dying.	
0725.74	Relate how attitudes toward death have changed from past to present.	
0725.75	Define thanatology.	
0725.76	Interpret the Uniform Anatomical Gift Act.	
0725.77	Examine the following Advanced Directives: Do Not Resuscitate, Patient Self-Determination Act, Advanced Medical Directives, Living Will and Durable Power of Attorney.	
0725.78	Differentiate grief, anticipatory grief, bereavement and interment.	
0725.79	Compare the common aspects of the grief model offered by Dr. Kubler-Ross and Oates.	
0725.80	Recognize five indications of unresolved grief.	
0725.81	Establish five guidelines for assisting the family of a dying patient.	
0725.82	Characterize five fears common to those dying.	
0725.83	Relate the primary focus of palliative care.	
0725.84	Determine three reasons why patients should be informed of a terminal illness.	
0725.85	Examine five guidelines for meeting the needs of a dying patient.	

Trends in Health Care**Complete****Content Skill Sets****Knowledge/
Performance**

0725.86	Recognize the contribution of the following people: Leuwenhoek, Lister, Koch, Pasteur, Jenner, Salk, Pierre and Curie, Roentgen, Freud, Simonton, Shealy, Dossey, and Benson.	
0725.87	Determine components of the scientific model and empirical data.	
0725.88	Differentiate alternative therapy, complementary therapy and holistic care.	
0725.89	Relate the meaning "placebo effect."	
0725.90	Distinguish the physical and psychological effects of relaxation and meditation.	
0725.91	Demonstrate a technique for relaxation and meditation.	
0725.92	Recognize four possible indicators of quackery.	
0725.93	Examine the primary characteristics of a holistic approach to health care.	
0725.94	Differentiate the difference between the "D.O.", "M.D.", and "D.C."	

Course Description: In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems.

Notes: This course aligns with Project Lead the Way (PLTW) Biomedical Science. To teach PLTW courses, teachers must attend and successfully complete a course-specific training session sponsored by PLTW. Required skillsets are dispersed at that time.

Refer to policy 2520.13 Guidance Document for recommended electives

Work Habits		Complete
Content Skill Sets		Knowledge/ Performance
0727.01	Demonstrate professional work habits.	
0727.02	Demonstrate the ability to organize, implement, and troubleshoot specific tasks.	
0727.03	Demonstrate the ability to work in teams and as an individual.	

Knowledge of Biotechnology		Complete
Content Skill Sets		Knowledge/ Performance
0727.04	Describe careers in biotechnology.	

Laboratory Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
0727.05	Demonstrate competency in validating and using laboratory equipment.	
0727.06	Demonstrate competency in using computer office applications.	
0727.07	Perform basic laboratory math skills.	
0727.08	Demonstrate the ability to use the scientific method.	
0727.09	Demonstrate the principles of DNA isolation.	
0727.10	Perform electrophoresis.	
0727.11	Explain and perform aseptic technique.	
0727.12	Demonstrate the concepts of microbial culture.	

Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0727.13	Demonstrate the knowledge of bioethics.	
0727.14	Demonstrate the knowledge of professional ethics.	

Safety in the Biotechnology Laboratory		Complete
Content Skill Sets		Knowledge/ Performance
0727.15	Demonstrate general requirements for laboratory safety.	
0727.16	Identify and use personal protective equipment (PPE).	
0727.17	Demonstrate ability to implement safety protocols.	
0727.18	Follow SDS guidelines for handling, storage, and disposal of hazardous material.	
0727.19	Demonstrate knowledge of safety regulatory agencies, such as OSHA.	

Working in a Highly Regulated Environment		Complete
Content Skill Sets		Knowledge/ Performance
0727.20	Document lab activities and findings according to guidelines.	

Appropriate Use of Equipment and Instrumentation		Complete
Content Skill Sets		Knowledge/ Performance
0727.21	Use laboratory glassware.	
0727.22	Use volumetric equipment.	
0727.23	Use electrophoresis equipment.	
0727.24	Use balances.	
0727.25	Use centrifuges.	
0727.26	Use microscopes.	
0727.27	Demonstrate knowledge of temperature regulating devices (e.g., water baths, incubators).	

WEST VIRGINIA STANDARDS

Legal and Ethical Issues		Complete
Content Skill Sets		Knowledge/ Performance
0727.28	Discuss of the basics of the legal framework of the healthcare occupations.	
0727.29	Explain common practices that could result in malpractice, liability and/or negligence.	

0727.30	Identify standards of the Health Insurance Portability and Accountability Act (HIPAA).	
0727.31	Describe the purpose of Informed Consent from the patient and provider perspective.	

Human Body Systems		Complete
Content Skill Sets		Knowledge/ Performance
0727.32	Identify the major body systems and their functions.	
0727.33	Describe the purpose of Informed Consent from the patient and provider perspective.	
0727.34	Demonstrate an understanding of how body systems work together to maintain good health.	
0727.35	Identify and locate specific organs that comprise the major human body systems.	
0727.36	Describe the general structure and function of each of these organs.	
0727.37	Describe how parts of the human body systems work together to perform the job of the entire system.	
0727.38	Identify common diseases and conditions that can disrupt the functioning of cells, tissues and organs within the body.	

Medical Investigation		Complete
Content Skill Sets		Knowledge/ Performance
0727.39	Describe how evidence at a crime scene, such as blood, hair, fingerprints, and shoeprints can help forensic investigators determine what might have occurred and help identify or exonerate potential suspects.	
0727.40	Understand that evidence can be seen post-mortem through medical examination and interpret information from an autopsy report to predict the manner of death.	
0727.41	Recognize that bloodstain patterns left at a crime scene can help investigators establish the events that took place during the crime.	
0727.42	Analyze key information gathered at a simulated crime scene.	
0727.43	Describe some of the major aspects involved in determining cause of death, including the gross physical condition of a victim, the need for internal and external examination of the body, and the need for chemical and microscopic analysis of tissues and body fluids.	
0727.44	Discuss how the use of medical terminology and the involvement of many medical professionals are vital to the investigation process.	

Heart and Circulatory System		Complete
Content Skill Sets		Knowledge/ Performance
0727.45	Describe and demonstrate how a simple and a two-chambered pump works.	
0727.46	Understand and discuss that the human heart is a four-chambered living pump that provides the force needed to transport blood, both oxygenated and un-oxygenated, throughout the body without mixing the two types of blood.	
0727.47	Identify and describe the gross structures and functions of the heart.	
0727.48	Understand how a heartbeat is caused by the contraction of cardiac muscle cells that result in the movement of blood from the heart to the arteries and to the whole body.	
0727.49	Calculate heart rate as the number of heart contractions per unit of time, most commonly done as beats per minute.	
0727.50	Explain how blood pressure is a measure of the force put on the vascular walls by the blood as it is pushed by the cardiac muscles	

	through the vascular system.	
0727.51	Describe the flow of electricity through the heart and the result of this electrical pattern.	
0727.52	Indicate how heart rate, blood pressure and EKG can be used to measure a person's medical condition.	
0727.53	Describe how selected internal and external factors such as being frightened, exercise, exposure to cold and rest affect heart function including heart rate, blood pressure and EKG.	
0727.54	Demonstrate the importance of technology in biomedical sciences by using software and equipment to collect and analyze cardiovascular data.	

Blood and Circulatory System		Complete
Content Skill Sets		Knowledge/ Performance
0727.55	Explain that blood is a liquid connective tissue composed of red cells, white cells and platelets that are suspended in liquid plasma.	
0727.56	Compare and contrast the functions of red cells, white cells, platelets and erythrocytes.	
0727.57	Recognize that blood is a major transport for many substances in the body that must be replenished throughout life including hormones, gases, molecules, and nutrients.	
0727.58	Examine using a microscope and sketch red and white blood cells as well as various types of human tissue.	

Human Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
0727.59	Identify the different categories used in a food label and what they mean in relation of the nutrition of the body.	
0727.60	Compare and contrast the recommended daily values for food groups, minerals and vitamins.	
0727.61	Describe that food is made of molecules and macromolecules which in turn are made of atoms.	
0727.62	Describe the structure and function of atoms.	
0727.63	Describe how homeostasis depends upon many different chemical reactions and large organic molecules.	
0727.64	Describe the role of chemical bonding in chemical reactions and transfer of energy.	

Homeostasis		Complete
Content Skill Sets		Knowledge/ Performance
0727.65	Describe the function of macromolecules in relation to the breakdown of food and the human body.	
0727.66	Differentiate between the four classes of macromolecules in terms of their structure and function and build a model of each.	
0727.67	Explain the role of indicators in identifying chemical compounds.	
0727.68	Describe different foods that contain each kind of nutrients.	

Impacts of Disease		Complete
Content Skill Sets		Knowledge/ Performance
0727.69	Explain how many systems, living or non-living, operate using feedback mechanisms and that information put into a system causes a reaction within the system.	
0727.70	Understand that there are two different types of feedback systems, positive and negative.	
0727.71	Summarize how insulin regulates the transfer of glucose into the body cells and its role as part of the feedback system.	
0727.72	Compare Type 1 & Type 2 Diabetes.	
0727.73	Explain the major causes, symptoms, complications effects, and treatments of both Type 1 and Type 2 diabetes.	
0727.74	Understand and describe the dietary requirements and restrictions of diabetics of both types and how these changes can impact one's lifestyle in order to avoid severe and life threatening diabetic emergencies.	
0727.75	Describe healthy behaviors and actions that could help prevent the onset of Type 2 diabetes.	
0727.76	Investigate and describe the roles of Biomedical Sciences professionals related to the treatment and prevention of Diabetes.	

DNA		Complete
Content Skill Sets		Knowledge/ Performance
0727.77	Describe the structure and function of a chromosome.	
0727.78	Describe the structure and function of deoxyribonucleic acid (DNA).	
0727.79	Explain the relationship between chromosomes, DNA, and Genes.	
0727.80	Interpret the structure of a chromosome in relation to the size of a cell and the amount of DNA it contains.	
0727.81	Explain the interactions between nucleotides using DNA models.	
0727.82	Demonstrate how the genetic information in DNA molecules provides instructions for creating protein molecules and that the structure of DNA is basically the same for all living organisms.	
0727.83	Describe the importance of nucleotides in the process of creating protein molecules with the information from DNA.	
0727.84	Distinguish between the different levels of proteins and understand that a protein's shape can change depending on its environment.	
0727.85	Explain how the sequence of amino acids in a protein determines the protein's structure.	
0727.86	Describe the appropriate laboratory methods to isolate DNA from plant and animal cells.	
0727.87	Explain how restriction enzymes cut DNA.	
0727.88	Describe how gel electrophoresis separates DNA fragments.	
0727.89	Recognize that gel electrophoresis can be used to examine DNA differences between individuals.	

Impacts of Sickle Cell Disease		Complete
Content Skill Sets		Knowledge/ Performance
0727.90	Describe the difference between the appearance of normal and sickle cell blood.	
0727.91	Describe the function of hemoglobin found in red cells.	
0727.92		

0727.93	Describe the affinity of CO v. O ₂ to the Hgb of a red blood cell and the practical importance of avoiding CO (auto, home heating systems, engines for pumps brought inside).	
0727.94	Demonstrate how changes to the structure of a protein can change its ability to work properly.	
0727.95	Compare and contrast the differences between a normal and sickle red blood cell.	
0727.96	List the major symptoms and complications of sickle cell disease.	
0727.97	Research the occurrence of sickle cell disease between different countries around the world and investigate the reasons for the differences in incidence rates.	
0727.98	Investigate and discuss biomedical sciences careers responsible for the diagnosis and treatment of Sickle Cell Disease.	

Heredity and Mutation		Complete
Content Skill Sets		Knowledge/ Performance
0727.99	Describe that chromosomes each carry numerous genes that are passed along from parents to offspring through reproductive cells.	
0727.100	Identify and be able to use a karyotype to identify multiploidy and sex in an individual.	
0727.101	Compare and contrast between chromosomal and gene mutations.	
0727.102	Explain the results of insertion and deletion gene mutations and the effects that they have on the corresponding proteins produced by the gene. Or such as b-globin protein and their associations with Sickle Cell Disease.	
0727.103	Describe the process of meiosis, including independent assortment.	
0727.104	Explain how reduction division results in the formation of haploid gametes.	
0727.105	Compare and contrast mitosis and meiosis and relate to the processes of sexual reproduction and their consequences for genetic variation.	
0727.106	Analyze genotype to determine phenotype.	
0727.107	Analyze the major symptoms and complications of the sickle cell trait in relation to sickle cell disease.	
0727.108	Explain how anemia and lack of energy in a cell are related.	
0727.109	Use appropriate research techniques to obtain information on the symptoms and complications of the sickle cell trait and disease.	
0727.110	Create and analyze pedigree charts to illustrate the passage of a trait through at least three generations and calculate the probability of a trait appearing in offspring.	

Chromosomes and Mutation		Complete
Content Skill Sets		Knowledge/ Performance
0727.111	Define, identify, and analyze karyotypes to determine multiploidy and sex.	
0727.112	Explain how karyotypes are used to diagnose certain medical conditions such as Down Syndrome.	
0727.113	Explain how the substitution of a single amino acid can change a protein and indicate how it may change interactions with other proteins.	
0727.114	Identify the structure and function of chromosomes and their role in individual traits of humans.	
0727.115	Explain how specific mutations lead to specified genetic diseases.	

Cholesterol and Heart Disease

Complete

Content Skill Sets	Knowledge/ Performance
0727.116 Explain that there are different types of lipid molecules and that they have different physical properties and functions.	
0727.117 Describe how the type of bond between the carbon atoms in a fatty acid determines whether it is saturated or unsaturated with hydrogen atoms.	
0727.118 Explain that cholesterol is transported in the blood by protein complexes called high density lipoprotein (HDL) and low-density lipoprotein (LDL) and the role each of them play in the body.	
0727.119 Describe how the measurement of these complexes affects a person's risk for heart disease.	
0727.120 Describe the function of an angiogram in diagnosing blocked vessels and list medical interventions to treat blocked vessels.	
0727.121 Discuss risk factors for heart disease.	

Bacteria and Infectious Disease

Complete

Content Skill Sets	Knowledge/ Performance
0727.122 Identify the basic structures of a bacterial cell.	
0727.123 Explain that there are different types of bacteria and some cause disease while some do not.	
0727.124 Classify bacteria by shape, metabolism and reaction to gram staining.	
0727.125 Understand how antibiotics are used to treat infections and that their effectiveness depends on the type of bacteria that has caused the infection.	
0727.126 Explain that overuse of antibiotics can cause resistance in bacteria and what that means to human health.	
0727.127 Describe the immune response in relation to the introduction of antigens.	
0727.128 Isolate and examine bacterial colonies using aseptic techniques.	
0727.129 Communicate effectively the symptoms, prevalence, and treatment for bacterial infection as well as the global and social impact of an infectious disease that is caused by bacteria.	

Course Description: This course is designed to be used in conjunction with a Health Science Education course that includes a clinical specialization experience. Instructional content focuses on extending career preparation and technical skills associated with a previously selected clinical specialization. For example, Health Science Clinical Experience Skill Sets may be taught in conjunction with Clinical Specialty 1 (0789) or Clinical Specialty II (0790), PTCB Applications (0772), Medical Assistance Clinical (0732), Certified Nursing Assistant (0615), and Dental Assisting Clinical Science (0743). Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This course is designed to be used in conjunction with a Health Science Education course that includes a clinical specialization experience. Instructional content focuses on extending career preparation and technical skills associated with a previously selected clinical specialization. For example, Health Science Clinical Experience Skill Sets may be taught in conjunction with Clinical Specialty 1 (0789) or Clinical Specialty II (0790), PTCB Applications (0772), and Dental Assisting Clinical Mentoring (0745).

Career Preparation Skills		Complete
Content Skill Sets		Knowledge/ Performance
0730.01	Apply employability skills in a healthcare setting.	
0730.02	Exemplify professional characteristics.	
0730.03	Follow attendance policies of the employer or educational institution.	
0730.04	Adhere to the chain of command/lines of authority in the work setting.	
0730.05	Accept responsibility for own actions.	
0730.06	Adopt personal appearance and hygiene habits appropriate to the healthcare environment and industry expectations.	
0730.07	Engage in continuous self-assessment and career goal modification for personal and professional growth.	
0730.08	Recognize the importance of participating in continuing education.	

Technical Skills in Clinical Specialization		Complete
Content Skill Sets		Knowledge/ Performance
0730.09	Comply with the required facility regulations.	
0730.10	Correctly and safely perform procedures under the supervision of an instructor or clinical preceptor.	
0730.11	Complete documentation required of clinical specialization accurately.	
0730.12	Participate in clinical specialty evaluation process.	
0730.13	Complete classroom theory/laboratory content skill sets in the clinical specialty area at a minimum mastery level.	
0730.14	Meet requirements for certification or registration (where available) for the clinical specialty area.	

Course Description: This course is designed to be used in conjunction with EMT-B to include the necessary clinical experience for the EMT-B certification. Instructional content is focuses on extending career preparation and technical skills associated with a previously selected clinical specialization. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: 0730 Health Science Clinical Experience may be scheduled with 0732 (Emergency Services 2) to create a 2-credit block.

*The Performance Skills for Emergency Services were adapted and condensed from the U S Department of Transportation, National Emergency Medical Services Education: Emergency Medical Technician Instructional Guidelines.

[National Registry of Emergency Medical Technicians \(nremt.org\)](http://www.nremt.org)

*These educational Content Skills also meet the West Virginia Office of Emergency Medical Systems requirements. See <http://www.wvoems.org>.

*National Emergency Medical Standards, Emergency Medical Responder see <https://www.ems.gov/pdf/811077b.pdf>

* The Performance Skills for Emergency Services I-meet the requirement for First Responder. The first responder is the first person to arrive at the scene who has emergency medical training and the first designated level of professional emergency medical care as outlined by the National EMS education and practice blueprint. Skills taught to a First Responder include: Assessment for life-threatening conditions in both medical and trauma patients, provision of initial airway care, assistance with breathing, provision of CPR, control of bleeding, and stabilization of spinal and extremity injuries. In addition, the West Virginia Office of Emergency Services requires successful completion of the hazardous materials awareness training meeting the Department of Labor, Occupational Safety and Health Administration (OSHA) 1910.120 requirements. Emergency Services II Applies fundamental knowledge of the EMS system, safety/well-being of the EMT, and medical/legal and ethical issues to the provision of emergency care. *The Performance Skills for Emergency Services I-EMR were adapted and condensed from the U S Department of Transportation, National Emergency Medical Services Education: Emergency Medical Technician Instructional Guidelines. Emergency Services II builds upon knowledge obtained in Emergency Services I.

Refer to policy 2520.13 Guidance Document for recommended electives

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0732.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0732.02	Identify the impact of quality in healthcare facilities as well as the responsibilities of users of the healthcare system (e.g., healthcare workers maintenance of personal wellness).	

Healthcare Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0732.03	Describe how ethical decision-making influences the care of clients.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0732.04	Explain the laws (e.g., liability, influence on client care).	
0732.05	Explore legal issues such as sexual harassment, wrongful discharge, negligence, malpractice and violence in the workplace (e.g., abuse, neglect, exploitation, and the Vulnerable Adults law).	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0732.06	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0732.07	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper handwashing, and gloving procedures).	
0732.08	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0732.09	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

WEST VIRGINIA STANDARDS

Workforce Safety and Wellness		Complete
Content Skill Sets		Knowledge/ Performance
0732.10	Describe health habits that promote physical and mental well-being.	
0732.11	Demonstrate/determine the proper personal protective equipment to prevent exposure to infectious disease.	
0732.12	Demonstrate proper procedures for hand washing and using alcohol-based hand cleaners.	
0732.13	Discuss the health concerns related to exposure to hepatitis B, hepatitis C, tuberculosis and HIV/AIDS.	

0732.14	Access the centers for disease control website to obtain updated information on diseases of concern to EMS providers.	
0732.15	Explain the essential provisions of OSHA, CDC, and the Ryan White CARE act as they relate to infection control in EMS.	
0732.16	Describe the indication for use of an N-95 or HEPA respirator.	
0732.17	Describe the purpose of the tuberculin skin test.	
0732.18	Give examples of common stressors in EMS work.	
0732.19	Describe and differentiate between the stages of the stress response including the effects of each stage on the body.	
0732.20	List lifestyle changes that can be made to manage stress.	
0732.21	Explain the purpose of critical incident stress management.	
0732.22	Given a scenario involving death or dying, recognize a patient's or family member's reaction to death and dying.	
0732.23	Given a scenario involving death or dying, use effective techniques for interacting with the patient and family members.	
0732.24	Outline proper responses to incidents including hazardous material incidents, terrorist incidents, rescue operations, and violence.	
0732.25	Given a scenario of an emergency response involving a safety threat, describe actions you should take to protect yourself and other EMS providers.	
0732.26	Demonstrate/promote safety on EMS calls.	

Communication and Documentation		Complete
Content Skill Sets		Knowledge/ Performance
0732.27	Master radio procedure used at various stages of the EMS call.	
0732.28	Demonstrate delivery and format of a radio report to the hospital.	
0732.29	Prepare and deliver a verbal hand-off report to the hospital.	
0732.30	Develop communication skills used when interacting with other members of the health care team.	
0732.31	Develop communication skills used when interacting with the patient.	
0732.32	Develop components and procedures for the written prehospital care report.	
0732.33	Understand and demonstrate legal aspects and benefits of documentation.	
0732.37	Demonstrate documenting concerns in patient refusal.	
0732.38	Using a variety of scenarios demonstrate giving an organized, complete, concise report of pertinent patient information when giving a verbal report.	
0732.39	Demonstrate principles and techniques of effective communication.	
0732.40	Adapt communication principles for effective interaction with patients of various ages and cultures.	
0732.41	Understand legal issues and special situations associated with documentation.	

Medical, Legal and Ethical Issues		Complete
Content Skill Sets		Knowledge/ Performance
0732.42	Describe and demonstrate scope of practice of an EMT.	
0732.43	Differentiate between scope of practice and standard of care.	
0732.44	When given a variety of scenarios, determine which type of patient consent applies including refusal of care, and do not resuscitate	

	orders.	
0732.45	When given a variety of scenarios recognize/describe negligence and duty to act.	
0732.46	Explain the purpose of good Samaritan laws.	
0732.47	Identify situations that would constitute a breach of patient confidentiality.	
0732.48	Recognize medical identification devices and organ donor status.	
0732.49	List items that may be considered evidence at a crime scene, and ways to minimize your impact on evidence while caring for your patient.	
0732.50	Determine situations that may legally require reporting to authorities.	
0732.51	Given a scenario involving an ethical challenge, decide the most appropriate response for an EMT.	

Patient Evacuation and Transfer		Complete
Content Skill Sets		Knowledge/ Performance
0732.52	Demonstrate good body mechanics while lifting and moving patients.	
0732.53	Protect patients by using urgent, and non-urgent moves.	

Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0732.54	Apply fundamental knowledge of the Emergency Medical Services System.	
0732.55	Recognize the NHTSA Technical Assistance Program Assessment Standards: <ul style="list-style-type: none"> • Regulation and policy • Resource management • Human Resources and Training • Transportation • Facilities 	
0732.56	Describe the access to Emergency Medical Services.	
0732.57	Understand the educational level of EMS licensure.	
0732.58	Describe the authorization to practice: <ul style="list-style-type: none"> • Legislative decision on scope of practice • State EMS office oversight • Medical oversight (clinical protocols, Quality Improvement, Administrative) • Local credentialing • Administrative • Employer policies and procedures 	

Medical Terminology and Anatomy

Medical Terminology and Anatomy		Complete
Content Skill Sets		Knowledge/ Performance
0732.59	Apply common prefixes, suffixes and roots to determine the meaning of medical terms.	
0732.60	Recognize and use acronyms and abbreviations commonly used in EMS.	
0732.61	Use anatomical terms of position and direction to describe the location of body structures and position of the body.	
0732.62	Utilize topographical anatomical landmarks as points of reference.	
0732.63	Describe and recognize the structures and functions of each of the body systems.	
0732.64	Musculoskeletal, respiratory, cardiovascular, nervous, digestive, integumentary, endocrine, renal, reproductive.	
0732.65	Describe the differences in the respiratory anatomy of children as compared to adults.	
0732.66	Given a variety of scenarios apply understanding of anatomy and physiology to explain the functions of the life support chain.	
0732.67	Describe the roles of water, glucose and oxygen in the cell.	
0732.68	Summarize conditions that can threaten cardiopulmonary function.	
0732.69	Explain how impaired cardiopulmonary function affect the body.	
0732.70	Discuss the mechanisms the body uses to compensate for impaired cardiopulmonary function.	
0732.71	Identify signs and symptoms that indicate the body is attempting to compensate for impaired cardiopulmonary function.	
0732.72	Describe ways/indications in which the body's: <ul style="list-style-type: none">• fluid balance can become disrupted• nervous system may be impaired• endocrine dysfunction• digestive system dysfunction• immune system dysfunction	

Life Span Development

Life Span Development		Complete
Content Skill Sets		Knowledge/ Performance
0732.73	Describe physical and physiological characteristics, including normal vital signs for the following age groups: <ul style="list-style-type: none">• infant• toddler• preschool age• school age• adolescent• early adult• middle adult• late adult	
0732.74	Describe psychosocial characteristics and concerns of individuals at each stage of life span development.	
0732.75	Given a variety of scenarios, utilize the knowledge of physical, physiological, and psychosocial development to anticipate the needs and concerns of patients of all ages.	

Airway Management, Respiration and Artificial Ventilation		Complete
Content Skill Sets		Knowledge/ Performance
0732.76	Apply knowledge of general anatomy and physiology to patient assessment and management in order to assure a patient airway, adequate mechanical ventilation and respiration for patients of all ages.	
0732.77	Describe airway pathophysiology.	
0732.78	Recognize the sounds of a partially obstructed airway.	
0732.79	Open airways.	
0732.80	Demonstrate the use of airway adjuncts.	
0732.81	Demonstrate suctioning.	
0732.82	Describe and demonstrate how to keep an airway open.	
0732.83	Explain the physiological relationship between assessing and maintaining an open airway, assessing and ensuring adequate ventilation, and assessing and maintaining adequate circulation.	
0732.84	Describe the mechanics of ventilation.	
0732.85	Explain mechanisms that control the depth and rate of ventilation.	
0732.86	Explain the relationships between tidal volume, respiratory rate, minute volume, dead air space, and alveolar ventilation.	
0732.87	Describe the physiology of external and internal respiration.	
0732.88	Given a variety of scenarios, differentiate between patients who require artificial ventilation, those who do not, those who require administration of supplemental oxygen and are at risk for failure of the cardiopulmonary system.	
0732.89	Demonstrate the following techniques of artificial respiration for pediatric and adult medical and trauma patients: <ul style="list-style-type: none"> • mouth to mask • two rescuer bag-valve mask (BVM) • one rescuer BVM • flow restricted, oxygen powered ventilation device • automatic transport ventilator (local protocol) 	
0732.90	Demonstrate assessment of the adequacy of artificial ventilations.	
0732.91	Demonstrate the application of cricoid pressure.	
0732.92	Demonstrate administration of oxygen by: <ul style="list-style-type: none"> • nonrebreather mask • nasal cannula 	
0732.93	Describe the purpose and use of partial rebreather masks, venture masks and tracheostomy masks.	
0732.94	Demonstrate safe transport, storage and use of oxygen.	

Patient Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0732.95	Apply scene information and patient assessment findings (scene size-up, primary and secondary assessment, patient history, and	

	reassessment) to guide emergency management.	
0732.96	Explain the ongoing nature of scene size-up beyond the initial moments at the scene.	
0732.97	Given a scene-arrival scenario, list several examples of potential hazards for which the EMT should actively search.	
0732.98	Describe and explain considerations in establishing a danger zone at the scene of a vehicle collision.	
0732.99	Recognize indication of possible crime scenes and possible violence.	
0732.100	Given a variety of scenarios perform a scene size-up and determine: <ul style="list-style-type: none"> • mechanism of injury or nature of illness • recognizing potential dangers • make decisions about body substance isolation • the number of patients • the need for additional resources 	
0732.101	Demonstrate knowledge of the primary assessment including: <ul style="list-style-type: none"> • decide on the approach to the primary assessment • manual stabilization of the head and neck • assessment of mental status • ABC's as part of the assessment process • how to make a priority decision 	
0732.102	Given several scenarios do the following: <ul style="list-style-type: none"> • form a general impression • determine the chief complaint • determine the patient's mental status • assess the airway • assess breathing • assess circulation 	
0732.103	Determine the patient priority for transport.	
0732.104	Recognize findings that require immediate intervention.	
0732.105	Recognize mechanism of injury or nature of illness and level of responsiveness.	
0732.106	Determine how the approach to the assessment varies depending on patients age.	
0732.107	Obtain vital signs, including pulse, respirations, blood pressure, skin, temperature and pupils.	
0732.108	Document vital signs on a prehospital care report.	
0732.109	Use various monitoring devices.	
0732.110	Integrate vital signs into the patient assessment process according to patient's condition and the situation.	
0732.111	Explain the use of vital signs in patient care decision making.	
0732.112	Demonstrate assessment of: <ul style="list-style-type: none"> • pulse • respirations • skin • pupils 	

	<ul style="list-style-type: none"> • blood pressure • oxygen saturation • blood glucose
0732.113	Integrate assessment of mental status and ongoing primary assessment while obtaining vital signs.
0732.114	Differentiate between vital signs that are within expected ranges for a given patient and those that are not.
0732.115	Compare and contrast techniques of assessment and expected vital sign values for pediatric and adult.
0732.116	Describe the difference between assessment procedures for a trauma patient with no significant mechanism or injury and for a patient with a significant mechanism or injury.
0732.117	Conduct a history of the present illness for a trauma patient.
0732.118	Perform a physical exam for a trauma patient.
0732.119	Obtain a past medical history for a trauma patient.
0732.120	Perform a rapid trauma assessment.
0732.121	Know when and how to perform a detailed physical examination for a trauma patient.
0732.122	Conduct a systematic secondary assessment of an unstable or potentially unstable trauma patient or patient with a significant mechanism or injury.
0732.123	Given a variety of scenarios: <ul style="list-style-type: none"> • recognize situations where requesting advanced life support personnel to assist with the management of a trauma patient • incorporate a detailed physical examination of the unstable or potentially unstable trauma patient
0732.124	Compare and contrast assessment procedures for a responsive medical patient and for an unresponsive medical patient.
0732.125	Perform a secondary assessment for a responsive medical patient.
0732.126	Collect a relevant past medical history and a systematic history of the present illness.
0732.127	Adapt the secondary assessment process to specific patient complaints.
0732.128	Explain the importance of collecting baseline vital signs in an unresponsive medical patient.
0732.129	Identify other sources of patient information for the unresponsive or uncooperative patient.
0732.130	Perform reassessment.
0732.131	Recognize significance of changes in vital signs over time.
0732.132	Compare and contrast reassessments for stable versus unstable patients.
0732.133	Using a variety of scenarios:
0732.134	Assign meaning to trends in patient's condition over time.
0732.135	Recognize both obvious and subtle changes in the patient's condition.
0732.136	Adapt reassessment process and frequency of reassessment based on patients' conditions.

Critical Thinking and Decision Making

Critical Thinking and Decision Making		Complete
Content Skill Sets		Knowledge/ Performance
0732.137	Initiate basic interventions based on assessment findings intended to mitigate the emergency and provide limited symptom relief while providing access to definitive care.	
0732.138	Understand EMT diagnosis.	

0732.139	Develop the role of critical thinking in EMS.	
0732.140	Understand how an EMT can improve critical thinking skills.	

General Pharmacology		Complete
Content Skill Sets		Knowledge/ Performance
0732.141	Demonstrate knowledge of medication on ambulance and prescribed medications.	
0732.142	Use critical decision making related to medication administration for a medical emergency.	
0732.143	Understand/describe medication safety.	
0732.144	Demonstrate knowledge of forms of medication, routes of medication administration.	
0732.145	Describe the following information about medications an EMT may administer/assist a patient with: <ul style="list-style-type: none"> • drug name (generic and trade) • drug actions • contraindications • side effects • dose • route • prescribing information 	
0732.146	Apply fundamental knowledge of assist/administering medications in the following situations: <ul style="list-style-type: none"> • assisting patients in taking prescribed medications • administering medications • taking medical direction (offline, online) 	
0732.147	Demonstrate competency of medication administration safety, including the five rights of medication administration.	
0732.148	Describe and demonstrate the characteristics of the oral, sublingual, inhaled, intravenous, intramuscular, subcutaneous and endotracheal routes of administration.	
0732.149	Identify special considerations in medication administration related to patients ages and weights.	
0732.150	Reassess: <ul style="list-style-type: none"> • data indications for medications, action • action-medication administered • response-effect of medication 	
0732.151	Explain the importance's of accurate documentation of drug administration and patient reassessment.	
0732.152	Discuss steps an EMT may take in assisting with IV therapy.	
0732.153	Recall facts and apply information about medications an EMT may administer: <ul style="list-style-type: none"> • aspirin • oral glucose • oxygen 	
0732.154	Recall facts and apply information about medications an EMT may assist the patient to administer: <ul style="list-style-type: none"> • inhaled bronchodilators 	

<ul style="list-style-type: none"> • epinephrine • nitroglycerin 	
--	--

Respiratory Emergencies		Complete
Content Skill Sets		Knowledge/ Performance
0732.155	Identify basic structures and functions of the respiratory system: <ul style="list-style-type: none"> • upper airway tract, lower airway tract • chest care, ribs, muscles, pleura, phrenic nerve innervation • Vascular structures which support respiration • Cellular function, respiratory regulation, respiration/pulmonary ventilation 	
0732.156	Describe the physiology of respiration: <ul style="list-style-type: none"> • pulmonary ventilation • oxygenation • respiration 	
0732.157	Describe the pathophysiology of respiration: <ul style="list-style-type: none"> • pulmonary ventilation • oxygenation • circulation compromise • cells 	
0732.158	Differentiate between adequate and inadequate breathing: <ul style="list-style-type: none"> • Internal respiration • Respiration, Ventilation or oxygenation problems and how they relate to each other • Assessment of Ventilation (signs of adequate and inadequate ventilation) • Assessment of respiration 	
0732.159	Demonstrate management of adequate and inadequate respiration: <ul style="list-style-type: none"> • assure adequate airway • administer supplemental oxygen therapy (ambient air, oxygen sources, oxygen delivery devices, assisting ventilation in reparatory distress/failure) 	
0732.160	Explain techniques of assuring a patent airway (manual airway maneuvers, mechanical airway devices, relief of foreign body airway obstruction, upper airway suctioning).	
0732.161	Demonstrate use and purpose of artificial ventilation devices: <ul style="list-style-type: none"> • bag-valve-mask (advantages and disadvantages) • manually triggered ventilation device (advantages and disadvantages) • automatic transport ventilator/resuscitator (advantages and disadvantages) 	
0732.162	Demonstrate ventilation of an apneic patient.	
0732.163	Demonstrate ventilation of a protected airway.	
0732.164	Differentiate between:	

<ul style="list-style-type: none"> • normal and positive pressure ventilation • air movement • blood movement • airway wall pressure • esophageal opening pressure • over ventilation 	
0732.165 Differentiate age related care for geriatric and pediatric respiratory compromised patients.	

Patient Assessment-Scene		Complete
Content Skill Sets		Knowledge/ Performance
0732.166 Apply information related to scene safety: <ul style="list-style-type: none"> • identify common scene hazards (environmental, hazardous substances, violence, rescue) • Evaluation of the scene 		
0732.167 Identify components of scene management and the impact of the environment on patient care (Medical, Trauma, Environmental considerations).		
0732.168 Demonstrate addressing hazards: <ul style="list-style-type: none"> • protect the patient • protect the bystanders • request resources • scan the scene for information related to mechanism of injury, nature of illness 		
0732.169 Assess the scene for violence and follow protocols.		
0732.170 Recognize the need for additional or specialized resources: (only specialized trainee responders use the specialized equipment) <ul style="list-style-type: none"> • chemical and biological suits • rescue equipment necessary for difficult extrications • Ascent or descent gear 		
0732.171 demonstrate understanding of standard precautions as it relates to the scene.		
0732.172 describe how to handle a scene with multiple-patient situations.		

Patient Assessment- Primary Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0732.173 Demonstrate an initial general impression based upon the patients age-appropriate appearance.		
0732.174 Assess level of consciousness (speaking to patient and assessing patient response).		
0732.175 Assess airway status (unresponsive patients, trauma patients, assess responsive patients airway patency).		
0732.176 Assess breathing status for a responsive and unresponsive patient.		
0732.177 Assess circulatory status (pulse, bleeding perfusion).		

0732.178	Identify life threats.	
0732.179	Assess vital functions.	
0732.180	Integrate treatment/procedures needed to preserve life.	
0732.181	Evaluate priority of patient care and transport.	

Patient Assessment- History Taking		Complete
Content Skill Sets		Knowledge/ Performance
0732.182	Investigate the chief complaint: <ul style="list-style-type: none"> consider factors that influence the data collection obtain the history of the present illness 	
0732.183	Identify components of a patient history: <ul style="list-style-type: none"> statistical and demographic information obtain and document past medical history obtain and document current health status 	
0732.184	Demonstrate techniques of history taking: <ul style="list-style-type: none"> setting the stage learning about the present illness determine chief complaint history of present illness assess past medical history (pertinent to the medical event) assess current health status 	
0732.185	Understand the standardized approach to history taking.	
0732.186	Demonstrate knowledge of the SAMPLE history taking method.	
0732.187	Demonstrate knowledge of the OPQRST history taking method.	
0732.188	Understand how to take a history of sensitive topics (alcohol and drugs, physical abuse, violence, sexual history).	
0732.189	Using a variety of scenarios demonstrate taking a history on patients that are silent, over talkative, have multiple symptoms, anxious, angry and hostile, intoxicated, crying, depressed, demonstrating inappropriate behavior, limited cognitive ability, have a language barrier, hearing problems and visual impairment.	
0732.190	Use critical decision making to recognize when to locate a friend or family member to gather data.	
0732.191	Recognize age related variation for pediatric and geriatric assessment and management.	

Patient Assessment- Secondary Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0732.192	Demonstrate knowledge of the techniques of physical examination: <ul style="list-style-type: none"> general approach respiratory system (chest shape, symmetry, respiratory effort, auscultation) 	

	<ul style="list-style-type: none"> • cardiovascular system (pulse, perfusion) • neurological system (mental status-appearance behavior, speech and language, mood, thought and perceptions, memory and attention) • musculoskeletal system (pelvic region, lower extremities, upper extremities, back) • all anatomical regions (head, neck, chest) • abdomen (patient position, shape/size, palpating, physical findings) 	
0732.193	Demonstrate knowledge of patient assessment monitoring devices: <ul style="list-style-type: none"> • pulse oximetry • non-invasive blood pressure • other monitoring devices 	
0732.194	Use critical decision making related to patient reassessment: <ul style="list-style-type: none"> • how and when to reassess • performed at regular intervals • reassessment includes primary assessment, vital signs, chief complaint, interventions • compare the reassessment to baseline patient status • repeat vital signs as necessary 	
0732.195	Constantly reassess chief complaint or major injury, assess pain/comfort level.	
0732.196	Reassess the effectiveness of each intervention and consider the need for new interventions or modification to care.	

Medical Overview		Complete
Content Skill Sets		Knowledge/ Performance
0732.197	Identify and demonstrate assessment factors.	
0732.198	Describe the major components of the patient assessment.	
0732.199	Demonstrate assessing baseline vital signs.	
0732.200	Complete a secondary assessment.	
0732.201	Recognize when to reassess and continually assess patients.	

Medicine- Neurology		Complete
Content Skill Sets		Knowledge/ Performance
0732.202	Demonstrate knowledge related to the neurological system.	
0732.203	Review anatomy and function of the Brain and Cerebral Blood Vessels.	
0732.204	Assess symptoms and signs r/t neurological system.	
0732.205	Understand the stroke alert criteria.	
0732.206	Demonstrate how to manage a patient with stroke symptoms and findings.	
0732.207	Demonstrate scene safety and standard precautions r/t neurological symptoms and findings.	
0732.208	Recognize findings and symptoms related to TIA, seizures, headache.	

0732.209	Differentiate between age related variations for pediatric and geriatric assessment and management.	
0732.210	Understand and utilize communication and documentation r/t neurological findings and symptoms.	
0732.211	Understand transport decisions r/t neurological findings and symptoms.	

Medicine-Abdominal and Gastrointestinal Disorders		Complete
Content Skill Sets		Knowledge/ Performance
0732.212	Define acute abdomen.	
0732.213	Describe the location, structure and function of the organs of the abdominopelvic cavity.	
0732.214	Explain the origins and characteristics of visceral, parietal and tearing pain.	
0732.215	Associate areas of referred pain with the likely origins of the pains.	
0732.216	Recognize the common signs and symptoms of abdominal conditions, including appendicitis, peritonitis, cholecystitis, pancreatitis, ulcers, abdominal aortic aneurysm, hernia and renal colic.	
0732.217	Discuss the type of abdominal pain that may indicate cardiac involvement.	
0732.218	Discuss appropriate assessment management of patient complaining of abdominal pain.	
0732.219	Using a variety of scenarios elicit key information in the history of patients complaining of abdominal pain, including history specific to female patient.	
0732.220	Consider age related variations for pediatric and geriatric assessment and management.	
0732.221	Describe the anatomic and physiologic differences in children.	
0732.222	Describe the pathophysiology of pediatric abdominal emergencies.	
0732.223	Using a variety of scenarios elicit key information in the history, assessment, and demonstrate management of pediatric patients with abdominal emergencies.	
0732.224	Describe the variances in geriatric patient's presentation with an abdominal condition/ emergency.	
0732.225	Understand transport decisions r/t abdominal conditions/emergencies findings and symptoms.	

Medicine-Immunology		Complete
Content Skill Sets		Knowledge/ Performance
0732.226	Define allergic reaction and anaphylaxis.	
0732.227	Define risk factors and list common allergens.	
0732.228	Describe the basic immune system's response to allergens.	
0732.229	Understand the fundamental pathophysiology of immune system's response to allergens.	
0732.230	Recognize the signs and symptoms of allergic reactions.	
0732.231	Prioritize the steps in assessment and management of patients with allergic and anaphylactic reactions.	
0732.232	Recognize the indications for administering and assisting a patient in the use of an epinephrine auto-injector.	
0732.233	Describe the desired effects and side effects associated with the administration of epinephrine.	
0732.234	Demonstrate administration of epinephrine by auto-injector.	
0732.235	Describe/demonstrate considerations in reassessment of patients with allergic and anaphylactic reactions.	

Medicine-Endocrine Disorders		Complete
Content Skill Sets		Knowledge/ Performance
0732.236	Define diabetes types I and II, hypoglycemia, hyperglycemia, diabetic ketosis.	
0732.237	Research the anatomy and function of the pancreas.	
0732.238	Describe the pathophysiology of diabetes and diabetic emergencies.	
0732.239	Describe a general assessment of a diabetic patient and the different findings and symptoms that maybe present.	
0732.240	Identify and describe management of diabetes and medications used to treat endocrine disorders.	
0732.241	Consider age-related variations for pediatric and geriatric assessment and management of endocrine disorders.	
0732.242	Demonstrate communication and documentation with a patient with an endocrine disorder emergency.	
0732.243	Understand transport decisions-rapid transport for altered level of consciousness.	

Medicine-Psychiatric		Complete
Content Skill Sets		Knowledge/ Performance
0732.244	Define behavior, psychiatric disorder, behavioral emergency.	
0732.245	Discuss the epidemiology of psychiatric disorders.	
0732.246	Discuss assessment of a patient who appears to be suffering from a behavior or psychiatric emergency.	
0732.247	Describe behavioral change and factors that may alter a patients' behavior.	
0732.248	For a patient whose abnormal behavior appears to be cause by stress, discuss techniques to calm the patient and gain his cooperation.	
0732.249	Discuss assessment of a patient who appears to be suffering from a behavioral or psychiatric emergency.	
0732.250	Discuss the steps in managing a patient presenting with a behavioral or psychiatric emergency.	
0732.251	Describe factors often associated with risk of suicide.	
0732.252	Discuss care for a patient who is at risk for potential or attempted suicide.	
0732.253	Recognize warning signs that a patient may become violent.	
0732.254	Explain consideration in using force and restraint when managing behavioral emergency calls.	
0732.255	Explain considerations when faced with a behavioral emergency patient who refuses treatment and transport.	
0732.256	Consider age related variation for pediatric and geriatric assessment and management.	

Medicine-Cardiovascular		Complete
Content Skill Sets		Knowledge/ Performance
0732.257	Describe the anatomy and physiology of the cardiovascular system.	
0732.258	Describe the pathophysiology of cardiac compromise.	
0732.259	Discuss the primary assessment of a patient with cardiac signs and symptoms.	
0732.260	Complete a history of a patient experiencing cardiac signs and symptoms.	
0732.261	Research and discuss the management of cardiac signs and symptoms (refer to the current American Heart Association guidelines).	

0732.262	Define acute coronary syndrome and discuss its most common signs and symptoms.	
0732.263	Define hypertensive emergencies and discuss the most common signs and symptoms.	
0732.264	Define cardiogenic shock and discuss the most common signs and symptoms.	
0732.265	Discuss the following conditions and how each may lead to a cardiac emergency: <ul style="list-style-type: none"> • Coronary artery disease • aneurysm • electric malfunctions of the heart • mechanical malfunctions of the heart • angina pectoris • acute myocardial infarction • congestive heart failure 	
0732.266	Discuss the following factors in the chain of survival and how each may contribute to patient survival of the cardiac arrest: <ul style="list-style-type: none"> • immediate recognition and activation • early cardiopulmonary resuscitation • rapid defibrillation • effective advanced life support • integrated post-cardiac arrest care 	
0732.267	List the skills necessary for EMT to manage a patient in cardiac arrest.	
0732.268	Discuss types of automated external defibrillators and how AEDs work.	
0732.269	Discuss the effective coordinator of CPR and AED for a patient in cardiac arrest.	
0732.270	Discuss the purpose and use of mechanical CPR devices.	
0732.270	Discuss the following pharmacological agents used in cardiovascular emergencies: <ul style="list-style-type: none"> • Aspirin • Nitroglycerin 	
0732.271	Comprehend the role of medical oversight in medication administration.	
0732.272	Discuss patient assisted medication administration.	
0732.273	Using a variety of scenarios related to cardiovascular emergencies, document care provided.	
0732.274	Consider age-related variation for pediatric and geriatric patients for assessment and management of cardiac compromise.	

Medicine-Toxicology		Complete
Content Skill Sets		Knowledge/ Performance
0732.275	Define toxicology, poisoning, overdose, national Poison Control Center.	
0732.276	Identify ways in which poisons can enter the body.	
0732.277	Provide examples, assessment findings, and general management considerations of poisoning by ingestions, inhalation, injection, and absorption.	
0732.278	Identify common causative agents, assessment findings, symptoms, and management of opiate/narcotic overdose.	
0732.279	Describe alcoholism including long-term effects.	

0732.280	Identify assessment findings, symptoms, and management of alcohol abuse and withdrawal.	
0732.281	Identify common causative agents, assessment findings, symptoms and management of cannabis, hallucinogens, stimulants, barbiturates/sedatives/hypnotics.	
0732.282	Explain potential dangers to EMS providers and others at scenes where poisoning, alcohol abuse, or substance abuse is involved.	
0732.283	Recognize common causative agents, assessment findings and symptoms of pesticides, chemicals, household clearing poisonings and poisonous plants.	
0732.284	Collect key elements in the history of a patient who has been poisoned.	
0732.285	Analyze management techniques of patients who have ingested poisonings, absorbed poisons through the skin and have inhaled poisons emergencies.	
0732.286	Describe the used of activated charcoal in the management of ingested poisons.	
0732.287	Explain common cause of medication overdoses (cardiac, psychiatric, non-prescriptions pain medications, other).	
0732.288	Analyze patient assessment findings and symptoms for patients with medication overdose.	
0732.289	Given a variety of scenarios, develop a treatment plan for patients with emergencies related to alcohol and substance abuse.	
0732.290	Employ management for a patient with medication overdose.	
0732.291	Illustrate general treatment modalities for poisonings (scene safety, standard precautions and decontamination, airway control, ventilation and oxygenation, circulation, use of activated charcoal).	
0732.292	Consider age-related variations for pediatric and geriatric assessment management.	
0732.293	Utilize communication and documentation techniques for patients with toxicological emergencies.	
0732.294	Justify transport decisions related to patients with toxicological emergencies.	

Medicine-Respiratory		Complete
Content Skill Sets		Knowledge/ Performance
0732.295	Describe the anatomy and physiology of respiratory system.	
0732.296	Differentiate between adequate and inadequate breathing based on the rate, rhythm and quality of breathing.	
0732.297	Discuss differences between adult and pediatric airways and respiratory systems.	
0732.298	Recognize signs of inadequate breathing in pediatric patients.	
0732.299	Provide supplemental oxygen and assisted ventilation as needed for patients with inadequate breathing.	
0732.300	Analyze assessment findings, symptoms and management for respiratory conditions (respiratory distress).	
0732.301	Analyze the following respiratory conditions to define causes, assessment findings, symptoms, complications, specific prehospital management and transport decisions: <ul style="list-style-type: none"> • asthma • pulmonary edema • chronic obstructive pulmonary disease • pneumonia • spontaneous pneumothorax • pulmonary embolism • epiglottitis 	

	<ul style="list-style-type: none"> • pertussis • cystic fibrosis • environmental/industrial exposure/toxic gasses • viral respiratory infections 	
0732.302	Assess the effectiveness of artificial ventilation.	
0732.303	Recognize and assess the patient with difficulty breathing.	
0732.304	Provide care for the patient with difficulty breathing.	
0732.305	Recognize the indication contraindications, risks and side effects of CPAP.	
0732.306	Summarize the indications/contraindications, actions, side effects, dose, route and medical control role involving metered-dose inhaler and small volume nebulizers.	
0732.307	Assist a patient with administration of a prescribe bronchodilator by inhaler or small volume nebulizer as permitted by medical direction.	
0732.308	Demonstrate simulated communication and documentation related to care for patients with respiratory emergencies.	
0732.309	Consider age-related variations for pediatric and geriatric assessment and management of respiratory emergencies.	

Medicine-Hematology		Complete
Content Skill Sets		Knowledge/ Performance
0732.310	Identify anatomy and physiology of blood, plasma, blood-forming organs.	
0732.311	Identify medications that can interfere with blood clotting.	
0732.312	Explain the pathophysiology and complications of sickle cell anemia.	
0732.313	Discuss assessment and management for patients with emergencies related to sickle cell anemia/sickle cell crisis.	
0732.314	Describe clotting disorders.	
0732.315	Consider age related variations for pediatric and geriatric patients with a hematologic emergency.	

Medicine-Genitourinary/Renal		Complete
Content Skill Sets		Knowledge/ Performance
0732.316	Identify and describe the structure and function of the renal system.	
0732.317	Explain the pathophysiology of kidney failure and development of kidney stones.	
0732.318	Explain the purpose of hemodialysis and peritoneal dialysis.	
0732.319	Compare and contrast types of dialysis (hemodialysis and peritoneal).	
0732.320	Identify special considerations for hemodialysis patients.	
0732.321	Analyze complications/adverse effects of dialysis.	
0732.322	Recognize patients with complications of end stage renal disease, dialysis, signs and symptoms of missed dialysis treatments.	
0732.323	Identify management techniques for a patient with complications of end-stage renal disease, dialysis and missed dialysis.	
0732.324	Explain the special considerations for patients who have received a kidney transplant.	
0732.325	Demonstrate urinary catheter management.	

0732.326	Consider age-related variations in pediatric and geriatric patients with renal disease.	
0732.327	Demonstrate communication and documentation related to patients with renal disease.	
0732.328	Summarize transport decisions made related to patients with renal disease.	

Medicine-Gynecology		Complete
Content Skill Sets		Knowledge/ Performance
0732.329	Identify the anatomy of the female reproductive system and fetal development.	
0732.330	Explain the physiology of pregnancy.	
0732.331	Classify and describe assessment findings related to abdominal pain, vaginal pain, vaginal bleeding, vaginal discharge, fever, nausea and vomiting, syncope.	
0732.332	Identify general management techniques related to gynecological emergencies.	
0732.333	Define and list the causes, risk factors, assessment findings and management of the following specific gynecological emergencies: <ul style="list-style-type: none"> • vaginal bleeding • sexual assault-legal issues • infections -pelvic inflammatory disease • sexually transmitted diseases 	
0732.334	Consider age-related variations for pediatric and geriatric assessment and management of gynecological emergencies.	
0732.335	Explain and describe measures to prevent or correct supine hypotensive syndrome.	
0732.336	Describe the 3 stages of labor.	
0732.337	Discuss the assessment of a patient in labor including history and physical examination.	
0732.338	Discuss how to decide if delivery is imminent or if the patient in labor should be transported to a medical facility for delivery.	
0732.339	State finding that may indicate the need for neonatal resuscitation.	
0732.340	Discuss the role of the EMT in childbirth, including preparation and delivery.	
0732.341	Describe the normal steps in care of the neonate.	
0732.342	Explain the indications and procedures for neonatal resuscitation, following the inverted pyramid order of priorities.	
0732.343	Discuss after-delivery care of the mother, including delivery of the placenta, controlling vaginal bleeding and providing comfort to the mother.	
0732.344	Describe and discuss the special care required for complications of delivery including: <ul style="list-style-type: none"> • breech presentation • limb presentation • prolapsed umbilical cord • multiple birth • premature birth • meconium • describe and discuss the special care required for emergencies in pregnancy including: <ul style="list-style-type: none"> • excessive pre-birth bleeding • ectopic pregnancy 	

<ul style="list-style-type: none"> • seizures in pregnancy • miscarriage and abortion • trauma in pregnancy • stillbirths <p>accidental death of a pregnant women</p>	
0732.345	Discuss transport decisions related to gynecological emergencies.

Medicine-Non-Traumatic Musculoskeletal Disorders		Complete
Content Skill Sets		Knowledge/ Performance
0732.346	Describe the anatomy of the musculoskeletal system.	
0732.347	Research the pathophysiology of non-traumatic fractures (cancers or osteoporosis).	
0732.348	Perform an assessment related to non-traumatic musculoskeletal disorders noting pain, swelling, abnormal or loss of movement, sensation changes, circulatory changes, deformity.	
0732.349	Describe management of airway, ventilation, circulation, splinting, transport consideration, communications and documentation related to non-traumatic musculoskeletal injury.	
0732.350	Consider age-related variations pediatric and geriatric related to musculoskeletal injury.	

Medicine-Diseases of Eyes, Ears, Nose and Throat		Complete
Content Skill Sets		Knowledge/ Performance
0732.351	Explain the causes of nosebleeds.	
0732.352	Discuss the general assessment findings related to a nose bleed.	
0732.353	Demonstrate techniques to stop bleeding in conscious patients if no risk of spine injury.	

Shock and Resuscitation		Complete
Content Skill Sets		Knowledge/ Performance
0732.354	Discuss ethical issues in resuscitation.	
0732.355	Review the anatomy and physiology of the respiratory system, cardiovascular system.	
0732.356	Explain the pathophysiology of respiratory failure.	
0732.357	Describe assessment findings related to: <ul style="list-style-type: none"> • pulmonary symptoms • cardiovascular symptoms • neurological symptoms • other symptoms related to shock and resuscitation 	
0732.358	Identify treatments r/t shock and resuscitation including oxygen therapy and ventilator support.	
0732.359	Define cardiac arrest and explain the pathophysiology.	

0732.360	Explain the system components to maximize survival of resuscitation.	
0732.361	Research AED use for Adult, Child, Infant Special AED Situations (refer to the current American Heart Association guidelines).	
0732.362	Discuss shock related to poor perfusion.	
0732.363	Review the anatomy and physiology that relates to poor perfusion (heart, blood vessels, essential components for normal perfusion, physiology of respiration).	
0732.364	Discuss disruptions that can cause shock.	
0732.365	Identify the categories of shock.	
0732.366	Describe signs and symptoms related to shock due to fluid loss, pump failure, container failure.	
0732.367	Using a variety of scenarios complete a patient assessment including scene size up, primary assessment, relevant history, secondary assessment, reassessment related to shock.	
0732.368	Discuss the management of patients in shock.	
0732.369	Consider age-related variations pediatric and geriatric related to shock.	

Trauma-Overview		Complete
Content Skill Sets		Knowledge/ Performance
0732.370	Identify and categorize trauma patients by becoming familiar with the National Trauma Triage Protocol Centers for Disease Control and Prevention https://www.cdc.gov/mmwr/preview/mmwrhtml/rr6101a1.htm	
0732.371	Describe the pathophysiology of the trauma patient.	
0732.372	Discuss the following components of assessment of the trauma patient: <ul style="list-style-type: none"> • major components of the patient assessment • mechanism of injury (MOI) • non-significant MOI • pediatric considerations • reevaluating the MOI • special considerations 	
0732.373	Explain the components of primary survey including details of airway and breathing, secondary assessment, trauma scoring.	
0732.374	Discuss the management of the trauma patient including rapid transport and destination issues, destination selection, trauma system components and transport considerations.	

Trauma-Bleeding		Complete
Content Skill Sets		Knowledge/ Performance
0732.375	Review the structure and function of the circulatory system, including the functions of the blood.	
0732.376	Explain the concept of perfusion.	
0732.377	Compare and contrast arterial, venous and capillary bleeding.	
0732.378	Describe the types of traumatic bleeding, severity and the physiological response to bleeding.	

0732.379	Discuss the general assessment of a bleeding trauma patient including mechanism of injury, primary survey, physical exam, history, Pediatric considerations, geriatric considerations.	
0732.380	Describe body substance isolation, airway patency, oxygenation and ventilation management strategies for a bleeding trauma patient.	
0732.381	Compare and contrast internal and external bleeding control management strategies.	
0732.382	Describe how to stabilize body temperature and provide psychological support for a bleeding trauma patient.	
0732.383	Consider transport decisions related to a bleeding trauma patient.	

Trauma-chest		Complete
Content Skill Sets		Knowledge/ Performance
0732.384	Research the incidence, morbidity, mortality of chest trauma.	
0732.385	Describe mechanisms of injury commonly associated with chest injuries.	
0732.386	Review the anatomy of the chest.	
0732.387	Describe the role of the chest in systemic oxygenation and ventilation.	
0732.388	Research the pathophysiology of chest trauma including impaired cardiac output, ventilation, gas exchange.	
0732.389	Explore the general assessment findings related to chest trauma.	
0732.390	Describe the specific chest injuries including flail chest, open chest wound, pneumothorax, tension pneumothorax, hemothorax, hemopneumothorax, traumatic asphyxia, cardiac tamponade, aortic injury and commotio cordis and the assessment and management for each of these specific injuries.	
0732.391	Consider age-related variations for pediatric and geriatric assessment and management of chest trauma.	

Trauma-Abdominal		Complete
Content Skill Sets		Knowledge/ Performance
0732.392	Discuss the incidents of morbidity and mortality related to abdominal and genitourinary trauma.	
0732.393	Recognize the location, structure and function of the organs in the abdominal cavity.	
0732.394	Describe the structures of the genitourinary system.	
0732.395	Explain the physiology of the genitourinary and abdominal organs.	
0732.396	Associate areas of referred pain with the likely origins of the pain.	
0732.397	Recognize the mechanism of injury, common signs and symptoms of a closed abdominal trauma.	
0732.398	Perform an assessment and develop a treatment plan to manage signs and symptoms of a closed abdominal trauma.	
0732.399	Recognize the mechanism of injury, common signs and symptoms of a penetrating/open abdominal trauma.	
0732.400	Perform an assessment and develop a treatment plan to manage signs and symptoms of a penetrating/closed abdominal trauma.	
0732.401	Analyze and consider the following injuries in abdominal trauma:	
0732.402	Hollow organs injuries.	
0732.403	Solid organ injuries.	
0732.404	Discuss appropriate assessment and management of patients complaining of abdominal pain.	
0732.405	Compare and contrast the areas of referred pain with likely origins of the pain.	

0732.406	Distinguish the type of abdominal pain that may indicate cardiac involvement.	
0732.407	Elicit key information in the history of patients complaining of abdominal pain, including history specific to female patients.	
0732.408	Distinguish different types of general management techniques for abdominal pain including transportation, communication and documentation.	

Trauma-Orthopedic		Complete
Content Skill Sets		Knowledge/ Performance
0732.409	Research the incidence of orthopedic trauma including: <ul style="list-style-type: none"> • morbidity/mortality (upper/lower extremity) • pediatric considerations • geriatric considerations • mechanism of injury (direct, indirect, twisting force) 	
0732.410	Explain the anatomy related to orthopedic trauma: <ul style="list-style-type: none"> • skin layers • subcutaneous layers • extremity structures • axial structures • component of a long bone 	
0732.411	Summarize the physiology of the function of the musculoskeletal system.	
0732.412	Elaborate on pathophysiology of sprains/strains.	
0732.413	Relate the mechanism of injury to the anatomical structure (upper extremity, lower extremity).	
0732.414	Identify complications related to musculoskeletal trauma.	
0732.415	Identify types of fractures.	
0732.416	Identify dislocations related to specific anatomical area injury (clavicle, shoulder, elbow, wrist, metacarpal-phalanx, knee).	
0732.417	Describe the management of scene safety, limb-threatening injury, splinting related to musculoskeletal trauma.	
0732.418	Compare and contrast 4 types of musculoskeletal injury (fracture, dislocation, sprain and strain), the mechanism of injury, assessment and management.	
0732.419	Define open and closed extremity injuries.	
0732.420	Summarize the incidence, mechanism of injury, signs and symptoms, assessment and management of pelvic fracture injury.	
0732.421	Using a variety of scenarios, perform a general assessment including scene safety, mechanism of injury, determine life threatening injuries, use the 6 P's of assessment, complete physical exam, bleeding, guarding/self-splinting, associated injuries for a musculoskeletal trauma patient.	
0732.422	Using a variety of scenarios students will analyze scenario data and create a general management plan and demonstrate skills to control hemorrhage, embolization/splinting, neurologic/circulatory examination, pain management, associated injuries, transport to appropriate facility, appropriate communication and documentation.	
0732.423	Discuss considerations in the assessment and management of specific types of injuries including: <ul style="list-style-type: none"> • amputation 	

	<ul style="list-style-type: none"> • sprains and strains including special assessment findings (sound, severe weakness, pain, edema, apply cold/pressure, wrap, elevate, immobilize) • shoulder girdle injuries • pelvic injuries • hip dislocation • hip fracture • femoral shaft fracture • knee injury • tibia of fibula injury • ankle or foot injury • clavicle injury • humerus injury • forearm injury 	
0732.424	Compare specific considerations for splinting (rigid, formable, traction, air, vacuum, pillow/blanket, short spine board, long spine board).	
0732.425	Contrast age-related variations for pediatric and geriatric assessment and management with an orthopedic traumatic injury.	

Trauma-Soft Tissue		Complete
Content Skill Sets		Knowledge/ Performance
0732.426	Research the incidence of soft tissue injury including the mortality and morbidity.	
0732.427	Describe the structure and function of the skin.	
0732.428	Compare the different types of closed soft-tissue wounds and the assessment and management of closed soft tissue wounds.	
0732.429	Compare the different types of open soft-tissues wounds and general assessment and care for open soft-tissue wounds.	
0732.430	Describe specific treatment for abrasions and lacerations, puncture wounds, impaled objects, avulsions, amputation and genital injuries.	
0732.431	Research the incidence of burn injury including morbidity/mortality and risk factors.	
0732.432	Explain the anatomy and physiology of burns (types of burns, depth classification, body surface is of burns, severity).	
0732.433	Discuss the complications of burn injuries.	
0732.434	Describe assessment and management for burns including thermal, inhalation, chemical, radiation and electrical burns.	
0732.435	Compare and contrast consideration in the dressing and bandaging of open wounds.	
0732.436	Discuss the age-related variations related to soft tissue trauma injuries both pediatric and geriatric.	

Trauma- Head, Facial, Neck and Spine		Complete
Content Skill Sets		Knowledge/ Performance
0732.437	Research the incidence of head/scalp, face, neck injuries including the mechanism of injuries, morbidity and mortality and associated injuries.	

0732.438	Discuss the components and function of the nervous system and the anatomy of the head and spine.	
0732.439	Describe the types of injuries to the skull and brain.	
0732.440	Analyze the general assessment and management of scalp, facial, neck injuries (non-spinal), nasal fractures, eye/orbit, dental, laryngeal, head injury, skull fractures and brain injuries.	
0732.441	Describe the specific concerns in management of cranial injuries with impaled objects.	
0732.442	Describe specific concerns in management of injuries to the face and jaw.	
0732.443	Define nontraumatic brain injuries.	
0732.444	Explain the purpose and elements of the Glasgow coma scale.	
0732.445	Discuss the assessment and management of open wounds to the neck.	
0732.446	Using a variety of scenarios complete assessment and management plan for a patient with a head, neck, facial and non-spinal injury trauma.	
0732.447	Using a variety of scenarios demonstrate the skills necessary for management of a patient with a head, neck, facial and non-spinal injury trauma.	

Trauma-Nervous System

Trauma-Nervous System		Complete
Content Skill Sets		Knowledge/ Performance
0732.448	Research the incidence including morbidity and mortality of nervous system trauma.	
0732.449	Review the anatomy and physiology of the brain and spine.	
0732.450	Identify general assessment and management for brain trauma patients.	
0732.451	Discuss the management of a patient with brain trauma.	
0732.452	Analyze transport considerations for a patient with brain trauma.	
0732.453	Research the Brain Injury Foundation Guidelines.	
0732.454	Consider age-related variations for pediatric and geriatric assessment and management of brain injuries.	
0732.455	List types and mechanisms of spine injury.	
0732.456	Discuss the assessment and management of spine and spinal cord injury.	
0732.457	Discuss other assessment findings in spinal trauma patients (presentation of other injuries with spinal injury).	
0732.458	Discuss the general management consideration of a patient with spinal trauma.	
0732.459	Discuss issues in the immobilization of the head, neck and spine for the following: <ul style="list-style-type: none"> • applying a cervical collar • immobilizing a seated patient, including rapid extrication for high priority patients • applying a long back board • rapid extrication for a child safety seat • immobilizing a standing patient • immobilizing a patient wearing a helmet 	
0732.460	Discuss issues in selective spine immobilization.	
0732.461	Compare and contrast age-related variations for pediatric and geriatric assessment and management of spinal injury.	

Trauma-Special Considerations		Complete
Content Skill Sets		Knowledge/ Performance
0732.462	Consider unique consideration for pregnant patients involved in trauma including mechanism of injury and fetal health.	
0732.463	Explain the special anatomy, physiology and pathophysiology related to pregnancy and fetal considerations.	
0732.464	Explain unique types of injuries and conditions of concern for pregnant patients involve in trauma.	
0732.465	Demonstrate assessment consideration for pregnant patient involved in trauma.	
0732.466	Express management considerations for the pregnant patients involved in trauma.	
0732.467	Summarize special considerations for pediatric patients involved in trauma.	
0732.468	Explain the special anatomy, physiology and pathophysiology related to injured pediatric patients involved in trauma.	
0732.469	Consider unique assessment findings for pediatric patients who have sustained trauma.	
0732.470	Demonstrate unique management considerations for pediatric patient involved in trauma.	
0732.471	Describe special considerations for geriatric patients involved in trauma.	
0732.472	Explain the special anatomy, physiology and pathophysiology related to injured geriatric patients involved in trauma.	
0732.473	Consider unique assessment findings for geriatric patients who have sustained trauma.	
0732.474	Demonstrate unique management considerations for geriatric patients involved in trauma including the cognitively impaired patient.	

Trauma-Environmental Emergencies		Complete
Content Skill Sets		Knowledge/ Performance
0732.475	Describe submersion incidents including the incidence and predictors of morbidity and mortality.	
0732.476	Describe the difference between fresh water and salt water submersion incidents.	
0732.477	Explain the pathophysiology related to submersion incidents.	
0732.478	Describe the following related to submersion incidents: <ul style="list-style-type: none"> • unique signs and symptoms • assessment considerations • management considerations 	
0732.479	Recognize temperature-related illnesses including cold and heat related illness.	
0732.480	State how the body loses heat.	
0732.481	Identify the type of temperature-related illness (generalized cold injury, localized cold injury, generalized heat injury).	
0732.482	Recognize the pathophysiology of cold related and heat related injuries.	
0732.483	Summarize signs and symptoms of cold related illness (generalized and localized) as well as heat related illness (moist pale skin and hot skin).	
0732.484	Demonstrate using a variety of scenarios management considerations of cold and heat related illnesses.	
0732.485	Describe safe techniques for water rescues and ice rescues.	
0732.486	Discuss the assessment and management of the following types of bites and stings:	
0732.487	Insect bites and stings.	
0732.488	Snake bites.	

0732.489	Poisoning from marine life.	
0732.490	Define dysbarism as related to diving emergencies.	
0732.491	Summarize the following related to diving emergencies: <ul style="list-style-type: none"> • mechanism of injury • pathophysiology • signs and symptoms • management considerations 	
0732.492	Describe assessment and management of electrical burns.	
0732.493	Describe assessment and management of radiation injuries.	
0732.494	Analyze age related variations for pediatric and geriatric assessment and management related to environmental emergencies.	

Trauma-Multi-System		Complete
Content Skill Sets		Knowledge/ Performance
0732.495	Explain the kinematics of trauma.	
0732.496	Distinguish multisystem trauma.	
0732.497	Analyze the golden principles of out-of-hospital trauma care.	
0732.498	Using a variety of scenarios and critical thinking skills for multi-system trauma care differentiate the following: <ul style="list-style-type: none"> • oxygenation related to profuse bleeding • sequence of treating patients • rapid transport use • backboard use 	
0732.499	Recognize the most harmful injuries on the scene.	
0732.500	Identify trauma care as a leading cause of death of young people.	
0732.501	Distinguish specific injuries related to multi-system trauma such as blast injuries.	

Special Patient Populations-Obstetrics		Complete
Content Skill Sets		Knowledge/ Performance
0732.502	Review anatomy and physiology of the female reproductive system.	
0732.503	Review normal anatomical, physiological and psychological changes in pregnancy.	
0732.504	Identify premonitory signs of labor, stages of labor and delivery, antepartum and intrapartum assessment findings, management of a normal delivery, and postpartum care.	
0732.505	Identify the following complications of pregnancy: abuse, substance abuse, diabetes mellitus, placental problems, hypertensive disorders, high-risk pregnancy, complications of labor, complications of delivery, postpartum complications.	

Special Patient Populations-Neonatal Care		Complete
--	--	-----------------

Content Skill Sets	Knowledge/ Performance
0732.506 Describe the anatomical and physiological differences between an adult and pediatric patient (head, airway, chest and lungs, abdomen, extremities, integumentary, respiratory, nervous system and spinal column, metabolic differences.	
0732.507 Identify the growth and development stages of infancy, toddler years, preschool years, middle childhood years, adolescence.	
0732.508 Discuss and demonstrate a pediatric assessment including general considerations, assessment process, scene survey, patient assessment, hand on ABCs, focused history and detailed physical exam.	
0732.509 Explain specific pathophysiology, assessment and management of the pediatric patient related to: <ul style="list-style-type: none"> • respiratory distress • shock • neurological changes • gastrointestinal changes • toxicology • sudden infant death syndrome • pediatric trauma 	

Special Patient Populations-Geriatrics		Complete
Content Skill Sets	Knowledge/ Performance	
0732.510 Identify cardiovascular changes in the elderly.		
0732.511 Recognize myocardial infarction in a geriatric patient.		
0732.512 Explain heart failure.		
0732.513 Identify respiratory changes in the elderly.		
0732.514 Explain pneumonia from bacterial, viral or fungal causes (evaluation, risk factors, signs and symptoms, physical assessment, treatment).		
0732.515 Describe pulmonary embolism (signs and symptoms, physical assessment, assessment tools, treatment).		
0732.516 Recognize neurovascular system anatomical and physiological changes and pathophysiology in elderly.		
0732.517 Describe the cognitive abilities, psychomotor skills and social skill changes related to dementia.		
0732.518 Complete and evaluation of pathophysiology through history, risk factors and current medications as it relates to dementia.		
0732.519 Describe known reversible causes of dementia, associated signs and symptoms, problems associated with management of patient with dementia.		
0732.520 Express the difference between dementia and delirium.		
0732.521 Describe the following as it relates to delirium: <ul style="list-style-type: none"> • mortality rates • evaluation of pathophysiology through history • risk factors and medications • associated signs and symptoms • possible changes in physical assessment 		

	<ul style="list-style-type: none"> • assessment tools • treatment 	
0732.522	Describe gastrointestinal system anatomical and physiological changes and pathophysiology changes in the elderly.	
0732.523	Identify gastrointestinal bleeding caused by disease processes, inflammation, infection and obstruction of the upper and lower gastrointestinal tract.	
0732.524	Recognize the genitourinary system anatomical and physiological changes and pathophysiology changes in the elderly.	
0732.525	Define the endocrine system anatomical and physiological changes and pathophysiology changes in the elderly.	
0732.526	Identify hyperosmolar hyperglycemic syndrome (nonketotic coma) as a complication of type 2 diabetes (formerly NIDDM of Type II) in elderly (does not cause ketosis but does lead to osmotic diuresis and shift of fluid to the intravascular space, resulting in dehydration).	
0732.527	Describe musculoskeletal system anatomical and physiological changes and pathophysiology in the elderly.	
0732.528	Recognize toxicological emergencies in the elderly.	
0732.529	Identify sensory changes in the elderly.	

Special Patient Populations-Special Challenges		Complete
Content Skill Sets		Knowledge/ Performance
0732.530	Recognize the types of abuse and neglect in children and the elderly.	
0732.531	Use the assessment to identify findings of concern related to abuse in children and elderly.	
0732.532	Develop a management plan that includes reporting and safely transporting suspected abuse victims.	
0732.533	Summarize the legal aspects related to abuse.	
0732.534	Identify documentation techniques related to abuse.	
0732.535	Explain the special concerns related to: <ul style="list-style-type: none"> • homelessness/poverty and emergency care • Bariatric patients • technology assisted/dependent patients • hospice care and terminally ill • tracheostomy care • sensory deficits • homecare patients • patients with a developmental disability 	

EMS Operations- Principles of Safely Operating a Ground Ambulance		Complete
Content Skill Sets		Knowledge/ Performance
0732.536	Identify risk and responsibilities of Emergency Response including safety issues during transport.	
0732.537	Describe how to establish and work within the incident management system including certification in ICS-100, FEMA IS-700 (can be done as part of this course or prerequisite or as part of the EMS I course).	

EMS Operations-Multiple Casualty Incidents		Complete
Content Skill Sets		Knowledge/ Performance
0732.538	Identify multiple casualty incidents as an event that places great demand of resource (equipment, personnel).	
0732.539	Perform triage, re-triage, destination decisions.	
0732.540	Identify post-traumatic and cumulative stress.	

EMS Operations-Air Medical		Complete
Content Skill Sets		Knowledge/ Performance
0732.541	Describe safe air medical operations, landing zone selection and preparation.	
0732.542	Demonstrate the correct way to approach the aircraft.	
0732.543	Identify communication issues r/t air traffic.	
0732.544	Recognize criteria for utilizing air medical response.	

EMS Operations-Vehicle Extrication		Complete
Content Skill Sets		Knowledge/ Performance
0732.545	Describe safe vehicle extrication (role of EMS, personal safety, patient safety, situation safety, determine number of patients).	
0732.546	Demonstrate use of simple hand tools in relation to vehicle extrication.	
0732.547	Examine special consideration for patient care related to vehicle extrication.	

EMS Operations-Hazardous Material Awareness		Complete
Content Skill Sets		Knowledge/ Performance
0732.548	Identify risks and responsibilities of operating in a cold zone at a hazardous material or other special incident.	
0732.549	Entry level students need to be certified in Hazardous Waste Operations and Emergency Response (HAZWOPER) standard 29 CFR 1910.120(q)(6)(i)-First Responder Awareness Level (this can be done as a co requisite, prerequisite or part of the entry-level course).	

EMS Operations-Mass Casualty Incidents Due to Terrorism and Disaster		Complete
Content Skill Sets		Knowledge/ Performance
0732.550	Analyze the risks and responsibilities of operating on the scene of a natural or man-made disaster (role of EMS, personal and patient).	
0732.551	Using a variety of scenarios complete a 360-degree assessment and scene size-up, determine number of patients, evaluate need for addition resources.	
0732.552	Explain EMS operations during terrorist, weapons of mass destruction, disaster events.	
0732.553	Summarize care of emergency responders on scene.	

Course Description: Instructional content in this will focus on clinical procedures utilized within medical offices. Major components include emergency medical care, physical exam, basic pharmacology, and administration of medication. Students will focus upon employability strategies and career development necessary for successful employment. Students will participate in a work-based clinical externship within a medical office or equivalent health care facility. Due to health care industry standards, exemplary attendance is mandatory. All content skill sets must be mastered before students are eligible to attain established credentials and/or industry validation. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content skill sets.

Notes: 0730 Health Science Clinical Experience may be scheduled with 0733 (Medical Assistant Clinical) to create a 2-credit block.

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0733.1	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0733.2	Describe communication skills that are important when managing conflict.	
0733.3	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0733.4	Explain the roles and responsibilities of team members.	
0733.5	Describe the use of information technology in healthcare settings.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0733.6	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0733.7	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper handwashing, and gloving procedures).	

WEST VIRGINIA STANDARDS

Information Collection		Complete
Content Skill Sets		Knowledge/ Performance
0733.8	Perform basic diagnostic medical assisting procedures.	
0733.9	Perform visual and auditory screenings.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0733.10	Instruct patients/clients regarding self-administration of medications.	
0733.11	Prepare examination and treatment areas before, during and after patient/client care.	
0733.12	perform minor treatments as directed by the physician including hot and cold therapy (which includes but is not limited to the following: hot water bag, heating pad, hot soaks and compresses, ice bag, cold compresses and packs).	
0733.13	Assist the physician with examination, treatment and/or minor surgery.	
0733.14	Perform orthopedic procedures, including but not limited to the following: crutch measurements and instruction in use of canes, crutches, walkers, and wheelchairs.	
0733.15	Apply all types of roller bandages, using turns as appropriate.	
0733.16	Perform eye irrigations and instillations.	
0733.17	Perform ear irrigations and instillations.	
0733.18	Perform CLIA-waived occult blood tests.	
0733.19	Perform CLIA-waived urinalysis testing including color and turbidity assessment, specific gravity and reagent test strips.	
0733.20	Perform CLIA-waived hematology tests (e.g., hemoglobin, hematocrit).	
0733.21	Perform CLIA-waived chemistry tests (e.g., glucose, cholesterol).	
0733.22	Perform CLIA-waived pregnancy tests.	
0733.23	Perform CLIA-waived infectious disease testing (e.g., strep screen, mono test, influenza A/B).	
0733.24	Explain the CLIA-exemption for physician office laboratories.	
0733.25	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as "Provider Performed Microscopy" and the regulatory constraints on test performance.	
0733.26	Demonstrate the operation of a compound microscope using direct and oil immersion lens.	
0733.27	Observe examples of urine sediment (microscopic urinalysis and explain quantitation systems).	
0733.28	Observe examples of gram stained preparations of gram positive and gram-negative organisms.	
0733.29	Observe examples of Wright's stained blood smears.	
0733.30	Observe examples of wet preps, KOH preps and pin-worm preps for fungal elements and parasites.	
0733.31	Position patients/clients for basic x-rays.	
0733.32	Demonstrate awareness of operation and maintenance of x-ray equipment/accessories.	
0733.33	Demonstrate knowledge of how to process X-Ray film and maintain film files.	
0733.34	Evaluate X-Ray film quality.	
0733.35	Describe X-Ray principles and safety practices.	
0733.36	Instruct patient/client in preparation for basic X-Ray examinations.	
0733.37	Describe X-Ray equipment operation.	
0733.38	Use precautions and provide appropriate protection for patients/clients and staff in the presence of ionizing radiation.	
0733.39	Maintain a safe working environment in radiological work areas.	
0733.40	discuss principles of using Electronic Medical Record (EMR).	

0733.41	execute data management using Electronic Medical Record (EMR) including, but not limited to, patient/client registration, appointment scheduling, charting, billing and insurance processing, procedure and diagnostic coding, ordering and monitoring patient/client testing, medication and prescription orders, keyboarding and correspondence and performing an office inventory.	
0733.42	Execute non EMR data management including, but not limited to: selecting appropriate procedure and diagnostic codes, process insurance data and claims, develop and maintain billing and collection systems, and keyboarding documents.	
0733.43	Perform various financial procedures including, but not limited to, billing and collection procedures, payroll procedures, checkbook procedures and related medical office software.	
0733.44	Utilize the Electronic Medical Record (EMR) to maintain personnel records and perform payroll duties.	

Treatment Planning and Implementation		Complete
Content Skill Sets		Knowledge/ Performance
0733.45	Prepare patients/clients for and assist the physician with physical examinations including, but not limited to: pre- and post-natal, male and female reproductive, rectal and pediatric.	
0733.46	Measure and record vital signs, recognizing abnormalities and danger signs.	
0733.47	Measure and record a pulse pressure.	
0733.48	Measure and record an orthostatic blood pressure.	
0733.49	Record patient/client data.	
0733.50	Instruct patient/client on breast or testicular self-examinations.	
0733.51	Prepare patients/clients for and assist the physician with physical examinations including, but not limited to: pre and post-natal, male and female reproductive, rectal and pediatric.	
0733.52	Measure and record vital signs, recognizing abnormalities and danger signs.	
0733.53	Measure and record a pulse pressure.	
0733.54	Measure and record an orthostatic blood pressure.	
0733.55	Record patient/client data.	
0733.56	Instruct patient/client on breast or testicular self-examinations.	
0733.57	Assist with pediatric procedures, including, but not limited to: weighing, measuring, and collecting specimens.	
0733.58	Prepare patient/clients for diagnostic procedures.	
0733.59	Identify commonly administered drugs, their uses and effects.	
0733.60	Use correct pharmaceutical abbreviations and terminology.	
0733.61	Identify various methods and routes of drug administration.	
0733.62	Calculate dosage and administer pharmaceuticals to correct anatomical sites, to correct patient/client, by correct route of administration, at the correct time and chart correctly.	
0733.63	Demonstrate knowledge of the legal and ethical related to the administration and dispensing of drugs in the office setting under a doctor's supervision.	
0733.64	demonstrate appropriate techniques to: <ul style="list-style-type: none"> a. prepare and administer non-parenteral medications (solid and liquids) b. prepare and administer parenteral medications 	

<ul style="list-style-type: none"> c. reconstitute powdered drugs d. prepare injections from ampules and vials e. administer intradermal injections f. administer subcutaneous injections g. administer intramuscular injections h. administer z-track intramuscular injections 	
---	--

Clinical Applications		Complete
Content Skill Sets		Knowledge/ Performance
0733.65	Prior to clinical assignment demonstrate minimum competence in performing procedures in a laboratory setting.	
0733.66	Perform skills listed and obtained through mastery of theory content.	
0733.67	Perfect individual competency in performing medical assisting functions.	
0733.68	Assist with and participate patient/client care.	
0733.69	Assist a physician.	

Client Interaction		Complete
Content Skill Sets		Knowledge/ Performance
0733.70	Record patient/client assessment and treatment data.	
0733.71	Recognize signs and symptoms that may indicate to the physician a need for laboratory testing.	
0733.72	Describe the criteria used by Food and Drug Administration (FDA) to classify a test as "CLIA waived" and the regulatory constraints on test performance.	
0733.73	Explain the methods of quality control for CLIA-waived testing, identify acceptable and unacceptable control results and describe specific corrective action required when results are unacceptable.	
0733.74	Instruct patients/clients in the proper collection of urine (clean catch, mid-stream), sputum and stool specimens.	
0733.75	Demonstrate proper techniques for the collection of urine, capillary whole blood (finger/heel stick), culture material (throat/nasal swab) and other specimen types required for CLIA-waived tests.	

Course Description: Within this course, instructional content will focus on advanced pharmacology. Course content will include the uses, sources, forms, and delivery routes of drugs. Knowledge will be gained in the area of drug classifications and actions, along with legal implications regarding controlled substances and other medications. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Introduction to Advanced Pharmacology		Complete
Content Skill Sets		Knowledge/ Performance
0734.01	Determine the meaning of drugs and establish their origin and use.	
0734.02	Compare the three types of drug names.	
0734.03	Examine four sources of drugs and provide examples.	
0734.04	Determine the three forms in which drugs are prepared, choosing examples and the route of administration for each.	

Drug References		Complete
Content Skill Sets		Knowledge/ Performance
0734.05	Examine PDR and other reference sources.	
0734.06	Determine the meaning of drugs and establish their origin and use.	
0734.07	Compare the three types of drug names.	
0734.08	Examine four sources of drugs and provide examples.	
0734.09	Determine the three forms in which drugs are prepared, choosing examples and the route of administration for each.	

Agencies and Safety Guidelines		Complete
Content Skill Sets		Knowledge/ Performance
0734.10	Demonstrate knowledge of the legal and ethical implications of medication administration.	
0734.11	Determine the role of the FDA.	
0734.12	Examine the drug approval process.	
0734.13	Relate the function of the Drug Enforcement Agency and the purpose of the Controlled Substance Act.	
0734.14	Determine the meaning of a controlled substance.	
0734.15	Recognize five schedules of controlled substances providing examples of each.	
0734.16	Select the proper method for storing and dispensing a controlled substance.	
0734.17	Implement documentation associated with controlled substances.	

0734.18	Examine legal considerations associated with controlled substances and prescription pads.	
0734.19	Identify professions that can legally prescribe medication.	

Medication Orders and Prescriptions		Complete
Content Skill Sets		Knowledge/ Performance
0734.20	Understand how to interpret and document medication orders including the parts of a prescription.	
0734.21	Determine the meaning of common pharmacology terms.	
0734.22	Differentiate the information found on a prescription form.	
0734.23	Utilize prescription abbreviations.	
0734.24	Interpret medication orders.	
0734.25	Examine the prescription guidelines for controlled substances.	
0734.26	Demonstrate the proper procedure for phoning in prescription orders.	

Drug Classifications and Actions		Complete
Content Skill Sets		Knowledge/ Performance
0734.27	Examine how drugs are classified.	
0734.28	Classify drugs using reference books.	
0734.29	Relate therapeutic action of specific classifications of drugs.	
0734.30	Compare therapeutic action and side effects of specific drugs.	
0734.31	Determine common contraindications.	
0734.32	Examine precautions and adverse reactions of specific drugs.	
0734.33	Select the classification, action and side effects of over-the-counter (OTC) drugs.	
0734.34	Assess alternative medications and their action.	
0734.35	Evaluate drug interactions and their consequences.	

Mathematical Applications in Pharmacology		Complete
Content Skill Sets		Knowledge/ Performance
0734.36	Understand mathematical computations related to dosage calculations.	
0734.37	Demonstrate conversion equations used in pharmacology.	
0734.38	Compare the systems of measurement commonly used in pharmacology.	
0734.39	Differentiate metric, household and apothecary units of measure.	
0734.40	Use metric, household and apothecary abbreviations.	
0734.41	Utilize the fundamental units of the metric system.	
0734.42	Convert quantities between the systems of measure.	

0734.43	Demonstrate the ability to use decimals, fractions, ratios, and proportions.	
0734.44	Demonstrate the ability to solve for x.	

Dosage Calculations		Complete
Content Skill Sets		Knowledge/ Performance
0734.45	Select steps in the calculation of drug doses.	
0734.46	Interpret medication labels.	
0734.47	Compare medication label information to medication order.	
0734.48	Convert to the same units of measure.	
0734.49	Articulate the proportion method and the formula method for calculating drug doses.	
0734.50	Compute drug doses using the proportion method and the formula method.	
0734.51	Utilize the methods for calculating pediatric drug doses.	

Medication Classification and Actions		Complete
Content Skill Sets		Knowledge/ Performance
0734.52	Examine the classification of drugs.	
0734.53	Describe medication classifications and actions based on desired body system affected.	
0734.54	Explore factors that affect drug action.	
0734.55	Describe undesirable actions of drugs.	
0734.56	Describe how drugs are classified.	
0734.57	Classify drugs using reference books.	
0734.58	Relate therapeutic action of specific classifications of drugs.	
0734.59	Compare therapeutic action and side effects of specific drugs.	
0734.60	Determine common contraindications.	
0734.61	Examine precautions and adverse reactions of specific drugs.	
0734.62	Select the classification, action and side effects of over-the-counter (OTC) drugs.	
0734.63	Assess alternative medications and their action.	
0734.64	Evaluate drug interactions and their consequences.	
0734.65	Explore examples of classifications for neurological medication CNS drugs: <ul style="list-style-type: none"> · sedative hypnotics · skeletal muscle relaxants · anticonvulsants · narcotic analgesics · antipsychotics · antidepressants · antianxiety agents 	

	<ul style="list-style-type: none"> · CNS stimulants · anti-Parkinson's agents · sympathomimetic agents · sympatholytic agents · parasympathomimetic agents · parasympatholytic agents · neuromuscular blocking agents 	
0734.66	<p>Explore examples of classification for hormone medications:</p> <ul style="list-style-type: none"> · estrogens progestins · corticosteroids · insulin · oral hypoglycemics · oxytocics · thyroid hormones · anti-thyroid hormones 	
0734.67	<p>Explore examples of cardiovascular medications:</p> <ul style="list-style-type: none"> · antiarrhythmics · antianginals · vasodilators · calcium channel blockers · angiotensin-converting enzyme (ACE) inhibitors · angiotensin II inhibitors · beta-adrenergic blockers · alpha-adrenergic blockers · antilipidemic agents 	
0734.68	<p>Explore examples of renal system medications:</p> <ul style="list-style-type: none"> · thiazides · loop · potassium sparing · combination · osmotics 	
0734.69	<p>Explore Examples of bacteriostatic and bactericidal medications:</p> <ul style="list-style-type: none"> · antibacterial · urinary anti-infectives · antibiotics · penicillins · cephalosporins · quinolones · macrolides 	

	<ul style="list-style-type: none"> · Tetracyclines · aminoglycosides · antifungals · antiparasitic agents · antihelminthics · amebicides · antitubercular agents · antiviral agents 	
0734.70	<p>Explore examples of chemotherapy medications</p> <ul style="list-style-type: none"> · antimetabolites · alkylating agents · hormones · vinca alkaloids · asparaginase · antibiotics 	
0734.71	<p>Explore examples of medication used for blood disorders:</p> <ul style="list-style-type: none"> · anticoagulants · hemostatics · antithrombotics · thrombolytics · hemorrheologic agents · antianemics 	
0734.72	<p>Explain characteristics of vitamins and minerals.</p>	

Course Description: Within this course, instructional content will focus on advanced pharmacology. Course content will include the uses, sources, forms and delivery routes of drugs. Knowledge will be gained in the area of drug classifications and actions, along with legal implications regarding controlled substances and other medications. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Medical Terminology		Complete
Content Skill Sets		Knowledge/ Performance
0736.01	Interpret commonly used health insurance terms.	
0736.02	Interpret commonly used abbreviations.	
0736.03	Use standard medical terms and abbreviations to interpret and submit medical insurance claims.	

Medical Insurance Claims		Complete
Content Skill Sets		Knowledge/ Performance
0736.04	Understand basic coding used to complete and submit medical insurance claims.	
0736.05	Examine the evolution of medical insurance.	
0736.06	Determine the significance of diagnosis-related groups.	
0736.07	Recognize the origin and function of coding.	
0736.08	Differentiate the types of codes used in health care.	
0736.09	Analyze the documentation tools used in the coding process.	
0736.10	Utilize the proper technique for determining the physician's diagnosis.	

ICD-10-CM Coding		Complete
Content Skill Sets		Knowledge/ Performance
0736.11	Examine the ICD-10-CM code book format.	
0736.12	Use correct symbols, punctuation and abbreviations in the ICD-10-CM code book.	
0736.13	Utilize the steps for accurate coding from the ICD-10-CM code book.	
0736.14	Implement the CMS guidelines for ICD-10-CM coding.	
0736.15	Determine the purpose for V codes and E codes.	
0736.16	Use the Drug and Chemical Tables found in the ICD-10-CM code book.	
0736.17	Demonstrate the procedure for coding special complexities.	

CPT-4 Coding		Complete
Content Skill Sets		Knowledge/ Performance
0736.18	Demonstrate the technique for determining when procedures and services can be coded.	
0736.19	Examine the CPT-4 code book format.	
0736.20	Use the CPT-4 code book signs and symbols.	
0736.21	Determine the use of modifiers to CPT-4 codes.	
0736.22	Compare starred, global and unlisted CPT-4 codes.	

CPT-4 Sections		Complete
Content Skill Sets		Knowledge/ Performance
0736.23	Utilize the concepts of evaluation and management coding.	
0736.24	Apply the principle elements of anesthesia coding.	
0736.25	Implement the surgery coding guidelines.	
0736.26	Examine coding rules for pathology services.	
0736.27	Select the coding guidelines for medicine services.	
0736.28	Articulate the rules and application of modifiers to the coding process.	
0736.29	Code a sample claim for	

Reimbursement and Auditing		Complete
Content Skill Sets		Knowledge/ Performance
0736.30	Distinguish reimbursement methods.	
0736.31	Articulate the purpose of third party contracts.	
0736.32	Demonstrate components for reimbursement calculations.	
0736.33	Complete a claim form.	
0736.34	Examine internal and external obstacles to accurate and timely reimbursement.	
0736.35	Determine the purpose of audits.	

Course Description: Instructional content will focus on an introduction to the medical laboratory, safety, principles of disease transmission and prevention, as well as medical and surgical asepsis. Students will obtain the knowledge and skills necessary to assist and/or perform basic laboratory and diagnostic procedures. With participation and input of therapeutic services professionals, instructional content will incorporate project and problem-based therapeutic practices and procedures to demonstrate the criticality of these skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0737.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0737.02	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0737.03	Describe communication skills that are important when managing conflict.	
0737.04	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0737.05	Explain the roles and responsibilities of team members.	
0737.06	Describe the use of information technology in healthcare settings.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0737.07	Explain the laws (e.g., liability, influence on client care).	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0737.08	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0737.09	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support	

	those standards (e.g., infection control, proper handwashing, and gloving procedures).	
0737.10	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0737.11	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

WEST VIRGINIA STANDARDS

Information Collection		Complete
Content Skill Sets		Knowledge/ Performance
0737.12	Select appropriate tools for information to be collected.	
0737.13	Collect and format information using facility protocols and regulatory guidelines.	
0737.14	Practice recording patient/client results of assessment and treatment data.	
0737.15	Operate office equipment and perform clerical office procedures.	
0737.16	Prepare and maintain medical records both manually and within the Electronic Medical Record (EMR).	
0737.17	Maintain office filing systems.	
0737.18	Screen and process mail.	
0737.19	Schedule routine appointments and patient/client admissions and/or procedures both manually and within the Electronic Medical Record (EMR).	
0737.20	Adhere to current government regulations, risk management and compliance guidelines within the scope of practice of a medical assistant.	
0737.21	Maintain office inventory.	
0737.22	Inform patients/clients of office policies and procedures.	
0737.23	Perform general housekeeping duties.	
0737.24	Perform daily office activities both manually and within the Electronic Medical Record (EMR).	
0737.25	Receive patients/clients and visitors.	
0737.26	Identify and maintain office security policies/procedures.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0737.27	Perform technical skills in phlebotomy and electrocardiography (see modules).	
0737.28	Implement appropriate Joint Commission patient/client safety goals.	
0737.29	Define and utilize correct medical terminology and metric measurement needed for specimen collection.	
0737.30	Follow approved procedure for completing a laboratory requisition form.	
0737.31	Outline principles of intravenous therapy.	
0737.32	Demonstrate knowledge of intravenous terminology and practices.	
0737.33	Describe dangers of intravenous treatment.	
0737.34	Demonstrate intravenous equipment.	

0737.35	Describe role of medical assistant in assisting with intravenous therapy.	
---------	---	--

Treatment Planning and Implementation		Complete
Content Skill Sets		Knowledge/ Performance
0737.36	Create a treatment plan using a problem-solving model and evaluate for intervention opportunities.	
0737.37	Select appropriate resources to implement treatment plan.	
0737.38	Evaluate priorities in order to organize work.	
0737.39	Use equipment and instruments according to the manufacturer's guidelines and accepted safety practice.	
0737.40	Document actions according to facility protocol and regulatory guideline.	

Monitoring Patient/Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0737.41	Describe the process for monitoring patient/client health status.	
0737.42	Evaluate patient/client response to administered treatments and procedures.	
0737.43	Analyze and report patient/client response.	
0737.44	Assess need for follow up and alternative care.	

Patient/Client Status Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0737.45	Choose appropriate evaluation tools to assess patient/client response to treatment plan.	
0737.46	Analyze information gathered.	
0737.47	Revise or create modifications to treatment plan based on information gathered.	

Client Interaction		Complete
Content Skill Sets		Knowledge/ Performance
0737.48	Instruct patient/client regarding health care and wellness practices.	
0737.49	Explain procedures to patient/client.	
0737.50	Evaluate patient's/client's ability to understand given information.	
0737.51	Demonstrate empathy for patient/client.	
0737.52	Adjust communication to the needs of the patient/client.	

Course Description: Students will examine nutrition in relation to the maintenance and/or restoration of wellness. Topics include food composition, nutritional guidelines, therapeutic diets, eating disorders, menu planning and patient teaching. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Digestive System		Complete
Content Skill Sets		Knowledge/ Performance
0739.01	Examine the structure and function of the digestive system.	
0739.02	Distinguish the digestive and absorption processes.	
0739.03	Relate the function of enzymes in digestion.	
0739.04	Examine the roles of accessory organs in digestion.	

Metabolism		Complete
Content Skill Sets		Knowledge/ Performance
0739.05	Determine the process of metabolism and its role in the production of energy.	
0739.06	Compare anabolism and catabolism.	
0739.07	Interpret basal metabolic rate (BMR).	
0739.08	Calculate BMR given the formula and client scenarios.	
0739.09	Identify the factors that influence metabolic rate.	

Basic Nutrition and Food Composition		Complete
Content Skill Sets		Knowledge/ Performance
0739.10	Examine nutrition including its relationship to physical well-being.	
0739.11	Determine the essential nutrients including their function and source.	
0739.12	Examine the basic chemical composition of fat, carbohydrates and protein.	
0739.13	Examine the function and storage of carbohydrates.	
0739.14	Compare simple and complex carbohydrates.	
0739.15	Examine the three categories of lipids including use and storage in the body.	
0739.16	Compare saturated, monounsaturated and polyunsaturated fats.	
0739.17	Examine cholesterol, differentiating between cholesterol made by the body and dietary cholesterol.	

0739.18	Evaluate the relationship between cholesterol and heart disease.	
0739.19	Compare LDL and HDL, focusing on their relationship to the risk of heart disease.	
0739.20	Determine how glucose is made available to the body.	
0739.21	Define amino acids.	
0739.22	Examine the function and storage of protein.	
0739.23	Correlate the significance between essential amino acids and complete protein.	
0739.24	Define calorie and compare the caloric values of carbohydrates, fat and protein.	
0739.25	Calculate individual minimum caloric requirement using the given formula.	
0739.26	Determine the function and source of vitamins and minerals in the body.	
0739.27	Distinguish between water-soluble and fat-soluble vitamins.	
0739.28	Evaluate the vitamin and mineral content of various foods.	
0739.29	Relate vitamin and mineral deficiencies to resulting diseases.	

Nutrition Guidelines		Complete
Content Skill Sets		Knowledge/ Performance
0739.30	Examine the USDA's Food Guide and DASH Eating Plan.	
0739.31	Interpret food intake recommendation tables and Dietary Reference Intakes (DRI) tables.	
0739.32	Use food intake recommendation tables to create a balanced eating plan for selected client scenarios.	
0739.33	Determine nutritional requirements throughout various stages of life.	
0739.34	Relate the effects of culture and religion on nutrition.	

Regular Diet		Complete
Content Skill Sets		Knowledge/ Performance
0739.35	Determine patient/client dietary requirements.	
0739.36	Understand USDA's nutritional and caloric recommendations.	
0739.37	Create a sample menu for a regular diet based on nutritional guidelines and caloric requirements.	
0739.38	Calculate the caloric value of the sample menu.	
0739.39	Calculate the nutritional value of the sample menu.	
0739.40	Analyze the information on food labels.	
0739.41	Use information on food labels to analyze meal plans.	

Therapeutic Diets		Complete
Content Skill Sets		Knowledge/ Performance
0739.42	Demonstrate knowledge of the relationship of therapeutic diets to the physiology and pathology of the body.	

0739.43	Examine diet therapy.	
0739.44	Demonstrate the similarities and differences in a therapeutic diet and a balanced eating plan.	
0739.45	Determine common therapeutic diets and the rationale for their use.	
0739.46	Differentiate between food allergies and food sensitivities.	

Eating Disorders		Complete
Content Skill Sets		Knowledge/ Performance
0739.47	Examine types of eating disorders and corresponding symptoms.	
0739.48	Assess the factors that contribute to eating disorders.	
0739.49	Compare the methods of treatment for eating disorders.	
0739.50	Create a dietary plan for a patient with an eating disorder.	

Patient/Client Teaching		Complete
Content Skill Sets		Knowledge/ Performance
0739.51	Examine the healthcare professional's role in patient teaching regarding nutrition.	
0739.52	Determine a nutritional teaching plan based on USDA's dietary guidelines.	
0739.53	Analyze the factors that influence patient compliance.	
0739.54	Create a patient teaching plan for selected therapeutic diets.	
0739.55	Develop the communication skills necessary for effective patient teaching.	

Course Description: This course provides introduction to the dental assisting profession while preparing the student with foundational dental assisting knowledge and entry level skill. Students will obtain knowledge in communication, safety, legal and ethics, and teamwork skills to prepare for employment as dental assistants. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and Content skill sets.

Introduction to the Dental Assisting Profession		Complete
Content Skill Sets		Knowledge/ Performance
0740.1	Identify career roles, functions, obligations, and limitations of a dental assistant.	
0740.2	Identify professional organizations within the dental community.	
0740.3	Describe ethics and jurisprudence as they relate to the dental profession.	
0740.4	Identify the roles of the dental healthcare team.	
0740.5	Identify the major dental specialties.	

Communication Skills and Business Office Procedures		Complete
Content Skill Sets		Knowledge/ Performance
0740.6	Maintain procedures for legal access to patient records according to HIPAA standards.	

Infection Control and Hazard Management		Complete
Content Skill Sets		Knowledge/ Performance
0740.7	Recognize Safety Data Sheets (SDS) and comply with safety signs, symbols and labels.	

West Virginia Standards

The Dental Assisting Profession		Complete
Content Skill Sets		Knowledge/ Performance
0740.8	Identify the basic components of the dental health care delivery system including public, private, government and non-profit.	
0740.9	Identify the roles and responsibilities of the consumer within the dental healthcare system.	
0740.10	Explain the cause and effects of factors that influence the current delivery system of dental healthcare.	
0740.11	Explain the impact of emerging issues including technology, epidemiology, bioethics and socioeconomics on the dental healthcare delivery system.	
0740.12	Discuss the history of dentistry.	

Communication in the Dental Office		Complete
Content Skill Sets		Knowledge/ Performance
0740.13	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.	
0740.14	Develop basic observational skills and related documentation strategies in written and oral form.	
0740.15	Identify characteristics of successful and unsuccessful communication including communication styles and barriers.	
0740.16	Compose written communication using correct spelling, grammar, a formatting and confidentiality and specific formats of letter writing.	
0740.17	Recognize components of medical and dental terminology and abbreviations.	
0740.18	Recognize the importance of courtesy and respect for patients and other health care workers and maintain good interpersonal relationships.	
0740.19	Adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.	
0740.20	Identify psychological considerations influencing communication and behaviors.	
0740.21	Identify and define common dental terms.	
0740.22	Demonstrate the use of proper dental terminology in the dental environment.	
0740.23	Apply basic speaking and active listening skills including reflection, restatement, and clarification techniques.	
0740.24	Develop basic observational skills and related documentation strategies in written and oral form.	

Legal and Ethical Responsibilities

Legal and Ethical Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
0740.25	Identify areas of West Virginia Board of Dentistry applicable to practice by the dental health workers.	
0740.26	Explain practices that could result in malpractice, liability, negligence, abandonment, false imprisonment and fraud.	
0740.27	Demonstrate procedures for accurate documentation and record keeping.	
0740.28	Interpret healthcare facility policy and procedures.	
0740.29	Explain the patients' "Bill of Rights."	
0740.30	Identify and implement standards of the Health Insurance Portability and Accountability Act (HIPAA).	
0740.31	Distinguish between express, implied and informed consent.	
0740.32	Explain the laws governing harassment, labor and employment.	
0740.33	Differentiate between legal and ethical issues in dentistry.	
0740.34	Describe a Code of Ethics consistent with the dental assisting profession.	

Anatomy and Physiology

Anatomy and Physiology		Complete
Content Skill Sets		Knowledge/ Performance
0740.35	Develop a basic understanding of the structure and function of the body systems.	
0740.36	Identify common disorders related to each of the body systems.	
0740.37	Explain basic concepts of positive self-image, wellness and stress.	
0740.38	Develop a wellness and stress control plan that can be used in personal and professional life.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
0740.39	Describe personal and jobsite safety rules and regulations that maintain safe and healthy work environments.	
0740.40	Identify and describe methods in medical error reduction and prevention in the dental healthcare setting.	
0740.41	Demonstrate an understanding of personal safety procedures based on Occupations Safety and Health Administration (OSHA) and Centers for Disease Control (CDC) regulations (including standard precautions).	
0740.42	Demonstrate procedures for the safe transport and transfer of patients.	
0740.43	Describe fire safety, disaster and evacuation procedures.	
0740.44	Explain emergency procedures to follow in response to workplace accidents.	
0740.45	Demonstrate handwashing and the use of personal protective equipment used in dentistry.	
0740.46	Recognize and respond to emergency situations.	
0740.47	Take and record vital signs.	
0740.48	Describe legal parameters relating to the administration of emergency care.	
0740.49	Obtain and maintain training or certification in cardiopulmonary resuscitation (CPR), automated external defibrillator (AED), foreign body airway obstruction (FBAO) and first aid.	

Technology Skills		Complete
Content Skill Sets		Knowledge/ Performance
0740.50	Define terms and demonstrate basic computer skills.	
0740.51	Interpret information from electronic medical documents.	

Employability Skills		Complete
Content Skill Sets		Knowledge/ Performance
0740.52	Identify personal traits or attitudes desirable in a member of the healthcare team.	
0740.53	Exemplify basic professional standards of dental healthcare workers as they apply to hygiene, dress, language, confidentiality and behavior (i.e. telephone etiquette, courtesy and self-introductions).	
0740.54	Maintain a career portfolio to document knowledge, skills, and experience.	
0740.55	Conduct a job search and complete a job application form correctly.	
0740.56	Demonstrate competence in job interview techniques.	
0740.57	Examine levels of education, credentialing requirements including licensure and certification, employment opportunities, workplace environments and career growth potential.	
0740.58	Examine licensing, certification, and industry credentialing requirements.	
0740.59	Write an appropriate resume.	

Bloodborne Pathogens		Complete
Content Skill Sets		Knowledge/ Performance
0740.60	Recognize emerging diseases and disorders.	
0740.61	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood borne pathogens including Hepatitis B.	
0740.62	Identify "at risk" behaviors that promote the spread of diseases caused by blood borne pathogens and the public education necessary to combat the spread of these diseases.	
0740.63	Identify community resources and services available to the individuals with diseases caused by blood borne pathogens.	
0740.64	Apply infection control techniques designed to prevent the spread of diseases caused by blood borne pathogens to the care of all patients following Centers for Disease Control (CDC) guidelines.	
0740.65	Demonstrate knowledge of the legal aspects of AIDS, including testing.	

Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
0740.66	Demonstrate knowledge of leadership and teamwork skill to accomplish team goals and objectives.	
0740.67	Analyze attributes and attitudes of an effective leader.	
0740.68	Recognize factors and situations that may lead to conflict.	
0740.69	Demonstrate effective techniques for managing team conflict.	

Course Description: The student within the Dental Assistant Clinical Practices course will focus on knowledge and skills required for the Dental Assistant to function within the areas of radiography and emergency medical care. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Imaging System		Complete
Content Skill Sets		Knowledge/ Performance
0742.01	Examine imaging systems used for dental purposes.	
0742.02	Articulate the advantages to the patient and staff when using imaging systems.	
0742.03	Relate the differences between imaging systems, digital radiography and radiography.	

Radiation Safety		Complete
Content Skill Sets		Knowledge/ Performance
0742.04	Research the principles of ionizing radiation.	
0742.05	Illustrate the production of the roentgen ray.	
0742.06	Relate the manufacturers' responsibilities in relationship to radiation safety.	
0742.07	Examine the federal government safety specifications for all manufacturers of dental x-ray units.	
0742.08	Examine the responsibilities of the dentist, assistant and patient in radiation safety.	

Dental Radiographic Film		Complete
Content Skill Sets		Knowledge/ Performance
0742.09	Relate the composition of dental radiographic film.	
0742.10	Contrast radiographic film speed.	
0742.11	Determine the proper film size for radiographs.	
0742.12	Examine the internal and external parts of radiographic film packets.	
0742.13	Differentiate between intraoral and extraoral radiographs.	
0742.14	Articulate proper storage for radiographic film.	

Producing Quality Radiographics

Complete

Content Skill Sets		Knowledge/ Performance
0742.15	Determine safety procedures before, during and after a patient is exposed to radiation.	
0742.16	Relate infection control procedures and protocols for placing, exposing and developing radiographs.	
0742.17	Compare bisecting and paralleling technique.	
0742.18	Research radiographic exposures commonly used in dentistry.	
0742.19	Relate common radiographic errors.	
0742.20	Assemble XCP (X-Tension Cone Paralleling) instrument for a periapical and bitewing radiograph.	
0742.21	Assess a mock radiographic exposure on a mock patient.	

Processing Quality Radiographics

Complete

Content Skill Sets		Knowledge/ Performance
0742.22	Demonstrate proper darkroom procedures and room requirements.	
0742.23	Compare manual and automatic processes.	
0742.24	Relate the composition of processing solutions (Fixer and Developer).	
0742.25	Determine processing errors and methods of correction.	

Evaluation of Radiographs

Complete

Content Skill Sets		Knowledge/ Performance
0742.26	Choose facial landmarks associated with roentgenology to the correct definitions.	
0742.27	Recognize the film requirements for a full mouth series of radiographs for adults and children.	
0742.28	Mount and file radiographs.	
0742.29	Examine characteristics, uses and indications for oral radiographs.	

Emergency Medical Care

Complete

Content Skill Sets		Knowledge/ Performance
0742.30	Recognize common medical emergencies including the symptoms and treatment protocol for each.	
0742.31	Determine the role of the assistant in the administration of oxygen.	
0742.32	Secure certification for adult, child and infant CPR and Foreign Body Airway Obstruction (FBAO) from the American Red Cross or American Heart Association.	
0742.33	Relate the importance of periodic checks of expiration dates and updating medications in the emergency kit.	

Vital Signs		Complete
Content Skill Sets		Knowledge/ Performance
0742.34	Relate the importance of reviewing the patient's medical history and performing the physical assessment before dental treatment begins.	
0742.35	Distinguish between characteristics of vital signs.	
0742.36	Determine the instruments used to measure vital signs.	
0742.37	Measure and record vital signs, reporting abnormal measurements.	

Course Description: The student completing this course will be able to use knowledge from previously required courses to perform and practice all aspects of Dental Laboratory Assisting in a clinical setting. Students will obtain the knowledge and skills necessary to assist and/or perform basic laboratory and diagnostic procedures. With participation and input of therapeutic services professionals, instructional content will incorporate project and problem-based therapeutic practices and procedures to demonstrate the criticality of these skills. Students utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Notes: 0730 Health Science Clinical Experience may be scheduled with 0743 (Dental Assisting Clinical Science) to create a 2-credit block.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0743.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	
0743.02	Explain how different diseases can influence the functioning, behaviors, and attitudes of individuals including dementia/Alzheimer's disease.	
0743.03	Describe selected client service strategies (e.g., service, quality client care, client participation).	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0743.04	Using a problem-solving process applied to healthcare situations, describe how healthcare workers can effectively communicate with their clients/individuals and team members.	

WEST VIRGINIA STANDARDS

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0743.05	Identify properties/uses and manipulate gypsum.	
0743.06	Identify properties/uses and manipulate restorative materials.	
0743.07	Identify properties/uses and manipulate dental cements.	
0743.08	Identify properties/uses and manipulate impression materials.	

0743.09	Identify properties/uses and manipulate acrylics and/or thermoplastics.	
0743.10	Identify properties/uses and manipulate waxes.	
0743.11	Perform dental laboratory procedures to include assisting with and/or placing/removing rubber dam, preliminary impressions, study casts and occlusal registrations.	
0743.12	Identify, describe, maintain and utilize dental instruments and equipment.	
0743.13	Perform dental laboratory procedures to include the fabrication of casts, custom trays and/or temporary crowns and bridges.	
0743.14	Clean and polish removable dental appliances.	
0743.15	Identify properties and uses of abrasive agents used to polish coronal surfaces and appliances.	
0743.16	Identify and manage hazardous dental materials and wastes in accordance with the OSHA Hazard Communications and Environmental Protection Agency regulations.	
0743.17	Describe history, physics and biological effects of ionizing radiation.	
0743.18	Identify parts of the X-ray machine including accessories.	
0743.19	Demonstrate radiologic health protection techniques.	
0743.20	Perform dark room processing procedures and mix solutions.	
0743.21	Describe the proper disposal of hazardous radiographic waste.	
0743.22	Place and expose dental radiographic films and digital sensors.	
0743.23	Perform carpal radiography as required for dental diagnostic procedures.	
0743.24	Identify radiographic anatomical landmarks and pathologies.	
0743.25	Mount radiographic surveys.	
0743.26	Maintain unexposed film inventory and storage.	
0743.27	Maintain digitally acquired radiographic images.	
0743.28	Apply principles of four handed dentistry.	
0743.29	Evacuate and maintain the operating field.	
0743.30	Perform expanded functions as permitted by the West Virginia statute/law pertaining to dentistry.	
0743.31	Choose appropriate evaluation tools to assess dental patient/client response to treatment plan.	
0743.32	Assemble instruments and assist in general and specialty dental procedures.	
0743.33	Prepare tray set-ups for specific specialty procedures.	
0743.34	Select, prepare, mix and manipulate correct dental materials for general and specialty procedures.	
0743.35	Assist with and/or perform extra/intra oral examinations.	
0743.36	Perform a visual assessment of existing oral conditions.	
0743.37	Demonstrate appropriate patient/client management skills.	

Treatment Planning and Implementation Practices		Complete
Content Skill Sets		Knowledge/ Performance
0743.38	Interpret a treatment plan using a problem-solving model and evaluate for intervention opportunities.	
0743.39	Select appropriate resources to implement treatment plan.	
0743.40	Evaluate priorities in order to organize work.	

0743.41	implement procedures within their scope of practice.	
0743.42	Document actions according to facility protocol and regulatory guidelines.	

Monitoring Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0743.43	Evaluate patient/client and client response to administered treatments and procedures.	
0743.44	Analyze and report patient/client and other client response.	
0743.45	Assess need for follow up and alternative care.	

Patient/Client Status Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0743.46	Analyze information gathered regarding patient/client needs, strengths, and problems.	

Clinical Application		Complete
Content Skill Sets		Knowledge/ Performance
0743.47	Prior to clinical assignment demonstrate minimum competence in performing procedures in a laboratory setting.	
0743.48	Perform skills listed and obtained through mastery of theory content.	
0743.49	Perfect individual competency in performing dental assisting functions.	
0743.50	Assist with and participate patient/client care.	
0743.51	Assist a dentist.	

Course Description: The student in the Dental Assisting Clinical Mentoring course will participate in a school and community partnership that allows students to participate in practical “hands-on” training under the supervision of a career related professional. The partnership will take place in a clinical facility, whose staff shares insight, knowledge, and skills instruction. In addition to the clinical externship, instructional content will focus on employability skills necessary for job seeking and keeping. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Clinical Internship		Complete
Content Skill Sets		Knowledge/ Performance
0745.01	Demonstrate knowledge of the internship eligibility requirements.	
0745.02	Comply with the required facility health regulations.	
0745.03	Provide proof of personal health insurance.	
0745.04	Wear proper clinical attire.	
0745.05	Report to clinical site on time prepared to work.	
0745.06	Adhere to attendance requirements.	
0745.07	Notify clinical site and instructor when absent.	
0745.08	Correctly and safely perform entry-level procedures under the supervision of an instructor or clinical preceptor.	
0745.09	Request assistance or clarification as needed.	
0745.10	Adhere to the chain of command/lines of authority in the work setting.	
0745.11	Demonstrate the characteristics needed for advancement.	
0745.12	Establish the importance of participating in continuing education programs.	
0745.13	Organize and effectively manage time.	
0745.14	Complete documentation required of clinical internship accurately.	
0745.15	Participate in clinical internship evaluation process.	
0745.16	Utilize healthcare facility resources.	
0745.17	Meet entry-level requirements for certification or registration (where available) for the specialized occupational area.	

Legal Responsibility		Complete
Content Skill Sets		Knowledge/ Performance
0745.18	Apply procedures for accurate documentation and record keeping.	
0745.19	Implement established procedures based on risk management criteria.	
0745.20	Comply with non-discriminatory laws.	

0745.21	Recognize and comply with healthcare facilities policies and procedures.	
0745.22	Perform duties according to regulations, policies and procedures.	
0745.23	Maintain clients' rights according to the Patients'/Residents' Bill of Rights.	
0745.24	Maintain confidentiality.	
0745.25	Practice within licensure, certification, registration and legislated scope of practice.	
0745.26	Apply the doctrine of informed consent.	
0745.27	Follow mandated standards for workplace safety.	
0745.28	Implement mandated standards for harassment, labor and employment laws.	
0745.29	Interpret technological threats to confidentiality.	

Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0745.30	Demonstrate professionalism when interacting with peers, instructors, patients/residents, facility and staff.	
0745.31	Respect interdisciplinary roles of team members.	
0745.32	Apply procedures for reporting activities and behavior that affect the health, safety and welfare of others.	
0745.33	Recognize accepted ethical practices with respect to cultural, social and ethnic differences within the health care environment.	

Course Description: This course introduces dental laboratory techniques and procedures while preparing the student for entry-level employment as a dental laboratory assistant. Students will obtain the knowledge and skills necessary to assist and/or perform basic laboratory and diagnostic procedures. With participation and input of therapeutic services professionals, instructional content will incorporate project and problem-based therapeutic practices and procedures to demonstrate the criticality of these skills. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and Content skill sets.

Communication Skills and Business Office Procedures		Complete
Content Skill Sets		Knowledge/ Performance
0746.1	Communicate with patients, dental team members, other health professionals, and the public.	
0746.2	Obtain, update, and file current documentation of patient record, status, and treatment.	
0746.3	Schedule and maintain appointment book, using computer and manual appointment systems.	

Clinical Procedures		Complete
Content Skill Sets		Knowledge/ Performance
0746.4	Chart oral condition as dictated by the dentist.	
0746.5	Prepare and assist with administration of local and topical anesthesia.	

Dental Sciences		Complete
Content Skill Sets		Knowledge/ Performance
0746.6	Describe the body systems of general human anatomy.	
0746.7	Describe head and neck anatomy (e.g., muscles, cranial nerves, facial and cranial bones).	
0746.8	Name and identify the location of teeth and their surfaces.	
0746.9	Describe the tissues of the tooth, functions, and landmarks of the oral cavity.	
0746.10	Define numbering systems of permanent and primary dentitions.	

WEST VIRGINIA STANDARDS**Academic Foundations****Complete****Content Skill Sets****Knowledge/
Performance**

0746.11 Describe common pathologies of dental and general head and neck anatomy.

0746.12 Identify embryonic development of head, oral cavity and teeth.

0746.13 Recognize and describe oral pathological conditions.

0746.14 Identify the elements of nutrition, basic food groups and therapeutic diets.

0746.15 Identify dietary deficiencies and dietary practices that contribute to the manifestation of symptoms in the oral cavity.

Technical Skills**Complete****Content Skill Sets****Knowledge/
Performance**

0746.16 Apply skills to obtain training and/or certification in Health Care Provider or Professional Rescuer CPR, AED and FBAO.

0746.17 Identify various types, functions and operation of dental operatory and laboratory equipment.

0746.18 Identify types and functions of operative, restorative, surgical, prosthodontic, orthodontic and endodontic dental instruments.

0746.19 Maintain dental operatory equipment and instruments.

0746.20 Identify types and functions of specific dental hygiene instruments with emphasis on category rather than individual instruments.

0746.21 Prepare and set up for oral prophylaxis.

0746.22 Apply prophylactic treatments.

0746.23 Identify drug requirements, agencies and regulations.

0746.24 Demonstrate how to record a drug prescription in a patient/client chart.

0746.25 Identify drug actions, side effects, indications and contraindications; verify with Physician's Desk Reference or its equivalent.

0746.26 Identify drugs and agents used for treating dental-related infection.

0746.27 Identify common drugs used in dentistry including properties of anesthetics.

0746.28 Prepare and apply topical anesthetic agent.

0746.29 Prepare syringes for the administration of local anesthetics.

0746.30 Monitor/identify precautions in use of nitrous oxide-oxygen conscious sedation.

0746.31 Describe dental office emergencies and their prevention.

Intra Team Communication**Complete****Content Skill Sets****Knowledge/
Performance**

0746.32 Describe the responsibilities of consumers within the dental care system.

0746.33 Identify and define common dental terms.

0746.34 Demonstrate the use of proper dental terminology in the dental environment.

Information Collection		Complete
Content Skill Sets		Knowledge/ Performance
0746.35	Take and record medical-dental histories.	
0746.36	Record assessment of existing oral conditions.	
0746.37	Record conditions diagnosed by the dentist.	
0746.38	Record treatment-related data on the patient's/client's clinical record.	
0746.39	Record treatment plan and treatment in patient's/client's chart.	
0746.40	Maintain appointment control.	
0746.41	Maintain an active recall system.	
0746.42	Prepare and maintain accurate patient/client records.	
0746.43	Prepare and maintain patient/client financial records and collect fees.	
0746.44	Prepare and maintain office financial records.	
0746.45	Prepare and maintain dental office inventory control and purchasing.	
0746.46	Demonstrate public relations responsibilities of the secretary/receptionist.	
0746.47	Demonstrate skills in use of office equipment.	
0746.48	Maintain the dental business office environment.	
0746.49	Receive, prepare, and dismiss patients/clients and visitors.	

Treatment Planning and Implementation Practices		Complete
Content Skill Sets		Knowledge/ Performance
0746.50	Explain the treatment plan incorporating patient/client input.	
0746.51	Apply behaviors that promote health and wellness to dental science.	
0746.52	Describe strategies for the prevention of diseases including health screenings and examinations as they relate to dental science.	
0746.53	Discuss complementary (alternative) health practices as they relate to wellness and disease prevention in dental science.	
0746.54	Identify psychological considerations influencing behaviors of dental patients/clients.	
0746.55	Prepare and maintain aseptic working area and sterile instruments for intraoral procedures.	

Monitoring Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0746.56	Evaluate patient/client and client response to administered treatments and procedures.	
0746.57	Analyze and report patient/client and other client response.	

Patient/Client Status Evaluation**Complete****Content Skill Sets****Knowledge/
Performance**

0746.58 Choose appropriate evaluation tools to assess a dental patient/client and other client response to treatment plan.

0746.59 Perform a visual assessment of existing oral conditions.

Course Description: This course contains the beginning concepts and skills students will need for entry-level employment as a dental assistant in a specialty office. Major instructional concepts include orientation to specialty areas, instrumentation and procedures. Students are required to complete a work-based clinical experience in each of the specialty areas within this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Orientation to Oral Maxillofacial Surgery		Complete
Content Skill Sets		Knowledge/ Performance
0747.01	Compare the specialty of oral maxillofacial surgery with general dentistry.	
0747.02	Determine indications for oral maxillofacial surgery.	
0747.03	Differentiate between the role of a general assistant and the oral surgery assistant.	
0747.04	Relate safety practices and procedures for an oral surgery assistant.	
0747.05	Articulate terms associated with oral maxillofacial surgery and their definitions.	

Instrumentation and Procedures in Oral Maxillofacial Surgery		Complete
Content Skill Sets		Knowledge/ Performance
0747.06	Relate the importance of the chain of asepsis during a surgical procedure.	
0747.07	Classify the use of instruments designed for oral surgery.	
0747.08	Compare hand washing technique with the surgical scrub technique.	
0747.09	Demonstrate the surgical scrub technique.	
0747.10	Report the type of postoperative care given to a patient after a surgical procedure.	

Orientation to Endodontics		Complete
Content Skill Sets		Knowledge/ Performance
0747.11	Compare the duties and responsibilities of the endodontic assistant with the general chair side assistant.	
0747.12	Examine the indications and contraindications for endodontic treatment.	
0747.13	Choose examination and diagnostic procedures for endodontic emergencies.	
0747.14	Relate the importance of ethical practices in the endodontic office.	

Instrumentation and Procedures in Endodontics		Complete
Content Skill Sets		Knowledge/ Performance
0747.15	Examine the types of endodontic procedures.	
0747.16	Demonstrate the use of instrumentation designed for endodontic procedures.	
0747.17	Determine the medicaments and dental materials used in endodontics.	
0747.18	Relate procedures considered to be surgical endodontics.	

Orientation to Orthodontics		Complete
Content Skill Sets		Knowledge/ Performance
0747.19	Compare the environment of an orthodontic practice to a general dental office.	
0747.20	Examine types of malocclusion.	
0747.21	Choose types of diagnostic records used to assess orthodontic problems.	
0747.22	Relate corrective orthodontics and applicable treatment.	
0747.23	Recognize terms associated with orthodontics.	
0747.24	Determine the role of the orthodontic assistant in preparing diagnostic records.	
0747.25	Establish causes of malocclusion and dentofacial deformities.	

Instrumentation and Procedures in Orthodontics		Complete
Content Skill Sets		Knowledge/ Performance
0747.26	Examine the function of common orthodontic instruments.	
0747.27	Distinguish between the components of the fixed appliance.	
0747.28	Relate the use and function of orthodontic head gear.	
0747.29	Demonstrate methods to communicate the importance of good dietary and oral hygiene habits in orthodontic treatment.	

Clinical Internship in Dental Specialties		Complete
Content Skill Sets		Knowledge/ Performance
0747.30	Demonstrate a working knowledge of internship eligibility requirements.	
0747.31	Comply with required health regulations such as proof of physical examination and immunization status.	
0747.32	Provide proof of personal health insurance.	
0747.33	Wear proper clinical attire.	
0747.34	Conform to policies regarding performance of skills and scope of responsibility.	
0747.35	Correctly and safely perform procedures under the direct supervision of an instructor or clinical site preceptor.	

0747.36	Maintain professional standards including patient confidentiality.	
0747.37	Organize and effectively manage time.	
0747.38	Participate in internship evaluation process.	

Course Description: This course contains the dental terminology needed for entry-level employment as a Dental Assistant within both clinical and administrative areas. The course includes an overview of the role, function and utilization of dental terminology. Major instructional components include the use of dental terminology in the following areas: odontology and anatomical landmarks, infection control, chair side assisting, radiography, dental laboratory, pharmacology and emergency care, business office procedures and dental specialties. Students utilize problemsolving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Dental Terminology		Complete
Content Skill Sets		Knowledge/ Performance
0748.01	Use dental terminology in oral and written communication.	
0748.02	Determine the steps in analyzing the definition of dental acronyms.	
0748.03	Pronounce commonly used dental terms.	
0748.04	Spell and pronounce commonly used dental root words, prefixes and suffixes.	
0748.05	Recognize commonly used acronyms and abbreviations.	

Odontology and Anatomical Landmarks		Complete
Content Skill Sets		Knowledge/ Performance
0748.06	Articulate the major bones of the face and skull.	
0748.07	Articulate the major muscles of mastication and illustrate positioning.	
0748.08	Determine the location and function of the salivary glands.	
0748.09	Locate and pronounce oral cavity landmarks.	
0748.10	Articulate dentitions and related terms.	
0748.11	Examine tissues and membranes that make up the periodontium.	
0748.12	Examine tooth surfaces and characteristic landmarks.	

Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0748.13	Examine signs, symptoms and sources related to common disease conditions.	
0748.14	Determine transmission and prevention of pathogenic agents.	
0748.15	Distinguish government agencies concerned with the control of disease.	

Chair Side Assisting

Complete

Content Skill Sets		Knowledge/ Performance
0748.16	Recognize terminology related to diseases associated with teeth, tissues and structures of the head.	
0748.17	Articulate commonly used dental terms related to chair side procedures.	
0748.18	Differentiate between types and properties of dental restorative materials.	
0748.19	Relate and pronounce terms related to the preparation and isolation of the operative area.	

Radiography

Complete

Content Skill Sets		Knowledge/ Performance
0748.20	Articulate terms associated with the production and properties of roentgen rays.	
0748.21	Demonstrate acceptable methods for radiation protection.	
0748.22	Determine types of radiographs and qualities necessary for diagnosis.	
0748.23	Implement steps to process dental radiographs.	
0748.24	Assess common radiographic errors and the causes of each.	

Dental Laboratory

Complete

Content Skill Sets		Knowledge/ Performance
0748.25	Identify materials used in the dental laboratory and give examples of their uses.	
0748.26	Relate characteristics of descriptive or manipulative dental materials.	
0748.27	Demonstrate the major fixed and removable prosthodontic appliances.	

Pharmacology and Emergency Care

Complete

Content Skill Sets		Knowledge/ Performance
0748.28	Examine regulatory bodies concerned with the control of medications/drugs.	
0748.29	Determine effects of drugs on the body.	
0748.30	Examine parts of a prescription and explain routes of drug administration.	
0748.31	Distinguish the classification of drugs commonly used in dentistry.	
0748.32	Research equipment and materials needed in prevention and treatment of emergencies.	
0748.33	Articulate terms related to CPR and other common medical emergencies.	
0748.34	Examine common emergencies occurring in a dental office.	

Business Office Procedures**Complete****Content Skill Sets****Knowledge/
Performance**

0748.35	Demonstrate oral and written communications related to office procedures.	
0748.36	Compare types of appointments and correlated scheduling terms.	
0748.37	Examine dental insurance terms and discuss types of dental insurance plans.	
0748.38	Examine common banking terms and discuss types of financial disbursements used in a dental office.	
0748.39	Select terms related to purchasing and inventory of supplies.	
0748.40	Relate legal and ethical terms and definitions used in a dental business office.	

Course Description: The student within the Supervised Dental Assistant Experience course will focus on instructional components that will enable him/her to work as an effective member of the dental team. Students will be introduced to the specialties of dentistry and the requirements necessary to function as an administrative and chair side assistant in a dental office. Students utilize problemsolving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Practice Management		Complete
Content Skill Sets		Knowledge/ Performance
0749.01	Demonstrate knowledge of protocol and procedures used by the dental office receptionist.	
0749.02	Differentiate between verbal and non-verbal language using role play.	
0749.03	Evaluate the importance of the first impression a patient should receive upon entering a dental office.	
0749.04	Demonstrate proper protocol for answering an incoming call.	
0749.05	Critique proper protocol for handling a difficult patient via telephone and/or in person.	
0749.06	Examine the information all messages should contain.	
0749.07	Compare effective ways of scheduling patients.	

Administrative Office Dental Assistant		Complete
Content Skill Sets		Knowledge/ Performance
0749.08	Demonstrate knowledge of protocol and procedures used by the administrative office manager.	
0749.09	Differentiate dental office staff and their areas of responsibility.	
0749.10	Examine marketing ideas for the dental office.	
0749.11	Differentiate between accounts payable and accounts receivable.	
0749.12	Establish uses of telephone and business office technology.	
0749.13	Recognize the need to be fluent with computerized and manual systems for patient management.	
0749.14	Illustrate filing procedures.	
0749.15	Examine correspondence within the dental office, with other dental professionals and with insurance companies.	

Dental Specialties/Endodontics		Complete
Content Skill Sets		Knowledge/ Performance
0749.16	Demonstrate knowledge of procedures and processes used in endodontics.	
0749.17	Examine endodontics and endodontist.	

0749.18	Establish the definition of pulpal disease.	
0749.19	Select instruments and materials used in endodontics, examining the function of each.	
0749.20	Examine endodontic surgical procedures.	

Dental Specialties/Oral and Maxillofacial Surgery		Complete
Content Skill Sets		Knowledge/ Performance
0749.21	Demonstrate knowledge of procedures and processes used in oral and maxillofacial surgery.	
0749.22	Select instruments used in surgery and interpret their use.	
0749.23	Recognize the importance of aseptic procedures prior to and following surgery in the dental office.	
0749.24	Determine the written and oral postoperative instructions to be given to patients.	
0749.25	Differentiate between surgical procedures performed in the dental office and the hospital.	

Dental Specialties/Orthodontics		Complete
Content Skill Sets		Knowledge/ Performance
0749.26	Demonstrate knowledge of procedures and processes used in orthodontics.	
0749.27	Characterize the orthodontic setting.	
0749.28	Outline the critical roles and duties of a dental assistant in the orthodontic office.	
0749.29	Examine the causes of malocclusion.	
0749.30	Differentiate between preventive, interceptive and corrective orthodontics.	
0749.31	Distinguish between fixed and removable appliances.	
0749.32	Assess the stages of orthodontic treatment.	
0749.33	Evaluate how teeth are retained in position after orthodontic treatment is complete.	

Dental Specialties/Pediatrics		Complete
Content Skill Sets		Knowledge/ Performance
0749.34	Demonstrate knowledge of procedures and processes used in pediatrics.	
0749.35	Characterize the importance of team work in the pediatric office.	
0749.36	Determine common behavior of children throughout the stages of growth and development.	
0749.37	Establish the role of parent/guardian/family members in the treatment of a child.	
0749.38	Relate the unique equipment geared toward pediatric dentistry.	
0749.39	Recognize signs of child abuse and the procedure for reporting suspected child abuse.	

Dental Specialties/Periodontics		Complete
--	--	-----------------

Content Skill Sets		Knowledge/ Performance
0749.40	Demonstrate knowledge of procedures and processes used in periodontics.	
0749.41	Differentiate between the members of the periodontal team and their roles.	
0749.42	Examine the diagnostic procedure from start to completion and follow-up for periodontic patients.	
0749.43	Differentiate between surgical and non-surgical treatment procedures.	
0749.44	Establish the role of the patient in maintaining the arrest of periodontal disease.	

Dental Specialties/Prosthodontics		Complete
Content Skill Sets		Knowledge/ Performance
0749.45	Demonstrate knowledge of procedures and processes used in prosthodontics.	
0749.46	Pour, trim and articulate models.	
0749.47	Construct custom trays (i.e. Night guard, bleaching tray, mouthpiece).	
0749.48	Differentiate between waxes and their use.	
0749.49	Outline the procedure for preparing a fixed crown/bridge for patients.	
0749.50	Outline the procedure for preparing a removable appliance for patients.	
0749.51	Relate the importance of following safety precautions during all lab procedures.	

Dental Specialties/Public Health		Complete
Content Skill Sets		Knowledge/ Performance
0749.52	Demonstrate knowledge of procedures and processes used in public health.	
0749.53	Assess the role of a dental health provider.	

Dental Specialties/Oral and Maxillofacial Radiologist		Complete
Content Skill Sets		Knowledge/ Performance
0749.54	Demonstrate knowledge of procedures and processes used in oral and maxillofacial radiology.	
0749.55	Assess the role of the oral and maxillofacial radiologist.	

Dental Specialties/Oral Pathologist		Complete
Content Skill Sets		Knowledge/ Performance
0749.56	Students will demonstrate knowledge of procedures and processes used in oral pathology.	
0749.57	Examine the career and duties of the oral pathologist.	

Course Description: In this course, the Point of Care Technician and the laboratory student will be introduced to procedures in the hematology, coagulation and microbiology departments of the laboratory. Additional content within this course includes measurement and assessment, metrics and measurements, communication skills, legal and ethical issues, medical and surgical asepsis, microbiology techniques, as well as body structure and function. Students utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0755.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0755.02	Describe the components of verbal and nonverbal communication and situations in which these skills can be effectively used.	
0755.03	Explain how active listening skills can improve client/individual and team communication.	
0755.04	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0755.05	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0755.06	Explain the laws (e.g., liability, influence on client care).	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0755.07	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0755.08	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	

WEST VIRGINIA STANDARDS

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0755.09	Apply skills to obtain training and/or certification in Health Care Provider or Professional Rescuer CPR, AED and FBAO.	
0755.10	Apply skills to obtain training and/or certification in First Aid.	
0755.11	Identify various types, functions and operations of laboratory equipment.	
0755.12	Complete the certification requirements of the phlebotomy curriculum.	

Multidisciplinary Communications		Complete
Content Skill Sets		Knowledge/ Performance
0755.13	Demonstrate interviewing skills.	
0755.14	Choose correct syntax and grammar.	
0755.15	Organize, write and compile technical information and summaries.	
0755.16	Use medical terminology in order to interpret, transcribe and communicate information, data, and observations.	

Assessment of Patient/Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0755.17	Analyze available information to assess client viability.	
0755.18	Evaluate and appraise appropriateness of information.	
0755.19	Evaluate patient/client response to treatment and/or procedure.	

Patient/Client Movement		Complete
Content Skill Sets		Knowledge/ Performance
0755.20	Analyze available information to assess client viability.	
0755.21	Evaluate and appraise appropriateness of information.	
0755.22	Evaluate patient/client response to treatment and/or procedure.	
0755.23	Analyze available information to assess client viability.	
0755.24	Evaluate and appraise appropriateness of information.	
0755.25	Evaluate patient/client response to treatment and/or procedure.	
0755.26	Analyze available information to assess client viability.	
0755.27	Evaluate and appraise appropriateness of information.	
0755.28	Evaluate patient/client response to treatment and/or procedure.	
0755.29	Analyze available information to assess client viability.	

0755.30	Evaluate and appraise appropriateness of information.	
0755.31	Evaluate patient/client response to treatment and/or procedure.	
0755.32	Analyze available information to assess client viability.	

Patient/Client Interaction		Complete
Content Skill Sets		Knowledge/ Performance
0755.33	Assess patient's/client's ability to comprehend.	
0755.34	Adjust and modify communication based on assessment.	
0755.35	Verify patient's/client's understanding.	
0755.36	Apply active listening skills using reflection, restatement and clarification techniques.	
0755.37	Address patient/client concerns in a positive manner.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
0755.38	Define the term "nosocomial" infection.	
0755.39	Describe/practice procedures for infection prevention.	
0755.40	Discuss/perform isolation procedures.	
0755.41	Identify potential routes of infection.	
0755.42	Distinguish and perform procedures which ensure reliability of test results when collecting blood specimens.	
0755.43	Demonstrate knowledge of and practice appropriate patient/client safety.	
0755.44	Practice laboratory safety in accordance with established procedures.	
0755.45	Follow documentation procedures for work related accidents.	
0755.46	Implement appropriate Joint Commission patient/client safety goals.	

Preparation		Complete
Content Skill Sets		Knowledge/ Performance
0755.47	Comprehend scope of practice.	
0755.48	Evaluate request for appropriateness.	
0755.49	Coordinate interdisciplinary services if applicable.	
0755.50	Choose protocol based on resources.	
0755.51	Choose appropriate protocol based on client assessment and request.	
0755.52	Initiate services based on request.	
0755.53	Explain in detail the importance of identifying patient/client correctly when drawing blood.	
0755.54	Verify patient/client identification.	
0755.55	Ensure patient/client readiness and assess for contraindication.	

0755.56	Explain to the patient/client the procedure to be used in specimen collection.	
0755.57	Obtain patient/client informed consent if applicable.	
0755.58	Describe routine procedures for transporting and processing specimens.	
0755.59	Describe the significance of time constraints for specimen collection and delivery.	
0755.60	Demonstrate knowledge of accessioning procedures.	
0755.61	Aliquot samples for testing.	
0755.62	Follow protocol for accepting verbal test orders.	

Procedure		Complete
Content Skill Sets		Knowledge/ Performance
0755.63	Be cognizant of their scope of practice.	
0755.64	Be competent within their scope of practice.	
0755.65	Perform procedures according to protocol.	
0755.66	Produce appropriate documentation.	
0755.67	Modify procedure as required within constraints of patient/client and personal safety.	
0755.68	Explain the CLIA test complexity model and describe the characteristics required for FDA classification of a test as waived.	
0755.69	Explain the categories of testing personnel established by CLIA regulations.	
0755.70	Describe the basic educational and/or experiential qualifications for each category.	
0755.71	Explain the differences in requirements for a physician practice laboratory, a hospital laboratory and an independent clinical laboratory.	
0755.72	Describe Alternate Site Testing requirements as they apply to hospitals in West Virginia.	
0755.73	Compare and contrast Alternate Site Testing requirements with the requirements for CLIA waived testing and Provider Performed Microscopy, apply the concepts of Point-of-Care or Near Patient/Client testing to these requirements.	
0755.74	Demonstrate an understanding of the concepts of "scope of practice", "professional judgment" and "duty/obligation to report".	

Evaluation and Reporting		Complete
Content Skill Sets		Knowledge/ Performance
0755.75	Assess and evaluate the quality of results.	
0755.76	Provide analysis, construct and apply appropriate corrective measures/actions.	
0755.77	Assess problem-solving skills.	
0755.78	Evaluate timeliness and productivity.	
0755.79	Choose appropriate evaluation methods.	
0755.80	Evaluate and apply appropriate tools.	
0755.81	Use written, oral and electronic communication skills to produce reports.	
0755.82	Deliver reports to all appropriate parties.	
0755.83	Confirm that the parties involved receive all necessary information.	

Course Description: The instructional content will focus on advanced procedures necessary for entry-level employment in the physician’s office and the medical laboratory. Course content will include blood bank and serology procedures, basic chemistry procedures, fecal testing, and electrocardiography. Additional instruction will provide students with key employability skills for job seeking and keeping. Eligible students will participate in a clinical internship and upon successful completion will prepare for credentialing, postsecondary education, and/or employment opportunities. A review of guidelines for test taking and an exploration of the college requirements for the laboratory occupation and other healthcare careers will be provided. All standards and objectives must be mastered before the student is approved to pursue credentialing and/or industry validation. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

WEST VIRGINIA STANDARDS

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0756.01	Perform techniques of microbiology related to disinfection techniques.	
0756.02	Discuss techniques of microbiology related to isolation techniques.	
0756.03	Perform techniques of microbiology related to sterilization techniques.	
0756.04	Perform techniques of microbiology related to slide preparation.	
0756.05	Explain principles and use of the microscope.	
0756.06	Describe the staining and microscopic examination of gram stains.	
0756.07	Discuss techniques of microbiology related to inoculation and transfer of cultures.	
0756.08	Perform basic techniques of microbiology.	
0756.09	Discuss techniques of microbiology related to preparation of artificial culture media.	
0756.10	Describe urinalysis techniques related to normal and abnormal components of the urine.	
0756.11	Perform urinalysis techniques related to collection and preservation of specimens.	
0756.12	Perform urinalysis techniques related to physical properties of urine.	
0756.13	Perform urinalysis techniques related to dipstick urine pH and describe clinical significance.	
0756.14	Discuss urinalysis techniques related to urine specific gravity techniques.	
0756.15	Perform dipstick or tablet (nonautomated) urinalysis techniques related to performance of chemical tests.	
0756.16	Discuss basic techniques of hematology related to normal and abnormal physiology.	

Multidisciplinary Communications		Complete
Content Skill Sets		Knowledge/ Performance
0756.17	Explain the CLIA test complexity model and describe the characteristics required for FDA classification of a test as waived.	

0756.18	Explain the categories of testing personnel established by both CLIA and the West Virginia regulations; describe the basic educational and/or experiential qualifications for each category.	
0756.19	Explain the differences in requirements for a physician practice laboratory, a hospital laboratory and an independent clinical laboratory.	
0756.20	Describe Alternate Site Testing requirements as they apply to hospitals in West Virginia.	
0756.21	Compare and contrast Alternate Site Testing requirements with the requirements for CLIA waived testing and Provider Performed Microscopy; apply the concepts of Point-of-Care or Near Patient/client testing to these requirements.	
0756.22	Demonstrate an understanding of the concepts of “scope of practice”, “professional judgment” and “duty/obligation to report.”	
0756.23	Explain the characteristics of the International Classification of Disease System (ICD) and its function in substantiating the clinical record.	
0756.24	Explain the characteristics of the Healthcare Common Procedure Coding System (HCPCS) including the two primary levels of codes and its function in reporting medical procedures including laboratory testing.	
0756.25	Explain the differences between analyte method and unlisted procedure CPT codes and the hierarchy for selecting CPT codes for reporting laboratory tests.	
0756.26	Describe the concept of medical necessity as set forth in National or Local coverage Decisions (NCD and LCD) for lab testing under the Medicare Program.	
0756.27	Review the concept of congressionally–mandated screening tests under the Medicare Program.	

Clinical Application		Complete
Content Skill Sets		Knowledge/ Performance
0756.28	Observe and participate as appropriate in skills outlined in outcomes for medical lab assisting.	
0756.29	Complete clinical rotations.	

Course Description: Students examine the interactions of human body systems as they explore identity, power, movement, protection, and homeostasis. Exploring science in action, students build organs and tissues on a skeletal Maniken®; use data acquisition software to monitor body functions such as muscle movement, reflex, and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases.

Notes: This course will fulfill the requirement for a third science course graduation requirement.

*This course aligns with Project Lead the Way (PLTW) Biomedical Science. To teach PLTW courses, teachers must attend and successfully complete a course-specific training session sponsored by PLTW. Required skillsets are dispersed at that time.

Refer to policy 2520.13 Guidance Document for recommended electives

Work Habits		Complete
Content Skill Sets		Knowledge/ Performance
0766.01	Demonstrate professional work habits.	
0766.02	Demonstrate the ability to organize, implement, and troubleshoot specific tasks.	
0766.03	Demonstrate the ability to work in teams and as an individual.	

Laboratory Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
0766.04	Demonstrate competency in validating and using laboratory equipment.	
0766.05	Demonstrate competency in using computer office applications.	
0766.06	Perform basic laboratory math skills.	
0766.07	Apply statistical analysis to interpret data.	
0766.08	Demonstrate the ability to use the scientific method.	
0766.09	Demonstrate the principles of DNA isolation.	
0766.10	Perform Polymerase Chain Reaction (PCR).	
0766.11	Perform electrophoresis.	
0766.12	Perform separation techniques.	
0766.13	Explain and perform aseptic technique.	
0766.14	Demonstrate the concepts of microbial culture.	

Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0766.15	Demonstrate the knowledge of bioethics.	
0766.16	Demonstrate the knowledge of professional ethics.	

Safety in the Biotechnology Laboratory		Complete
Content Skill Sets		Knowledge/ Performance
0766.17	Demonstrate general requirements for laboratory safety.	
0766.18	Identify and use personal protective equipment (PPE).	
0766.19	Demonstrate ability to implement safety protocols.	
0766.20	Follow SDS guidelines for handling, storage, and disposal of hazardous material.	
0766.21	Demonstrate knowledge of safety regulatory agencies, such as OSHA.	

Working in a Highly Regulated Environment		Complete
Content Skill Sets		Knowledge/ Performance
0766.22	Document lab activities and findings according to guidelines.	

Appropriate Use of Equipment and Instrumentation		Complete
Content Skill Sets		Knowledge/ Performance
0766.23	Use laboratory glassware.	
0766.24	Use volumetric equipment.	
0766.25	Use electrophoresis equipment.	
0766.26	Use balances.	
0766.27	Use centrifuges.	
0766.28	Use Microscopes.	
0766.29	Demonstrate knowledge of temperature regulating devices (e.g., water baths, incubators).	

WEST VIRGINIA STANDARDS

Interconnections Among Body Systems		Complete
Content Skill Sets		Knowledge/ Performance
0766.30	List the major organs within each human body system and the functions of the different human body systems.	
0766.31	Describe how multiple body systems are interconnected.	

0766.32	Describe how the interconnections and interactions of multiple body systems are necessary for life.	
0766.33	Explain how directional terms and regional terms can be used to identify locations on the body.	
0766.34	Demonstrate key directional terms on a model of the human body.	
0766.35	Apply knowledge of human body systems to indicate how damage to one system can impact function in another system.	
0766.36	Discuss similarities between all humans and relate this discussion to human identity.	
0766.37	Reflect on student's own identity.	

Human Tissues and Cells		Complete
Content Skill Sets		Knowledge/ Performance
0766.38	Describe the differences in the appearance of epithelial and connective tissues.	
0766.39	Explain the basic structure and function of the skeletal system.	
0766.40	Model tissue placement in the face around the eyes and mouth.	
0766.41	Interpret bone markings, bone landmarks and bone measurements to provide information about gender, race, ethnicity and height.	
0766.42	Use mathematical calculations to predict height from the length of a bone.	

DNA and Identity		Complete
Content Skill Sets		Knowledge/ Performance
0766.43	Describe the way in which characteristics such as fingerprints, facial features and retinal patterns can be used to establish identity.	
0766.44	Design a comprehensive security plan for a real-world situation.	
0766.45	Read an interview with a forensic anthropologist and write an interview with a DNA analyst.	

Nervous System-Brain		Complete
Content Skill Sets		Knowledge/ Performance
0766.46	Describe the general structure and function of the central nervous system.	
0766.47	Interpret how a breakdown in communication would impact the function of the human body.	
0766.48	Determine the region of the brain responsible for specific actions, emotions, or functions of humans.	
0766.49	Apply knowledge of brain function to determine the parts of the brain used to complete a list of daily activities.	

Nervous System		Complete
Content Skill Sets		Knowledge/ Performance
0766.50	Explain the basics of how electrical signals are created and transmitted in the human body.	
0766.51	Explain the roles of ions in creating electrical impulses in the human body.	
0766.52	Explain in general terms how neurotransmitters help propagate electrical impulses.	

0766.53	Describe neuron structure and function.	
0766.54	Discuss the generalities of ascending and descending pathways of the CNS.	
0766.55	Understand how reflex versus reaction time applies to pathways of processing in the brain.	
0766.56	Demonstrate an understanding of how a serious nervous system disorder impacts quality of life.	
0766.57	Research and report on biomedical professionals who can improve the quality of life for those coping with nervous system dysfunction.	
0766.58	Using data acquisition software to complete a laboratory investigation on the reflexes in the human body and reaction time.	

Endocrine System		Complete
Content Skill Sets		Knowledge/ Performance
0766.59	Explain the basics of how hormones interact with target cells.	
0766.60	Explain the difference between endocrine and exocrine glands as well as protein/peptide and steroid hormones.	
0766.61	Use the internet to research and use the research to interpret the symptoms and physical characteristics of a given patient to determine an endocrine system malfunction.	
0766.62	Explain in general how hormones contribute to maintain homeostasis.	
0766.63	Understand how a team of medical professionals use an evidence board to help in solving a medical case.	

Nervous System-Human Sight		Complete
Content Skill Sets		Knowledge/ Performance
0766.64	Describe the structures and function of the eye.	
0766.65	Describe how the eye and the brain work together to allow a person to see.	
0766.66	Explain visual perception, including visual acuity, depth perception, peripheral vision, color vision, and the interpretation of optical illusions.	
0766.67	Discuss how a medical examiner uses a Snellen Chart at 20 feet with optical occluder (cover) to isolate each eye for individual sight.	
0766.68	Interpret results from vision testing.	
0766.69	Understand that different types of lenses will refocus light and correct problems with vision.	
0766.70	Understand the difference between an optometrist, an ophthalmologist and an optician.	

Digestive System		Complete
Content Skill Sets		Knowledge/ Performance
0766.71	Describe the human body systems that absorb process and distribute oxygen, water and food.	
0766.72	Describe the structure and function of organs in the human digestive system.	
0766.73	Explain that energy is stored and released from ATP.	
0766.74	Assess overall health through analysis of calories consumed and calories expended in daily activities.	
0766.75	Explain the structure and function of, enzymes and co enzymes and how they all work together.	

0766.76	Explain the importance of enzymes on maintaining homeostasis in the human body.	
0766.77	Demonstrate an understanding of both lock and key models and induced fit models of enzyme function.	
0766.78	Interpret enzyme function in the digestive system through laboratory experiments.	
0766.79	Build a model of the human digestive system.	
0766.80	Design and perform an experiment to determine optimal conditions for digestive enzyme reactions.	

Respiratory System		Complete
Content Skill Sets		Knowledge/ Performance
0766.81	Describe the structure and function of the human respiratory system.	
0766.82	Explain that oxygen and carbon dioxide are exchanged in the lungs and where this occurs.	
0766.83	Explain the transport of oxygen to all cells in the body through the close connection between the respiratory and cardiovascular systems.	
0766.84	Interpret data charts and graphs to determine tidal volume, aspiratory reserve volume, expiratory reserve volume, and vital capacity of lungs.	
0766.85	Understand the difference between short term control and long-term control via medication and that there are different administration routes for each.	
0766.86	Explore the education and career path of a respiratory therapist.	

Excretory System		Complete
Content Skill Sets		Knowledge/ Performance
0766.87	Describe the structure and function of the human urinary system.	
0766.88	Describe the structure and function of the kidney.	
0766.89	Describe and illustrate the movement of fluids and ions in and out of the various parts of the nephron.	
0766.90	Understand that aldosterone and ADH (anti-diuretic hormone) effect the nephron and overall water balance.	
0766.91	Illustrate the composition of normal blood and normal urine.	
0766.92	Build a model of the urinary system.	
0766.93	Test simulated urine sample and apply knowledge to diagnose disease.	
0766.94	Analyze the use of urinalysis as a medical intervention.	

Musculoskeletal System		Complete
Content Skill Sets		Knowledge/ Performance
0766.95	Describe the structure and function of the three types of human body joints.	
0766.96	Describe using appropriate vocabulary, the motion of bones in the different joint types.	
0766.97	Identify range of motion measurements to specific joint actions and develop a plan to measure the range of motion.	
0766.98	Compare the structure of a cow elbow to a human elbow.	

0766.99	Discuss differences in an individual's range of motion and the reason for these differences.	
0766.100	Discuss ways to improve joint flexibility such as stretching and other lifestyle modifications.	

Muscular System		Complete
Content Skill Sets		Knowledge/ Performance
0766.101	Describe the structure and function of the three types of muscle tissue.	
0766.102	Identify specific muscles by deciphering muscle names.	
0766.103	Describe the requirements for muscle contraction.	
0766.104	Explain the sliding filament mechanism of muscle contraction.	
0766.105	Explain the connection between nerves and muscle.	
0766.106	Interpret muscle function by examining structure and attachment to bone.	
0766.107	Build a model of a muscle group.	
0766.108	By using the sliding filament theory, explain why rigor mortis occurs.	
0766.109	Discuss how muscle contributes to human identity.	
0766.110	Identify some of the many roles of calcium in the body.	

Circulatory System		Complete
Content Skill Sets		Knowledge/ Performance
0766.111	Explain the relationship between the heart and lungs and the path of blood flow through these organs.	
0766.112	Define pulse and blood pressure and locate pulse points on the body.	
0766.113	Identify major arteries and veins and specify the body region each supply.	
0766.114	Interpret ankle brachial index (ABI) to determine possible blood vessel blockages.	
0766.115	Understand the relationship between the amount of blood pumped by the heart, through analysis of cardiac output values, and the health of other body organs and systems.	
0766.116	Explore peripheral artery disease through the analysis of patient symptoms and diagnostic test results.	
0766.117	Explain the structure and function of veins and explain how varicose veins form.	
0766.118	Build a model of the major circulatory routes.	
0766.119	Analyze self-risk for cardiovascular disease.	

Human Energy System		Complete
Content Skill Sets		Knowledge/ Performance
0766.120	Explain that the human body generates ATP for energy estimate and the time period that this energy will last.	
0766.121	Assess muscle fatigue through interpretation of EMG and grip strength.	
0766.122	Design experiments to test ability to overcome muscle fatigue.	
0766.123	Describe the major things that happen in the major body systems while running a race.	

0766.124	Understand how a training plan is designed for a fictional client, incorporating the specific health situation of the client.	
0766.125	Identify the reactants, products, and basic functions of aerobic and anaerobic cellular respiration.	

Integumentary System		Complete
Content Skill Sets		Knowledge/ Performance
0766.126	Describe the structure and function of human skin.	
0766.127	Explain burn degree terms in relation to damaged layers of the skin.	
0766.128	Explain how burn damage to the skin affects function and homeostasis in the body.	
0766.129	Explain in general how the human body senses and processes pain signals.	
0766.130	Explain why pain is necessary to human survival.	
0766.131	Compare normal human skin and burnt damaged skin.	
0766.132	Analyze the effects of rehabilitation of a burn victim and changes to everyday life.	

Skeletal System		Complete
Content Skill Sets		Knowledge/ Performance
0766.133	Describe and compare the structure and function of compact and spongy bone.	
0766.134	Describe types of bone fractures.	
0766.135	Identify bone fractures on x-rays and describe possible damage to internal organs.	
0766.136	Understand that the hormones calcitonin and parathyroid hormone influence calcium balance and thus the strength of bone in the human body.	
0766.137	Identify the stages of bone remodeling.	
0766.138	Identify lifestyle choices that affect development and maintenance of healthy bones	

Immune System		Complete
Content Skill Sets		Knowledge/ Performance
0766.139	Describe the general structure and function of the lymphatic and immune system.	
0766.140	Describe in general the interaction between antigens and antibodies.	
0766.141	Explain the role of specified blood cells in specific immunity.	
0766.142	Understand how a pedigree can assist in determining blood types in a family.	
0766.143	Interpret data on antibody concentrations after an infection.	
0766.144	Determine potential blood donors for a transfusion through the analysis of blood types and Rh compatibility.	

Homeostasis		Complete
Content Skill Sets		Knowledge/ Performance
0766.145	Describe the effects of an extreme external environment on human body systems.	
0766.146	Explain in general how body systems work together to maintain homeostasis and complete basic functions.	
0766.147	Understand how initial symptoms of an illness can lead to diagnosis and treatment.	
0766.148	Understand the need to evaluate medical data to create a unique case study.	
0766.149	Understand that different diseases require different medical interventions.	
0766.150	Research the role of various medical professionals to diagnose and treat a fictional patient.	
0766.151	Reflect on self-identity.	
0766.152	Write a summary of career goals.	

Course Description: The PTCB Preparation class prepares the student to participate in a clinical internship in PTCB Clinical Applications. Instructional focus is on a self-paced curriculum provided by PassAssured's Pharmacy Technician Training Program, Pass Assured, LLC. This curriculum is supported by teacher instruction and a variety of textbook and online resources. Using a modular format, this system allows the student to gain the knowledge and skills required for certification and entrylevel employment as a Pharmacy Technician. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0771.01	Discuss healthcare fields and the types of workers needed.	
0771.02	Describe employer behavioral expectations of healthcare personnel.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0771.03	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0771.04	Describe the use of information technology in healthcare settings.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0771.05	Explain the laws (e.g., liability, influence on client care).	
0771.06	Explore legal issues such as sexual harassment, wrongful discharge, negligence, malpractice and violence in the workplace (e.g., abuse, neglect, exploitation, and the Vulnerable Adults law).	
0771.07	Identify the legal issues related to informed consent, advanced directives, ensuring the clients' rights and responsibilities, and accurate documentation.	
0771.08	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0771.09	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	

WEST VIRGINIA STANDARDS

Orientation		Complete
Content Skill Sets		Knowledge/ Performance
0771.10	Differentiate certification, licensure and registration.	
0771.11	Determine certification requirements for the pharmacy technician.	
0771.12	Recognize the origin and goal of the Pharmacy Technician Certification Board (PTCB).	
0771.13	Examine the role of the PTCB.	
0771.14	Distinguish professional organizations related to the field of pharmacy.	
0771.15	Characterize the functions and responsibilities of the pharmacy technician.	
0771.16	Classify the three areas in which skills will be measured on the Pharmacy Technician Certification Exam.	
0771.17	Determine the requirements and process needed to maintain certification.	

Federal Laws		Complete
Content Skill Sets		Knowledge/ Performance
0771.18	Examine laws and legislation affecting the pharmacy industry.	
0771.19	Recognize the importance of the Controlled Substance Act of 1970 as it relates to the manufacturing, distribution and dispensing of controlled substances based on abuse potential.	
0771.20	Differentiate filing procedures, maintaining records according to State and Federal Laws and drug substitution requirements.	
0771.21	Evaluate the mission of the Drug Enforcement Administration.	
0771.22	Determine the process by which a doctor obtains a DEA Number.	
0771.23	Establish the purpose of a prescriber DEA Number.	
0771.24	Illustrate the process to determine the validity of a DEA Number.	
0771.25	Distinguish the storage requirements for Schedule II Drugs.	
0771.26	Investigate the four phases of Investigational Drugs.	

Medication Review		Complete
Content Skill Sets		Knowledge/ Performance
0771.27	Demonstrate basic terms and abbreviations used in the pharmacy.	
0771.28	Differentiate chemical, generic and trade names of drugs.	
0771.29	Compare dosage forms of drugs.	
0771.30	Investigate methods of administering medications.	
0771.31	Examine the basic structure and functions of the nervous system.	
0771.32	Report uses, mechanism of action, side effects, and examples of the following drug classifications for:	
0771.33	<ul style="list-style-type: none"> • CNS drugs • sedative hypnotics • skeletal muscle relaxants 	

	<ul style="list-style-type: none"> • anticonvulsants • narcotic analgesics • antipsychotics • antidepressants • antianxiety agents • CNS stimulants • anti-Parkinson's agents • sympathomimetic agents • sympatholytic agents • parasympathomimetics agents • parasympatholytic agents • neuromuscular blocking agents 	
0771.34	Chart the location of the major endocrine glands and their hormone secretion.	
0771.35	Differentiate between local and systemic hormones.	
0771.36	Differentiate histamine and prostaglandins.	
0771.37	Report uses, mechanism of action, side effects, and examples of the following systemic hormones: <ul style="list-style-type: none"> • androgens • estrogens • progestins • corticosteroids • insulin • oral hypoglycemics • oxytocics • thyroid hormones • anti-thyroid hormones 	
0771.38	Examine the basic structure and functions of the cardiovascular system.	
0771.39	Determine the meaning of arrhythmia and angina.	
0771.40	Report uses, mechanism of action, side effects, and examples of the following drug classifications for cardiovascular drugs: <ul style="list-style-type: none"> • cardiac glycosides • antiarrhythmics • antianginals • vasodilators • calcium channel blockers • angiotensin-converting enzyme (ACE) inhibitors • angiotensin II inhibitors • beta-adrenergic blockers • alpha-adrenergic blockers • antilipidemic agents 	
0771.41	Examine the basic structure and functions of the renal system.	
0771.42	Determine the uses and mechanism of action of diuretics.	

0771.43	Report uses, mechanism of action, side effects, and examples of types of diuretics: <ul style="list-style-type: none"> • thiazides • loop • potassium sparing • combination • osmotics 	
0771.44	Characterize gout.	
0771.45	Report uses, mechanism of action, and side effects of gout agents: <ul style="list-style-type: none"> • allopurinol • probenecid • colchicine 	
0771.46	Compare electrolytes.	
0771.47	Examine the uses, side effects, and examples of electrolytes.	
0771.48	Compare bacteriostatic and bactericidal.	
0771.49	Report uses, mechanism of action, and side effects of anti-infectives: <ul style="list-style-type: none"> • antibacterial • urinary anti-infectives • antibiotics • penicillins • cephalosporins • quinolones • macrolides • Tetracyclines • aminoglycosides • antifungals • antiparasitic agents • antihelminthics • amebicides • antitubercular agents • antiviral agents 	
0771.50	Characterize cancer.	
0771.51	Characterize Leucovorin.	
0771.52	Report uses, mechanism of action, and side effects of chemotherapy drugs: <ul style="list-style-type: none"> • antimetabolites • alkylating agents • hormones • vinca alkaloids • asparaginase • antibiotics 	
0771.53	Examine the composition and functions of blood.	

0771.54	Determine the treatment for Iron Deficiency Anemia.	
0771.55	Determine the treatment for Megaloblastic Anemia.	
0771.56	Report uses, mechanism of action, and side effects of agents used in blood disorders: <ul style="list-style-type: none"> • anticoagulants • hemostatics • antithrombotics • thrombolytics • hemorrhheologic agents • antianemics 	
0771.57	Characterize vitamins.	
0771.58	Determine examples and uses of fat-soluble vitamins.	
0771.59	Determine examples and uses of water-soluble vitamins.	
0771.60	Distinguish minerals as related to normal body functions.	

Aseptic Techniques		Complete
Content Skill Sets		Knowledge/ Performance
0771.62	Demonstrate basic terms and abbreviations used in the pharmacy.	
0771.63	Differentiate chemical, generic and trade names of drugs.	
0771.64	Compare dosage forms of drugs.	
0771.65	Investigate methods of administering medications.	
0771.66	Examine the basic structure and functions of the nervous system.	
0771.67	Report uses, mechanism of action, side effects, and examples of the following drug classifications for CNS drugs: <ul style="list-style-type: none"> • sedative hypnotics • skeletal muscle relaxants • anticonvulsants • narcotic analgesics • antipsychotics • antidepressants • antianxiety agents • CNS stimulants • anti-Parkinson's agents • sympathomimetic agents • sympatholytic agents • parasympathomimetics agents • parasympatholytic agents • neuromuscular blocking agents 	
0771.68	Chart the location of the major endocrine glands and their hormone secretion.	
0771.69	Differentiate between local and systemic hormones.	
0771.70	Differentiate histamine and prostaglandins.	

0771.71	Report uses, mechanism of action, side effects, and examples of the following systemic hormones: <ul style="list-style-type: none"> • androgens • estrogens • progestins • corticosteroids • insulin • oral hypoglycemics • oxytocics • thyroid hormones • anti-thyroid hormones 	
0771.72	Examine the basic structure and functions of the cardiovascular system.	
0771.73	Determine the meaning of arrhythmia and angina.	
0771.74	Report uses, mechanism of action, side effects, and examples of the following drug classifications for cardiovascular drugs: <ul style="list-style-type: none"> • cardiac glycosides • antiarrhythmics • antianginals • vasodilators • calcium channel blockers • angiotensin-converting enzyme (ACE) inhibitors • angiotensin II inhibitors • beta-adrenergic blockers • alpha-adrenergic blockers • antilipidemic agents 	
0771.75	Examine the basic structure and functions of the renal system.	
0771.76	Determine the uses and mechanism of action of diuretics.	
0771.77	Report uses, mechanism of action, side effects, and examples of types of diuretics: <ul style="list-style-type: none"> • thiazides • loop • potassium sparing • combination • osmotics 	
0771.78	Characterize gout.	
0771.79	Report uses, mechanism of action, and side effects of gout agents: <ul style="list-style-type: none"> • allopurinol • probenecid • colchicine 	
0771.80	Compare electrolytes.	

Calculations		Complete
Content Skill Sets		Knowledge/ Performance
0771.81	Solve conversions using the metric, avoirdupois, and apothecary and household systems.	
0771.82	Use charts, graphic illustrations and conversion tables to perform mathematical calculations.	
0771.83	Determine the meaning of commonly used abbreviations in prescriptions and medication orders.	
0771.84	Determine abbreviations, symbols or syntax that should be avoided.	
0771.85	Demonstrate the Roman Numeral system of writing numbers.	
0771.86	Apply placement rules when using Roman Numerals.	
0771.87	Apply mathematical computations related to pharmacy procedures.	
0771.88	Apply mathematical principle to conversion equations common to those used in the pharmacy.	
0771.89	Apply rules for decimals when writing drug doses.	
0771.90	Apply mathematical principles involving temperature, weights and measures used in the pharmacy.	
0771.91	Apply mathematical principles to problems involving dosage calculations and other applied mathematical concepts.	
0771.92	Apply ratios and proportions to enlarge and reduce chemical mixtures used in the pharmacy.	
0771.93	Calculate amounts of drugs, chemical or solvents when enlarging and reducing formulas.	
0771.94	Examine units of measurement for drugs and expressions of quantity and concentration for drugs in drug products.	
0771.95	Differentiate methods for determining quantities of ingredients and concentration of drugs when preparing or dispensing drug products.	
0771.96	Calculate amounts of two solutions of different strengths which must be combined to get a third solution of a specified strength.	
0771.97	Calculate final strength of a diluted or mixed solution when given the original strength(s) and volume(s) and the final volume.	
0771.98	Distinguish methods of expressing doses and dosage regimens.	
0771.99	Calculate the amount of drug product to dispense a day's supply from a dosage regime.	
0771.100	Calculate doses for pediatric patients using pediatric dosage information found in reference books.	
0771.101	Apply general rules for calculating an infant's or child's dose of medication when given the age or weight of the patient and the normal adult dose.	
0771.102	Determine the flow rate of an IV solution when given the total volume, total time of administration and the drops delivered per ml by the administration set.	
0771.103	Calculate powder volume and use calculation to reconstitute dry powders for suspension or solution.	
0771.104	Examine pricing methods used in retail pharmacy.	
0771.105	Recognize the meaning of terms used in pricing methods.	

Pharmacy Operation		Complete
Content Skill Sets		Knowledge/ Performance
0771.106	Differentiate common pharmaceutical terms to include drug names, codes, expiration date formats, dispensing containers and closures.	
0771.107	Determine considerations regarding authority to prescribe.	
0771.108	Assess possible prescribers.	
0771.109	Characterize general processes related to the dispensing and medication distribution in a traditional pharmacy.	

0771.110	Examine the method of transmitting prescriptions to a pharmacy.	
0771.111	Apply required patient confidentiality.	
0771.112	Articulate the required contents of a prescription and medication order.	
0771.113	Select information obtained from patients when receiving refill requests.	
0771.114	Distinguish the process and information needed when calling prescribers for refill authorization.	
0771.115	Demonstrate receiving electronic transmission of prescriptions.	
0771.116	Differentiate patient information necessary for the patient profile.	
0771.117	Relate the process required when entering prescription/medication information in the patient profile.	
0771.118	Validate appropriate product selection (i.e. brand vs. generic).	
0771.119	<p>Assist the pharmacist in preparing and dispensing medications to include:</p> <ul style="list-style-type: none"> • measuring and counting • calculation and verification • compounding • weighing • reconstituting • aseptic technique/iv admixtures • controlled substances 	
0771.120	Prepare and package prescriptions and medication orders.	
0771.121	Relate information contained on a prescription label.	
0771.122	Report the advantages of the Unit Dose System.	
0771.123	Examine types of Unit Dose Systems.	
0771.124	Demonstrate the five “Rights” of medication.	
0771.125	Demonstrate the three check points utilized during the dispensing of a prescription.	
0771.126	Report the pharmacist’s accountability during dispensing of a prescription.	
0771.127	Articulate possible sources of medication errors.	
0771.128	Predict reporting procedures for medication errors.	
0771.129	Illustrate the use of supplemental patient information.	
0771.130	Examine key concepts and terms used in pharmacy inventory management.	
0771.131	Report ordering and receiving techniques.	
0771.132	Compare methods in managing inventory.	
0771.133	Assess ways prescription are numbered, dated and labeled.	
0771.134	Predict the role of the FDA in medication recall and adverse drug reaction.	
0771.135	Assess theft and drug diversion.	
0771.136	Examine methods of reimbursement and available payment plans.	
0771.137	Determine claims processing procedures using Universal Claim Forms (UCFs), paper claims, on-line claims and electronic adjudication.	
0771.138	Relate the components of drug utilization review.	
0771.139	Examine Reimbursement Formulary.	
0771.140	Determine quantity restriction as it applies to preventing dispensing of unnecessary quantities.	
0771.141	Establish steps for obtaining prior authorization.	
0771.142	Relate the purpose of the signature log.	

Clinical Internship

Clinical Internship		Complete
Content Skill Sets		Knowledge/ Performance
0771.143	Demonstrate a working knowledge of internship eligibility requirements.	
0771.144	Comply with required health regulations such as proof of physical examination and immunization status.	
0771.145	Provide proof of personal health insurance.	
0771.146	Wear proper clinical attire.	
0771.147	Maintain mastery or above in attainment of standards in classroom theory and lab.	
0771.148	Report to clinical site on time and ready to work.	
0771.149	Notify clinical site and instructor when absent.	
0771.150	Conform to policies regarding performance of skills and scope of responsibility.	
0771.151	Correctly and safely perform entry-level procedures under supervision of a pharmacist.	
0771.152	Request assistance or clarification as needed.	
0771.153	Maintain professional standards including client confidentiality.	
0771.154	Organize and effectively manage time.	
0771.155	Complete documentation required of clinical internship accurately.	
0771.156	Participate in clinical internship evaluation process.	

Course Description: Students will be provided an opportunity to participate in a clinical internship, applying the knowledge and skills mastered during the PTCB Preparation course. The clinical internship will allow hands-on practice under the direction of a pharmacist. Students participate in 100-130 hours of activities that reflect current and future entry-level pharmacy technician functions and responsibilities, utilizing both the institutional and retail settings. Students utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Notes: 0730 Health Science Clinical Experience may be scheduled with 0772 (PTCB Applications) to create a 2-credit block.

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0772.01	Describe employer behavioral expectations of healthcare personnel.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0772.02	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0772.03	Use a variety of communication techniques to achieve effective interpersonal and team communication.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0772.04	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

WEST VIRGINIA STANDARDS

Clinical Internship		Complete
Content Skill Sets		Knowledge/ Performance
0772.05	Demonstrate a working knowledge of internship eligibility requirements.	
0772.06	Comply with required health regulations such as proof of physical examination and immunization status.	
0772.07	Provide proof of personal health insurance.	

0772.08	Wear proper clinical attire.	
0772.09	Maintain mastery or above in attainment of standards in classroom theory and lab.	
0772.10	Report to clinical site on time and ready to work.	
0772.11	Notify clinical site and instructor when absent.	
0772.12	Conform to policies regarding performance of skills and scope of responsibility.	
0772.13	Correctly and safely perform entry-level procedures under supervision of a pharmacist.	
0772.14	Request assistance or clarification as needed.	
0772.15	Maintain professional standards including client confidentiality.	
0772.16	Organize and effectively manage time.	
0772.17	Complete documentation required of clinical internship accurately.	
0772.18	Participate in clinical internship evaluation process.	
0772.19	Achieve mastery in the performance of course skill sets within PTCB 0771.	
0772.20	Meet entry-level requirements as required by professional standards.	
0772.21	Demonstrate a working knowledge of internship eligibility requirements.	
0772.22	Comply with required health regulations such as proof of physical examination and immunization status.	
0772.23	Provide proof of personal health insurance.	
0772.24	Wear proper clinical attire.	
0772.25	Maintain academic standards in classroom theory and lab.	
0772.26	Report to clinical site on time and ready to work.	
0772.27	Notify clinical site and instructor when absent.	
0772.28	Conform to policies regarding performance of skills and scope of responsibility.	
0772.29	Correctly and safely perform entry-level procedures under supervision of a pharmacist.	
0772.30	Request assistance or clarification as needed.	
0772.31	Maintain professional standards including client confidentiality.	
0772.32	Organize and effectively manage time.	
0772.33	Complete documentation required of clinical internship accurately.	
0772.34	Participate in clinical internship evaluation process.	

Course Description: Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices, and diagnostics.

Notes: This course aligns with Project Lead the Way (PLTW) Biomedical Science. To teach PLTW courses, teachers must attend and successfully complete a course-specific training session sponsored by PLTW. Required skill sets are dispersed at that time.

Refer to policy 2520.13 Guidance Document for recommended electives

Work Habits		Complete
Content Skill Sets		Knowledge/ Performance
0780.01	Demonstrate professional work habits.	
0780.02	Demonstrate the ability to organize, implement, and troubleshoot specific tasks.	
0780.03	Demonstrate the ability to work in teams and as an individual.	

Knowledge of Biotechnology		Complete
Content Skill Sets		Knowledge/ Performance
0780.04	Define biotechnology and its role.	
0780.05	Identify the application of the biotechnology industry.	
0780.06	Describe careers in biotechnology.	

Laboratory Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
0780.07	Demonstrate competency in validating and using laboratory equipment.	
0780.08	Demonstrate competency in using computer office applications.	
0780.09	Perform basic laboratory math skills.	
0780.10	Apply statistical analysis to interpret data.	
0780.11	Demonstrate the ability to use the scientific method.	
0780.12	Demonstrate the principles of DNA isolation.	
0780.13	Perform Polymerase Chain Reaction (PCR).	
0780.14	Perform electrophoresis.	
0780.15	Explain and perform aseptic technique.	
0780.16	Demonstrate the concepts of microbial culture.	

Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0780.17	Demonstrate the knowledge of bioethics.	
0780.18	Demonstrate the knowledge of professional ethics.	

Safety in the Biotechnology Laboratory		Complete
Content Skill Sets		Knowledge/ Performance
0780.19	Demonstrate general requirements for laboratory safety.	
0780.20	Identify and use personal protective equipment (PPE).	
0780.21	Demonstrate ability to implement safety protocols.	
0780.22	Follow SDS guidelines for handling, storage, and disposal of hazardous material.	
0780.23	Demonstrate knowledge of safety regulatory agencies, such as OSHA.	

Working in a Highly Regulated Environment		Complete
Content Skill Sets		Knowledge/ Performance
0780.24	Document lab activities and findings according to guidelines.	

Appropriate Use of Equipment and Instrumentation		Complete
Content Skill Sets		Knowledge/ Performance
0780.25	Use laboratory glassware.	
0780.26	Use volumetric equipment.	
0780.27	Use electrophoresis equipment.	
0780.28	Use balances.	
0780.29	Use centrifuges.	
0780.30	Use microscopes.	
0780.31	Demonstrate knowledge of temperature regulating devices (e.g., water baths, incubators).	

WEST VIRGINIA STANDARDS

Infectious Diseases		Complete
Content Skill Sets		Knowledge/ Performance
0780.32	Define medical interventions and explain how these interventions help prevent, diagnose and treat disease.	

0780.33	Define bioinformatics and explore how it is used in the collection, classification, storage and analysis of biochemical and biological information.	
0780.34	Explain how bacteria can be identified using their DNA sequences.	
0780.35	Investigate the significance of diagnostic tests for infectious diseases.	
0780.36	Graphically organize connections between individuals in a fictitious disease outbreak.	
0780.37	Determine the concentration of infectious bacteria in simulated body fluids and identify infected patients using antibody-based diagnostic tests, such as ELISA assay.	

Antibiotics		Complete
Content Skill Sets		Knowledge/ Performance
0780.38	Creatively describe the structure of a bacterial cell.	
0780.39	Investigate how antibiotics disrupt some of the pathways that bacteria need to survive.	
0780.40	Explain how bacteria use various pathways to gain resistance to antibiotics.	
0780.41	Creatively demonstrate one of the pathways through which bacterial cells transfer genes.	
0780.42	Use a model to simulate the effects of antibiotics on the population of bacteria during an infection.	

Hearing Loss		Complete
Content Skill Sets		Knowledge/ Performance
0780.43	Distinguish the properties of sound waves; including frequency and amplitude.	
0780.44	Apply knowledge of the structures of the ear to create a model of an ear.	
0780.45	Identify and perform tests in which hearing loss can be evaluated.	
0780.46	Research the variety of interventions and services available to aide those with hearing loss.	
0780.47	Investigate and debate the bioethical concerns related to the use of cochlear implant technology.	

Vaccination		Complete
Content Skill Sets		Knowledge/ Performance
0780.48	Explain how vaccines act as medical interventions to defend the body against infectious invaders.	
0780.49	Explore the some of the various laboratory methods in which vaccines are produced.	
0780.50	Define plasmids and explain their significance in genetic engineering.	
0780.51	Investigate the importance of epidemiologists and the impact these medical professionals have on public health.	
0780.52	Describe in general how vaccines interact with the human immune system.	
0780.53	Interpret data from a disease outbreak to determine the course of the infection.	
0780.54	Explore vaccination from the perspective of individuals from different generations.	

Genetic Testing		Complete
Content Skill Sets		Knowledge/ Performance
0780.55	Describe genetic testing and how it is used to determine if someone has a genetic disorder.	
0780.56	Explain how genetic counseling can positively affect persons who have had genetic testing for various situations.	
0780.57	Amplify a segment of DNA in the laboratory using the Polymerase Chain Reaction (PCR) procedure.	
0780.58	Use laboratory techniques such as DNA extraction, PCR, and restriction analysis to identify single base pair differences in DNA.	
0780.59	Apply laboratory results to demonstrate the relationship between genotype and phenotype.	
0780.60	Analyze prenatal genetic screening results.	
0780.61	Describe the basics of proper prenatal care as well as specified medical interventions used to monitor a pregnancy.	
0780.62	Investigate how a person's ability to taste the chemical PCT, their phenotype, relates to their results from laboratory genetic testing their genotype.	

Reproductive Technology		Complete
Content Skill Sets		Knowledge/ Performance
0780.63	Explore how gene therapy can be used to treat genetic disorders.	
0780.64	Discuss and debate the safety and effectiveness of gene therapy.	
0780.65	Explore the various medical interventions parents have available to choose the sex of their future child, including sperm sorting and embryo selection by pre-implantation genetic diagnosis (PDG).	
0780.66	Discuss the possibility of reproductive cloning and the ethical concerns.	
0780.67	Evaluate and debate the potential impact of reproductive technology from moral, ethical and scientific perspectives.	

Cancer Diagnosis		Complete
Content Skill Sets		Knowledge/ Performance
0780.68	Investigate the physiology of cancer and discuss how cancerous cells differ from normal/healthy cells.	
0780.69	Describe some of the different uses of x-rays, CT scans, and MRI scans.	
0780.70	Investigate what DNA microarrays measure and how this information is used to determine differences in gene expression between differing tissues samples.	
0780.71	Using statistical analysis, determine the similarities between gene expression patterns of multiple patients.	
0780.72	Describe the potential risk factors for different types of cancer as well as the ways to reduce the risk.	
0780.73	Explore some of the various cancer screening techniques that can be used to predict risk for developing cancer.	
0780.74	Investigate viruses as a risk factor or cause for certain cancers.	

Cancer Treatment		Complete
Content Skill Sets		Knowledge/ Performance
0780.75	Define and identify the major differences between chemotherapy and radiation therapy.	
0780.76	Describe in general how chemotherapy drugs interact with and destroy cancer cells.	
0780.77	Explore biofeedback therapy and how it is utilized to treat cancer and its symptoms.	
0780.78	Exhibit information on the advances and benefits of prosthetic technology for those who have lost their limbs.	
0780.79	Explain how physical and occupational therapists help patients with disabilities or recovering from surgery/injury.	

Cancer Medical Interventions		Complete
Content Skill Sets		Knowledge/ Performance
0780.80	Discuss some of the many reasons why therapy drugs do not produce the same effect in all individuals.	
0780.81	Explain how SNP profiles factor into the decision to prescribe a specific medication.	
0780.82	Explore the field of pharmacogenetics and its contributions to the improvement of individualized patient treatment.	
0780.83	Research and present how cases of human abuse have led to strict regulations of human participation in clinical trials.	
0780.84	Describe the importance of nanomedicine, particularly for cancer research and the development of medical interventions.	

Therapeutic Proteins		Complete
Content Skill Sets		Knowledge/ Performance
0780.85	Discuss how the diagnosis and treatment of diabetes has evolved from the 1800s through today.	
0780.86	Explain the specific bacterial transformation process that they perform.	
0780.87	Define chromatography and how it is used to separate items in a mixture.	
0780.88	Interpret electrophoresis results to determine the molecular weight of specific proteins in a mixture.	
0780.89	Explore and reflect on specific biomedical careers in the manufacturing of therapeutic proteins.	

Kidney Failure		Complete
Content Skill Sets		Knowledge/ Performance
0780.90	Describe End Stage Renal Disease (ESRD) and how it is diagnosed.	
0780.91	Describe the chain of events that result when kidneys do not function properly and how it affects the creation of red blood cells.	
0780.92	Explore the medical options for treatment for persons with ESRD including hemodialysis, peritoneal dialysis and kidney transplant.	

Organ Transplants		Complete
Content Skill Sets		Knowledge/ Performance
0780.93	Consider the integral factors to consider when deciding who should receive an organ transplant.	
0780.94	Describe the importance of blood and tissue typing for a successful organ transplant.	
0780.95	Describe the general steps involved in a live donor laparoscopic nephrectomy.	
0780.96	Compare the major similarities and differences between a heart and a kidney transplant.	
0780.97	Explain the most common ways members of the surgical transplant team work together for a successful transplant.	

Human Body Transplantation		Complete
Content Skill Sets		Knowledge/ Performance
0780.98	Explore how a variety of tissues and organs can be transplanted from one organism to another.	
0780.99	Describe the general process of how xenotransplantation and tissue engineering works, as well as potential risks, benefits, challenges and ethical/moral concerns.	
0780.100	Reflect on how current methods of medical intervention can be improved.	
0780.101	Describe how advancing medical knowledge and technology will enable scientists to enhance the human body.	
0780.102	Design a potential “super” human using knowledge of the human body and available medical interventions.	

Course Description: Course Description: This course is designed to allow the student to choose a career work-based experience from the following specializations: Select 1: Advanced Health Seminar, Certified Nursing Assistant, Certified ECG Technician, Certified Health Unit Coordinator, Certified Patient Care Technician, Certified Phlebotomy Technician, Community Emergency Response Team, Dental Aide, Dietary Aide, Direct Care Worker, Electronic Health Record Specialist, Environmental Services, Orientation to Practical Nursing, Laundry Aide, Physical Therapy Aide, Pre-Pharmacy Technician, Imagery Aide, Veterinary Science Aide. Upon successful completion of the prerequisite courses in the Health Science Education Program of Study, students will be provided the opportunity in Clinical Specialty II to participate in a workbased clinical experience. Students choose a health career specialty for in-depth study and must complete a minimum of 25-55 hours in an applicable clinical rotation. Instruction is guided by career-specific Content skill sets that must be mastered before students are eligible to attain established credentials and/or industry validation. Within this course, students focus upon employability skills and career development, and apply healthcare information technology and technical skills. Instruction will incorporate project and problem-based healthcare practices and procedures to demonstrate the criticality of these skills. Due to healthcare industry standards, exemplary attendance is mandatory. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0789.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	
0789.02	Describe selected client service strategies (e.g., service, quality client care, client participation).	

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0789.03	Describe employer behavioral expectations of healthcare personnel.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0789.04	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0789.05	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0789.06	Explain the roles and responsibilities of team members.	
0789.07	Describe the use of information technology in healthcare settings.	

0789.08	Using a problem-solving process applied to healthcare situations, describe how healthcare workers can effectively communicate with their clients/individuals and team members.	
---------	--	--

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0789.09	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0789.10	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0789.11	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0789.12	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	

WEST VIRGINIA STANDARDS

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0789.13	Apply skills to obtain training and/or certification in selected Clinical Specialization (<i>See Addendum Clinical Specialty Options</i>).	
0789.14	Participate in a work-based clinical experience of 25-55 hours in selected Clinical Specialization: Length of work-based experience is determined by credentialing agency requirements.	
0789.15	Continue development of student portfolio.	
0789.16	Identify strategies for pursuing employment (social medical, personal networking, job sites, internships).	

Treatment Planning and Implementation		Complete
Content Skill Sets		Knowledge/ Performance
0789.17	Design the treatment plan incorporating patient/client input.	
0789.18	Create a treatment plan using a problem-solving model.	
0789.19	Evaluate a treatment plan for intervention opportunities.	
0789.20	Select appropriate resources to implement treatment plan.	

0789.21	Evaluate priorities in order to organize work.	
0789.22	Use equipment and instruments according to manufacturer's guidelines and safety practices.	
0789.23	Document actions according to facility protocol and regulatory guidelines.	

Monitoring Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0789.24	Evaluate patient/client response to treatment/procedures.	
0789.25	Analyze and report patient/client response.	
0789.26	Assess need for follow up and alternative care.	

Patient/Client Status Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0789.27	Choose appropriate evaluation tools to assess patient/client response to treatment plan.	
0789.28	Analyze information gathered.	
0789.29	Revise/create modifications to treatment plan.	

Course Description: This course is designed to allow the student to choose a career work-based experience from the following specializations: Select 1: Advanced Health Seminar, Certified Nursing Assistant, Certified ECG Technician, Certified Health Unit Coordinator, Certified Patient Care Technician, Certified Phlebotomy Technician, Community Emergency Response Team, Dental Aide, Dietary Aide, Direct Care Worker, Electronic Health Record Specialist, Environmental Services, Orientation to Practical Nursing, Laundry Aide, Physical Therapy Aide, Pre-Pharmacy Technician, Imagery Aide, Veterinary Science Aide. Upon successful completion of the prerequisite courses in the Health Science Education Program of Study, students will be provided the opportunity in Clinical Specialty II to participate in a workbased clinical experience. Students choose a health career specialty for in-depth study and must complete a minimum of 25-55 hours in an applicable clinical rotation. Instruction is guided by career-specific Content skill sets that must be mastered before students are eligible to attain established credentials and/or industry validation. Within this course, students focus upon employability skills and career development, and apply healthcare information technology and technical skills. Instruction will incorporate project and problem-based healthcare practices and procedures to demonstrate the criticality of these skills. Due to healthcare industry standards, exemplary attendance is mandatory. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: 0730 Health Science Clinical Experience may be scheduled with 0790 (Clinical Specialty II) to create a 2-credit block.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0790.01	Describe how healthcare workers can be aware and sensitive to clients and their families (across the lifespan) emotional, spiritual, mental health and social needs, behaviors, and attitudes.	
0790.02	Describe selected client service strategies (e.g., service, quality client care, client participation).	

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0790.03	Describe employer behavioral expectations of healthcare personnel.	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0790.04	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0790.05	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0790.06	Explain the roles and responsibilities of team members.	

0790.07	Describe the use of information technology in healthcare settings.	
0790.08	Using a problem-solving process applied to healthcare situations, describe how healthcare workers can effectively communicate with their clients/individuals and team members.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0790.09	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0790.10	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0790.11	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0790.12	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	

WEST VIRGINIA STANDARDS

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0790.13	Apply skills to obtain training and/or certification in selected Clinical Specialization (<i>See Addendum Clinical Specialty Options</i>).	
0790.14	Participate in a work-based clinical experience of 25-55 hours in selected Clinical Specialization Length of work-based experience is determined by credentialing agency requirements.	
0790.15	Continue development of student portfolio.	
0790.16	Identify strategies for pursuing employment (social medical, personal networking, job sites, internships).	

Treatment Planning and Implementation		Complete
Content Skill Sets		Knowledge/ Performance
0790.17	Design the treatment plan incorporating patient/client input.	
0790.18	Create a treatment plan using a problem-solving model.	
0790.19	Evaluate a treatment plan for intervention opportunities.	
0790.20	Select appropriate resources to implement treatment plan.	

0790.21	Evaluate priorities in order to organize work.	
0790.22	Use equipment and instruments according to manufacturer's guidelines and safety practices.	
0790.23	Document actions according to facility protocol and regulatory guidelines.	

Monitoring Client Status		Complete
Content Skill Sets		Knowledge/ Performance
0790.24	Evaluate patient/client response to treatment/procedures.	
0790.25	Analyze and report patient/client response.	
0790.26	Assess need for follow up and alternative care.	

Patient/Client Status Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0790.27	Choose appropriate evaluation tools to assess patient/client response to treatment plan.	
0790.28	Analyze information gathered.	
0790.29	Revise/create modifications to treatment plan.	

Course Description: EMT-B is recognized by the United States Department of Transportation. Instructional content will focus upon expanded and enhanced biology content specific to human structure, function and diseases/disorders common to medical and traumatic emergencies. In addition, course content will include treatment and care of the sick or injured, methods and techniques of patient assessment and of gaining access to the patient, stabilization and transport. Skills necessary for proper documentation are integrated throughout the course. According to national criteria, students must successfully complete a mid-course exam, with a minimum core of 80%, in order to continue in the course and maintain eligibility to take the national EMT-B exam. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and content skill sets.

Notes: The Performance Skills for Emergency Services were adapted and condensed from the U S Department of Transportation, National Emergency Medical Services Education: Emergency Medical Technician Instructional Guidelines.

[National Registry of Emergency Medical Technicians \(nremt.org\)](http://www.nremt.org)

*These educational Content Skills also meet the West Virginia Office of Emergency Medical Systems requirements. See <http://www.wvoems.org>.

*National Emergency Medical Standards, Emergency Medical Responder see <https://www.ems.gov/pdf/811077b.pdf>

*The Performance Skills for Emergency Services I-meet the requirement for First Responder. The first responder is the first person to arrive at the scene who has emergency medical training and the first designated level of professional emergency medical care as outlined by the National EMS education and practice blueprint. Skills taught to a First Responder include: Assessment for life-threatening conditions in both medical and trauma patients, provision of initial airway care, assistance with breathing, provision of CPR, control of bleeding, and stabilization of spinal and extremity injuries. In addition, the West Virginia Office of Emergency Services requires successful completion of the hazardous materials awareness training meeting the Department of Labor, Occupational Safety and Health Administration (OSHA) 1910.120 requirements. Emergency Services II Applies fundamental knowledge of the EMS system, safety/well-being of the EMT, and medical/legal and ethical issues to the provision of emergency care. *The Performance Skills for Emergency Services I-EMR were adapted and condensed from the U S Department of Transportation, National Emergency Medical Services Education: Emergency Medical Technician Instructional Guidelines. Emergency Services II builds upon knowledge obtained in Emergency Services I.

Refer to policy 2520.13 Guidance Document for recommended electives

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0792.01	Discuss healthcare fields and the types of workers needed.	
0792.02	Describe employer behavioral expectations of healthcare personnel.	
0792.03	Identify the impact of quality in healthcare facilities as well as the responsibilities of users of the healthcare system (e.g., healthcare workers maintenance of personal wellness).	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0792.04	Use a variety of communication techniques to achieve effective interpersonal and team communication.	
0792.05	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0792.06	Explain the laws (e.g., liability, influence on client care).	
0792.07	Explore legal issues such as sexual harassment, wrongful discharge, negligence, malpractice and violence in the workplace (e.g., abuse, neglect, exploitation, and the Vulnerable Adults law).	
0792.08	Identify the legal issues related to informed consent, advanced directives, ensuring the clients' rights and responsibilities, and accurate documentation.	
0792.09	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0792.10	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0792.11	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0792.12	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0792.13	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

WEST VIRGINIA STANDARDS

EMS Systems		Complete
Content Skill Sets		Knowledge/ Performance
0792.14	Define the components of emergency medical (EMS) systems.	
0792.15	Research the National Highway Traffic Safety Administration as related to emergency medical systems.	
0792.16	Discuss how to access to the emergency medical services.	
0792.17	Research EMS National Scope of Practice Model and National education standards.	
0792.18	Define authorization to practice as related to the West Virginia Office of Emergency Services, medical oversight, local credentialing,	

	employer policies and procedures.	
0792.19	Describe the role of the Emergency Medical Responder as a member of the EMS Team.	
0792.20	List and describe the responsibilities of the Emergency Medical Responder for the provision of pre-hospital emergency care within the local EMS system.	
0792.21	Describe principles of safely operating a ground ambulance.	
0792.22	Understand the guidelines of operating safety in and around a landing zone during air medical operations and transport.	

Workforce Safety and Wellness		Complete
Content Skill Sets		Knowledge/ Performance
0792.23	Have immunizations and health status reviewed.	
0792.24	Discuss emotional reaction that maybe experience by First Responders, patients, family members and by standers when faced with trauma, illness, death and dying.	
0792.25	Discuss the steps in your approach to the family confronted with death and dying and describe the possible reactions that the family may exhibit.	
0792.26	Recognize the signs and symptoms of critical incident stress and state possible steps to reduce/alleviate stress.	
0792.27	Demonstrate correct handwashing.	
0792.28	Adhere to standard precautions and OSHA regulations.	
0792.29	Adhere to safe operation of EMS/patient care equipment.	
0792.30	Identify and implement the appropriate personal protective equipment for patient care situations.	
0792.31	Research exposure occurrence policies and procedures.	
0792.32	Identify stressful situations and ways to deal with stress as it relates to EMS.	
0792.33	Identify and prevent response-related injuries as related to EMS.	
0792.34	Demonstrate proper technique when lifting and moving patients.	
0792.35	Explain the procedures for cleaning, disinfecting and/or disposal of all items that are potentially contaminated with infectious materials.	

EMS Roles, Responsibility, and Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
0792.36	Discuss and research roles and responsibilities of EMS personnel as related to: equipment, safety, scene evaluation, patient access, administering care, emotional support, continuity of care, community relations, medical and legal standards.	
0792.37	Demonstrate characteristics of professional behavior.	
0792.38	Research quality improvement as it relates to EMS.	

Communication and Documentation		Complete
Content Skill Sets		Knowledge/ Performance
0792.39	Demonstrate the proper procedure for the transfer of patient care to other EMS personnel.	

0792.40	Describe/record information regarding a patient's condition and treatment that need to be communicated.	
0792.41	Communicate/document the Emergency Medical Responder's observations and actions to whomever patient care is transferred.	
0792.42	Communicate with team members/document call for resources.	
0792.43	Describe and apply the principles of communicating with patients in a manner that achieves a positive relationship.	
0792.44	Recognize simple medical prefixes, suffixes and combining words.	

Medical, Legal and Ethical Issues		Complete
Content Skill Sets		Knowledge/ Performance
0792.45	Describe and demonstrate an understanding of the medical legal aspects of an Emergency Medical Responder's provision of emergency medical care in the jurisdiction having authority, including, but not limited to, duty to act, standard of care, consent to care, forcible restraint, abandonment, documentation, and any applicable Good Samaritan Laws.	
0792.46	Define the first responder standard of care.	
0792.47	Discuss the importance of do not resuscitate, advance directives, and related state laws/rules.	
0792.48	Define consent and discuss the methods of obtaining consent differentiating between expressed and implied consent.	
0792.49	Discuss the implication for EMR of patient refusal of transport.	
0792.50	Define abandonment, negligence, and assault and battery, and their implications.	
0792.51	Explain the importance and legality of patient confidentiality.	
0792.52	State the conditions that require the EMR to notify local law enforcement and action that should be taken when providing care at a crime scene.	
0792.53	Discuss and demonstrate fundamental components of documentation.	
0792.54	Discuss how consent would be obtained for a minor.	

Vital Signs		Complete
Content Skill Sets		Knowledge/ Performance
0792.55	Determine and record skin color, temperature and moistness.	
0792.56	Demonstrate ability to accurately measure and record vital signs including manual blood pressure.	

Medical Identification Devices		Complete
Content Skill Sets		Knowledge/ Performance
0792.57	Identify the most commonly used digital medical identification devices.	
0792.58	Apply the information contained on or in the medical identification devices to patient assessment and patient care procedures.	

Anatomy and Physiology		Complete
Content Skill Sets		Knowledge/ Performance
0792.58	Understand and use basic anatomical and directional terms to identify body parts as they relate to each other.	
0792.59	Describe the anatomy and function of the: respiratory system, circulatory system, musculoskeletal system and nervous system.	
0792.60	Relate a given surface landmark with the appropriate underlying anatomy.	
0792.61	Identify the life support chain fundamental elements and issues impacting these elements including age related variations (pediatrics and geriatrics).	

Shock and Respiratory Compromise		Complete
Content Skill Sets		Knowledge/ Performance
0792.62	Determine and record the level of consciousness of the injured person including person, place, time, and events.	
0792.63	Assess for an inadequate airway, inadequate respiration's, inadequate circulation and profuse bleeding.	
0792.64	Recognize when immediate correction is necessary.	
0792.65	Assess patient and determine if the patient has a life-threatening condition.	
0792.66	Use spinal precautions as appropriate.	

Age Specific Assessment and Care		Complete
Content Skill Sets		Knowledge/ Performance
0792.67	Differentiate between the anatomy and physiology of the infant, child, and adult patient (vital signs, weight, pulmonary system, nervous system, psychological).	
0792.68	Describe how assessment of the infant or child may be different from that of an adult.	
0792.69	Describe various causes of respiratory emergencies and summarize emergency care strategies for infant, children and elderly.	
0792.70	List common causes and describe the management of seizures in the infant and child patient.	
0792.71	Discuss the emergency medical care of the infant, child, elderly trauma patient.	
0792.72	Summarize the signs and symptoms of child and elder abuse and neglect.	
0792.73	Describe the medical-legal responsibilities in suspected child and elder abuse.	
0792.74	Demonstrate assessment of the infant and child patient.	

Public Health		Complete
Content Skill Sets		Knowledge/ Performance
0792.75	Research the basic principles behind public health.	
0792.76	Discuss the EMS interface with public health.	

Emergency Medications		Complete
Content Skill Sets		Knowledge/ Performance
0792.77	Know the names, effects, indication, routes of administration and dosages for all emergency medications (chemical antidote auto injector devices).	
0792.78	Demonstrate self-administration of intramuscular injection by auto injector (advantages, disadvantage, techniques).	
0792.79	Demonstrate peer administration of intramuscular injection by auto injector (advantages, disadvantage, techniques).	

Basic Life Support		Complete
Content Skill Sets		Knowledge/ Performance
0792.80	Establish and maintain an open airway using both manual and mechanical airway techniques.	
0792.81	Restore breathing and circulation by means of cardiopulmonary resuscitation (CPR).	
0792.82	Demonstrate proficiency in the use of an automated external defibrillator (AED).	
0792.83	Demonstrate proficiency in using basic lifesaving procedures.	

Bleeding		Complete
Content Skill Sets		Knowledge/ Performance
0792.84	Identify items that can be used to control external bleeding and minimize the contamination of open wounds.	
0792.85	Apply pressure dressings that will control bleeding and minimize the contamination of open wounds.	
0792.86	Identify the likelihood of internal bleeding through observations of signs, symptoms and mechanisms of injury.	
0792.87	Care for a patient who exhibits the signs and symptoms of internal bleeding.	
0792.88	Apply current trauma treatment standards when applying a tourniquet which may include Prehospital Trauma Life Support (PHTLS) standards.	

Shock		Complete
Content Skill Sets		Knowledge/ Performance
0792.89	Recognize the likelihood that shock may occur or be present on the basis of patient assessment and observation of a mechanism of injury.	
0792.90	Provide anti-shock measures as a part of routine patient care.	

Airway Management		Complete
Content Skill Sets		Knowledge/ Performance
0792.91	Apply knowledge of Anatomy and Physiology to airway management procedures (I.E., patent airway, mechanical ventilation,	

	respiration perfusion).	
0792.92	Understand the pathophysiology of respiratory dysfunction.	
0792.93	Use available mechanical devices to assure the maintenance of an open airway and assist ventilation according to American Heart Association (AHA) standards).	
0792.94	Demonstrate proficiency in supplemental oxygen therapy including portable oxygen cylinder and oxygen delivery devices.	
0792.95	Describe and demonstrate airway management utilizing of upper airway suctioning.	
0792.96	Consider age-related variation in pediatric and geriatric patients.	

Assessment: Scene Size-Up		Complete
Content Skill Sets		Knowledge/ Performance
0792.97	Secure the safety of the scene by describing common scene hazards.	
0792.98	Manage the scene by demonstrating knowledge of the impact of the environment on patient care, addressing hazards, assessing potential for violence and the need for additional or specialized resources.	
0792.99	Implement/demonstrate use of standard precautions and personal protective equipment.	

Patient Evacuation and Transfer		Complete
Content Skill Sets		Knowledge/ Performance
0792.100	Describe situations when a person should be evacuated or transferred.	
0792.101	Use the most appropriate assist, drag or carry (alone or with a partner) to move a sick or injured person from a dangerous location to a safe place.	
0792.102	Maintain safety precautions during evacuation and transfer.	
0792.103	Demonstrate an understanding of the purpose and use of transfer methods for patients including stair chairs and stretchers.	
0792.104	Provide emergency evaluation and transfer of a sick and/or injured person.	

Primary Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0792.105	Identify those conditions that represent an immediate threat to the patient's life.	
0792.106	Demonstrate assessment of level of consciousness, airway status, breathing status, circulatory status.	
0792.107	Identify life threats.	
0792.108	Assess vital functions.	
0792.109	Begin interventions needed to preserve life.	

Secondary Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0792.110	Conduct a methodical head-to-toe physical examination to discover conditions not found during the primary assessment.	
0792.111	Demonstrate a focused assessment of pain.	
0792.112	Demonstrate assessment of vital signs.	
0792.113	Consider special interventions for pediatric and geriatric patients (normal vital signs by age etc.).	
0792.114	Interview the sick or injured person to obtain facts relevant to the person's condition.	
0792.115	Interview co-workers, witnesses, family members, or other individuals to obtain facts relevant to the person's condition.	

Re-assessment		Complete
Content Skill Sets		Knowledge/ Performance
0792.116	Identify and treat changes in the patient's condition in a timely manner.	
0792.117	Reassess at regular intervals.	
0792.118	Reassess including primary assessment, vital signs, chief complaint, interventions.	
0792.119	Compare reassessment to the baseline status.	
0792.120	Assess pain.	
0792.121	Reassess effectiveness of each intervention, consider need for new intervention.	
0792.122	Consider age related assessment data.	

Neurology		Complete
Content Skill Sets		Knowledge/ Performance
0792.123	Define altered mental status and causes of altered mental status.	
0792.124	Research type of seizures, causes, assessment findings and management.	
0792.125	Describe the causes, assessment findings and management of patient with stroke symptoms.	

Abdominal and Gastrointestinal Disorders		Complete
Content Skill Sets		Knowledge/ Performance
0792.126	Define acute abdomen.	
0792.127	Identify assessment techniques and symptoms related to abdominal and gastrointestinal disorders.	
0792.128	Research general management for patient with abdominal pain.	
0792.129	Become familiar with specific acute abdominal conditions.	
0792.130	Consider age related variations for pediatric and geriatric assessment and management related abdominal and gastrointestinal disorders.	

Musculo-skeletal Injuries		Complete
Content Skill Sets		Knowledge/ Performance
0792.131	Identify the various types of musculo-skeletal injuries.	
0792.132	Immobilize and otherwise care for suspected fractures, dislocations, sprains and strains with available supplies and equipment, including commercially available and improvised devices.	
0792.133	Demonstrate an understanding of the function and need for traction splints.	

Cervical/Spinal Injuries		Complete
Content Skill Sets		Knowledge/ Performance
0792.134	Identify need for spinal immobilization.	
0792.135	Maintain in-line immobilization of cervical spine.	
0792.136	Place proper fitting rigid extrication-type cervical collar.	
0792.137	Place patient in supine position on full length spine board.	
0792.138	Secure patient to immobilization device.	

Immobilization		Complete
Content Skill Sets		Knowledge/ Performance
0792.139	Identify need for extremity immobilization.	
0792.140	Assesses motor, sensory, and distal circulation in extremities.	
0792.141	Place proper fitting splint on extremity.	
0792.142	Reassesses motor, sensory, and distal circulation in extremities.	

Caring for the Sick and/or Injured		Complete
Content Skill Sets		Knowledge/ Performance
0792.143	Identify and care for patients with non-traumatic chest pain, utilizing patient assessment.	
0792.144	Identify and care for patients experiencing respiratory distress, utilizing patient assessment.	
0792.145	Identify and care for patients experiencing a diabetic emergency, utilizing patient assessment.	
0792.146	Identify and care for a patient who is experiencing a seizure, utilizing patient assessment.	
0792.147	Identify and care for a patient who has ingested, inhaled, absorbed or been injected with a poisonous substance, utilizing patient assessment.	
0792.148	Identify and care for a patient who is in an altered state of consciousness, utilizing patient assessment.	
0792.149	Identify and care for a patient who is experiencing a stroke, utilizing patient assessment.	
0792.150	Identify and care for a patient who has a foreign body in the eye, utilizing patient assessment.	

0792.151	Identify and care for a patient with thermal, chemical, or electrical burns, determining the severity including degree, body surface area, type, and location utilizing patient assessment.	
0792.152	Identify and care for a patient suffering from an environmental emergency including heat cramps, heat exhaustion, heat stroke, and frostbite, utilizing patient assessment.	

Patient Care in Special Situations		Complete
Content Skill Sets		Knowledge/ Performance
0792.153	Identify patients who have special needs.	
0792.154	Care for injured/ill children.	
0792.155	Care for the injured/ill elderly.	
0792.156	Care for the injured/ill physically disabled.	
0792.157	Care for the injured/ill developmentally disabled.	

Multiple Casualty Incidents		Complete
Content Skill Sets		Knowledge/ Performance
0792.158	Categorize the victims of multiple casualty incidents according to the severity of injury or illness on the basis of patient assessments.	
0792.159	Use triage tags or other identification devices available locally to indicate priorities for pre-hospital emergency care and transportation to medical facilities.	
0792.160	Work as a member of a team to perform triage at locations of multiple casualty incidents.	
0792.161	Work as a member of a team to perform patient assessments at locations of multiple casualty incidents.	
0792.162	Work as a member of a team to carry out patient care procedures at the locations of multiple casualty incidents.	
0792.163	Demonstrate knowledge of the operating procedures during a terrorist event or during a natural or man-made disaster.	
0792.164	Demonstrate a basic understanding of the Incident Command System (ICS) implemented by the Federal Emergency Management Agency (FEMA).	
0792.165	Successfully complete Hazmat Awareness training meeting OSHA 1910.120.	

Life-threatening Situations		Complete
Content Skill Sets		Knowledge/ Performance
0792.166	Take steps to minimize the chance of injury or death to all involved when confronted with a potentially life-threatening situation on the basis of an assessment of a scene.	

Entrapment		Complete
Content Skill Sets		Knowledge/ Performance
0792.167	Identify accident-related hazards and undertake hazard control measures consistent with the capabilities of the Emergency Medical	

	Responder and available equipment.	
0792.168	Use available equipment safely to gain access to persons who are entrapped.	
0792.169	Use available equipment safely to disentangle persons from mechanisms of entrapment.	

Emergency Childbirth		Complete
Content Skill Sets		Knowledge/ Performance
0792.170	Evaluate a mother to determine whether delivery is imminent.	
0792.171	Assist with a normal delivery.	
0792.172	Care for the mother and baby.	
0792.173	Identify abnormal childbirth situations and care for the mother and baby within the Emergency Medical Responder's capabilities.	

Non-medical Operational Skills		Complete
Content Skill Sets		Knowledge/ Performance
0792.174	Differentiate the phases of a prehospital call.	
0792.175	Identify the major components of an incident command system.	
0792.176	Discuss your role as a first responder in extrication.	
0792.177	List various methods of gaining access to the patient.	
0792.178	Explain what to do if there is a hazard at the scene.	
0792.179	State role you perform until appropriate trained personnel arrive.	
0792.180	Describe criteria for a multiple casualty situation and discuss your role as a first responder.	
0792.181	Summarize the components of basic triage.	

Course Description: In the final course of the PLTW Biomedical Science sequence, students build on the knowledge and skills gained from previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students address topics ranging from public health and biomedical engineering to clinical medicine and physiology. They have the opportunity to work on an independent design project with a mentor or advisor from a university, medical facility, or research institution.

Notes: This course aligns with Project Lead the Way (PLTW) Biomedical Science. To teach PLTW courses, teachers must attend and successfully complete a course-specific training session sponsored by PLTW. Required skill sets are dispersed at that time.

Refer to policy 2520.13 Guidance Document for recommended electives

Work Habits		Complete
Content Skill Sets		Knowledge/ Performance
0795.01	Demonstrate professional work habits.	
0795.02	Demonstrate the ability to organize, implement, and troubleshoot specific tasks.	
0795.03	Demonstrate the ability to work in teams and as an individual.	

Knowledge of Biotechnology		Complete
Content Skill Sets		Knowledge/ Performance
0795.04	Describe the life cycle of biotechnology product development.	
0795.05	Identify the application of the biotechnology industry.	

Laboratory Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
0795.06	Demonstrate competency in validating and using laboratory equipment.	
0795.07	Demonstrate competency in using computer office applications.	
0795.08	Perform basic laboratory math skills.	
0795.09	Apply statistical analysis to interpret data.	
0795.10	Demonstrate the ability to use the scientific method.	
0795.11	Properly prepare buffers and solutions.	
0795.12	Demonstrate the concepts of recombinant technology.	
0795.13	Demonstrate the principles of DNA isolation.	
0795.14	Perform Polymerase Chain Reaction (PCR).	

0795.15	Perform electrophoresis.	
0795.16	Explain and perform aseptic technique.	
0795.17	Demonstrate the concepts of microbial culture.	

Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0795.18	Demonstrate the knowledge of bioethics.	
0795.19	Demonstrate the knowledge of professional ethics.	

Safety in the Biotechnology Laboratory		Complete
Content Skill Sets		Knowledge/ Performance
0795.20	Demonstrate general requirements for laboratory safety.	
0795.21	Identify and use personal protective equipment (PPE).	
0795.22	Demonstrate ability to implement safety protocols.	
0795.23	Follow SDS guidelines for handling, storage, and disposal of hazardous material.	
0795.24	Demonstrate knowledge of safety regulatory agencies, such as OSHA.	

Working in a Highly Regulated Environment		Complete
Content Skill Sets		Knowledge/ Performance
0795.25	Document lab activities and findings according to guidelines.	

Appropriate Use of Equipment and Instrumentation		Complete
Content Skill Sets		Knowledge/ Performance
0795.26	Use laboratory glassware.	
0795.27	Use volumetric equipment.	
0795.28	Use electrophoresis equipment.	
0795.29	Use balances.	
0795.30	Use centrifuges.	
0795.31	Use microscopes.	
0795.32	Demonstrate knowledge of temperature regulating devices (e.g., water baths, incubators).	

WEST VIRGINIA STANDARDS**Design of a Clinical Care Center****Complete**

Content Skill Sets		Knowledge/ Performance
0795.33	Evaluate the significant role that biomedical innovation plays in treating disease, reducing wait time and promoting efficient care in emergency room and emergency care centers.	
0795.34	Analyze website content and assess overall credibility of the information.	
0795.35	Produce an effective presentation of scientific information by using oral communication skills and PowerPoint presentation.	
0795.36	Using brainstorming and problem-solving skills propose solutions to healthcare delivery problems in the 21st century.	
0795.37	Design an innovative emergency medicine delivery system.	

Designing Reliable and Valid Studies**Complete**

Content Skill Sets		Knowledge/ Performance
0795.38	Critique science data presented in popular media and compare this with data presented in scientific journals.	
0795.39	Using knowledge of specified statistical analysis methods, analyze the results of experimental studies.	
0795.40	Design, conduct and analyze an experimental study to answer a question regarding one or more body systems.	
0795.41	Using at least three statistical fallacies, assume the role of an advertisement sales person selling a fictitious product.	
0795.42	Reflect on the various biomedical career fields related to clinical or research studies and describe two of these career fields.	

Designing Medical Innovations**Complete**

Content Skill Sets		Knowledge/ Performance
0795.43	Investigate the evolution of biomedical products.	
0795.44	Brainstorm ideas for a new biomedical product or methods to improve on an existing product.	
0795.45	Discuss the concept of design process and how it is significant to medical innovation.	
0795.46	Choose a problem to solve, and then research the past and present solutions to this problem.	
0795.47	Examine possible design solutions to the problem chosen, select the best approach and develop a design proposal.	

Innovation for Water Contamination**Complete**

Content Skill Sets		Knowledge/ Performance
0795.48	List and describe multiple causes of water contamination.	
0795.49	Explain why water quality is a global issue.	
0795.50	Extrapolate on the cause of non-point source pollution and its implications.	
0795.51	Using knowledge of specific assays, interpret the results of various chemical and culture assays and identify specific contaminants found.	

0795.52	Research and propose solutions to prevent or treat water contamination.	
0795.53	Determine local potential hazards or sources of contamination of local water samples and research local and Internet resources to investigate the condition of the local water delivery system.	

Public Health		Complete
Content Skill Sets		Knowledge/ Performance
0795.54	Discuss the significant role that epidemiologists and public health investigators play in a public health crisis or disease outbreak.	
0795.55	Describe how to set-up case control and cohort studies.	
0795.56	Discuss how measures of association are used to illustrate the correlation between specific risk factors and the development of disease.	
0795.57	Calculate the measures of association used to assess risk in case control and cohort studies.	
0795.58	List and discuss the various components that may be involved in a public health intervention plan.	
0795.59	Determine the source of a mystery illness by examining evidence documents and data including laboratory results, imaging results, disease maps and molecular data.	
0795.60	Research local, national and global health issues and analyze how culture, geographic location and access to health care affect health and wellness.	
0795.61	Write a grant proposal outlining an intervention plan for a public health issue.	
0795.62	Present and defend the proposed intervention plan to a professional audience.	

Medical Research		Complete
Content Skill Sets		Knowledge/ Performance
0795.63	Define and elaborate on what medical research is used for and how funding for it is obtained.	
0795.64	Explain the role of a grant in relation to medical research.	
0795.65	Understand the difference between what constitutes a credible source opposed to a non-credible source when conducting a literature search.	
0795.66	Distinguished between primary and secondary sources.	
0795.67	Discuss potential bias based on construct and funding sources of research.	
0795.68	Discuss the role of an IRB in ensuring safety of a research project prior to data initiation.	
0795.69	Understand and identify the process by which a grant is created and the principle components that are present in scientific grant proposals (i.e. abstract, specific aims, background and significance, preliminary data/progress, project description, resources, supplemental materials).	
0795.70	Prepare, write and present a detailed grant proposal for a research project that will impact a specific aspect of a disease or medical condition.	

Molecular Biology Techniques		Complete
-------------------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
0795.71	Explain the structure and function of plasmids, and how they are used in genetic engineering.	
0795.72	Describe the role restriction enzymes and how they interact with plasmids.	
0795.73	Interpret plasmid maps to determine the results of specific digestions with restriction enzymes.	
0795.74	Explain how to assemble recombinant DNA and clone a gene of interest using bacterial cells.	
0795.75	Interpret gel electrophoresis results to determine the success of a cloning experiment.	
0795.76	Using the process of bacterial transformation, insert a new plasmid into bacterial cells.	
0795.77	Draw and label possible ligation products and describe digestion results for each product.	

Forensic Techniques		Complete
Content Skill Sets		Knowledge/ Performance
0795.78	Describe observations of the internal and external anatomy of a fetal pig.	
0795.79	Evaluate a fetal pig for any abnormalities that may have led to the pig's death.	
0795.80	Complete an autopsy report for the fetal pig.	
0795.81	Solve the cause of death for a fetal pig by assuming the role of a forensic pathologist.	
0795.82	Design a fictitious death scenario using knowledge of the human body.	
0795.83	Create fictitious documents including an autopsy report and medical history to illustrate clues left behind in a dead body.	
0795.84	Research and reflect on the various biomedical careers involved in forensic pathology and describe two of these careers in detail.	

Independent Study Project		Complete
Content Skill Sets		Knowledge/ Performance
0795.85	Choose a topic and describe work previously completed pertaining to that topic.	
0795.86	Interpret charts, graphs, data sets and any other information related to the project.	
0795.87	Utilize time and project management skills to complete the approved project in the time allotted.	
0795.88	Apply skills and knowledge of researching a topic, evaluating information and decision making in order to complete the project.	
0795.89	Write a well-constructed final report describing the purpose, procedures and results of the project and present this information orally.	
0795.90	Create a final product related to the project.	
0795.91	Write a self-analysis of what was learned during the project with a focus on whether things should have been done differently or not.	
0795.92	Prepare a portfolio of all artifacts related to the project in order to demonstrate the work progression.	

Course Description: Instructional content will focus on basic operation of a 12-lead electrocardiograph machine, explanation of the Einthoven triangle related to the cardiac system. Students will identify the anatomic position of each of the chest leads, prepare a patient for a 12-Lead EKG, maintain the EKG machine and maintain EKG tracings in the patient's chart. The student will interpret and evaluate electrocardiogram tracing. Students participate in clinical practicum for the EKG Technician. Clinical experiences may occur in a variety of settings that utilize EKG monitors. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Awareness and Sensitivity to Client Needs		Complete
Content Skill Sets		Knowledge/ Performance
0810.1	Describe selected client service strategies (e.g., service, quality client care, client participation).	

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0810.2	Describe selected types of healthcare facilities and healthcare delivery systems (e.g., organizational and financial structure, departments and services, type and levels of healthcare personnel, policies and requirements).	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0810.03	Describe communication skills that are important when managing conflict.	
0810.04	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0810.05	Explain the roles and responsibilities of team members.	
0810.06	Describe the use of information technology in healthcare settings.	

Healthcare Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0810.07	Describe how ethical decision-making influences the care of clients.	
0810.08	Explain how an individual's diversity, socioeconomic, or religious beliefs could lead to.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0810.09	Explain the laws (e.g., liability, influence on client care).	
0810.10	Identify the legal issues related to informed consent and advanced directives.	
0810.11	Clients' rights and responsibilities, and accurate documentation.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0810.12	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0810.13	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0810.14	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	
0810.15	Explain the procedures used to respond to client/individual and healthcare facility emergencies (e.g., re safety and natural disasters).	

WEST VIRGINIA STANDARDS

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0810.16	Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare: a. Metric system b. mathematical (averages, ratios, fractions, percentages, addition, subtraction, multiplication, division) c. Conversions (height, weight/mass, length, volume, temperature, household measurements)	
0810.17	Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.	
0810.18	Demonstrate use of the 24-hour clock/military time.	
0810.19	Locate the heart and surrounding structures.	
0810.20	Diagram and label the parts of the heart and list the functions of each labeled part.	
0810.21	Trace the flow of blood through the cardiopulmonary system.	
0810.22	Identify and describe the electrical conduction system.	
0810.23	Identify common diseases and disorders of the cardiovascular system.	
0810.24	Describe mechanisms by which cardiovascular drugs work.	
0810.25	Identify response to cardiac emergency.	
0810.26	List common cardiovascular drugs.	
0810.27	State actions and adverse effects of commonly used cardiovascular drugs.	
0810.28	Differentiate between normal and abnormal ECG changes due to drugs.	

0810.29	Apply mathematical computations related to healthcare procedures (metric and household, conversions and measurements).	
0810.30	Analyze diagrams, charts, graphs and tables to interpret healthcare results.	
0810.31	Analyze ECG tracing to interpret patient/client results.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0810.32	Demonstrate skills and knowledge necessary to perform electrocardiography.	
0810.33	Calibrate the cardiograph instrument.	
0810.34	Identify three types of lead systems.	
0810.35	State Einthoven's triangle.	
0810.36	Demonstrate proper lead placement including lead placement for patient/clients with special needs.	
0810.37	Identify artifacts and mechanical problems.	
0810.38	Perform a 12 lead ECG.	
0810.39	Recognize normal sinus rhythm.	
0810.40	Report any rhythm that is not normal sinus rhythm.	
0810.41	Recognize a cardiac emergency as seen on the ECG.	
0810.42	Describe the physical and mental preparation of the patient/client for ECG testing.	
0810.43	Identify patient/client and verify the requisition order.	
0810.44	Prepare patient/client for ECG testing.	
0810.45	Measure and record patient's/client's vital signs and recognize and report abnormalities.	
0810.46	Perform patient/client care techniques in the health care facility.	
0810.47	State precautions required when performing an ECG.	
0810.48	Describe the Holter monitoring and scanning exercise treatment.	
0810.49	Describe other modalities of cardiovascular diagnosis and interpretation.	

Information Technology		Complete
Content Skill Sets		Knowledge/ Performance
0810.50	Measure waves, segments, complexes, rates and intervals.	
0810.51	Identify electrical axis.	
0810.52	List purposes for pacemakers and indications for insertion.	
0810.53	Recognize normal and deviations from normal sinus rhythms.	
0810.54	Recognize normal and deviations from normal atrial rhythms.	
0810.55	Recognize normal and deviations from normal atrio-ventricular rhythms.	
0810.56	Recognize normal and deviations from normal ventricular rhythms.	
0810.57	Recognize normal and deviations from normal types of heart blocks.	

0810.58	Recognize normal and deviations from normal pacemaker rhythms.	
0810.59	Recognize normal and deviations from normal types of myocardial ischemia and infarction.	
0810.60	Recognize normal and deviations from normal atrial and ventricular hypertrophies.	
0810.61	Recognize normal and deviations from normal extrasystole and other rare phenomena.	
0810.62	Recognize normal and deviations from normal 12 lead ECG results.	
0810.63	Recognize and describe AV block.	

Clinical Applications		Complete
Content Skill Sets		Knowledge/ Performance
0810.64	Perform skills listed and obtained through mastery of theory content.	
0810.65	Prior to clinical assignment demonstrate minimum competence in performing electrocardiography procedures in a laboratory setting.	
0810.66	Perfect individual competency in performing ECG tracings.	
0810.67	Assist in a department that performs ECG tracings.	
0810.68	Perform electrocardiograph technician skills in a healthcare facility.	

Course Description: Instructional content will focus on performing laboratory duties requiring accuracy, timeliness and documentation. The student will be able to function in the laboratory setting utilizing these skills. This course will enhance the student's knowledge of safety procedures as they relate to phlebotomy. They will be provided with the knowledge and skills necessary in maintaining the standard procedures required for a laboratory. Legal and ethical issues to consider in the profession are an integral part of this course. The phlebotomist must be able to recognize appropriate methods for analyzing specimens. In this course the student will learn these methods in collecting and processing the specimen to be analyzed. This externship is designed to provide students with hands-on experience in a clinical, physician's office or laboratory setting. They are required to complete certification requirements which could require not less than 50 hours and up to 120 hours in the externship in order to receive credit for the course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Behaviors for Success in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0825.01	Describe selected types of healthcare facilities and healthcare delivery systems (e.g., organizational and financial structure, departments and services, type and levels of healthcare personnel, policies and requirements).	

Communication in Healthcare Settings		Complete
Content Skill Sets		Knowledge/ Performance
0825.02	Describe communication skills that are important when managing conflict.	
0825.03	Explain the components of accurate and appropriate documentation and reporting (e.g., common medical abbreviations).	
0825.04	Explain the roles and responsibilities of team members.	
0825.05	Describe the use of information technology in healthcare settings.	

Healthcare Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0825.06	Describe how ethical decision-making influences the care of clients.	
0825.07	Explain how an individual's diversity, socioeconomic, or religious beliefs could lead to potential ethical differences with that of other healthcare employees.	

Legal Issues in Healthcare		Complete
Content Skill Sets		Knowledge/ Performance
0825.08	Explain the laws (e.g., liability, influence on client care).	
0825.09	Identify the legal issues related to informed consent, advanced directives, ensuring the clients' rights and responsibilities, and accurate documentation.	
0825.10	Describe the importance of confidentiality (HIPAA) and consequences of inappropriate use of healthcare data (social media and email) in terms of disciplinary actions.	

Healthcare Safety and Standard Precautions		Complete
Content Skill Sets		Knowledge/ Performance
0825.11	List healthcare safety standards and regulatory agencies and the requirements they set for safety standards for healthcare facilities, their employees, and clients/individuals.	
0825.12	Explain the current requirements of standard precautions and the procedures used at a variety of healthcare facilities to support those standards (e.g., infection control, proper hand washing, and gloving procedures).	
0825.13	Identify ways in which healthcare workers can demonstrate personal and client safety (e.g., Safety Data Sheets (SDS), safety signs, symbols, labels, and physical, chemical, and biological safety).	

WEST VIRGINIA STANDARDS

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0825.14	Demonstrate competency in basic math skills and mathematical conversions as they relate to healthcare: a. Metric system b. mathematical (averages, ratios, fractions, percentages, addition, subtraction, multiplication, division) c. Conversions (height, weight/mass, length, volume, temperature, household measurements)	
0825.15	Demonstrate the ability to analyze diagrams, charts, graphs, and tables to interpret healthcare results.	
0825.16	Demonstrate use of the 24-hour clock/military time.	
0825.17	Describe and define major body systems with emphasis on the circulatory system.	
0825.18	List and describe the main superficial veins used in performing venipuncture.	
0825.19	Identify appropriate sites for capillary/venipuncture and name and locate the most desirable one(s).	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0825.20	Demonstrate skills and knowledge necessary to perform phlebotomy.	
0825.21	Describe the types of patient specimens that are analyzed in the clinical laboratory, and the phlebotomist's role in collecting and/or	

	transporting these specimens to the laboratory.	
0825.22	Demonstrate knowledge of established protocol for patient and specimen identification.	
0825.23	Recognize a properly completed requisition and apply established protocol for patient and specimen identification.	
0825.24	Discuss/perform appropriate methods for preparing a site for capillary or venipuncture.	
0825.25	List appropriate antiseptic agents useful in preparing sites for capillary/venipuncture.	
0825.26	Identify and discuss proper use of appropriate types of equipment needed to collect various clinical laboratory blood specimens by venipuncture.	
0825.27	Describe the correct order of draw during capillary and venipuncture.	
0825.28	Identify and discuss the proper use of the various types of anticoagulants, preservatives and gels used in blood collection and the vacuum tube color-codes for these additives.	
0825.29	Discuss/perform methods for facilitating capillary/venipuncture collection.	
0825.30	Perform venipuncture by evacuated tube and syringe systems, demonstrating appropriate use of supplies, proper handling of equipment/specimens and appropriate patient care.	
0825.31	Perform a capillary puncture using appropriate supplies and techniques for adults, children and neonates.	
0825.32	Describe the most common complications associated with capillary and venipuncture, their causes, prevention and treatment.	
0825.33	Describe/perform capillary/venipuncture procedures for disposing of used or contaminated supplies.	
0825.34	Describe/perform appropriate techniques for making a peripheral blood smear for hematologic evaluation.	
0825.35	Describe routine procedures for transporting and processing specimens.	
0825.36	Describe the significance of time constraints for specimen collection and delivery.	
0825.37	Demonstrate knowledge of accessioning procedures.	
0825.38	Aliquot samples for testing.	
0825.39	Describe protocol for accepting verbal test orders.	
0825.40	Explain the special precautions and types of equipment needed to collect blood from a neonate.	
0825.41	Identify and discuss proper use of supplies used in collecting micro specimens.	
0825.42	Describe substances potentially encountered during phlebotomy which can interfere in analysis of blood constituents.	
0825.43	Define and utilize correct medical terminology and metric measurement needed for specimen collection.	

Course Description: This course is designed to provide the student with knowledge on health care laws and ethics, medical terminology, basic anatomy, injury recognition, and infection control related to Sports Medicine. It is also designed to allow instructional content to focus on Sports Medicine related professions and teamwork. Students utilize problem-solving techniques and participate in hands on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Documentation, Legal, and Ethical Issues		Complete
Content Skill Sets		Knowledge/ Performance
0840.1	Maintain the confidentiality of records/information as required by HIPAA.	
0840.2	Define informed consent and identify appropriate documentation procedures and their role in patient/client care.	
0840.3	Analyze legal considerations and ethical actions.	

Emergency Care and Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0840.4	Identify the components of an Emergency Action Plan (EAP).	
0840.5	Perform proper handwashing technique.	
0840.6	Identify various bloodborne pathogens and comply with OSHA standards.	
0840.7	Utilize Personal Protective Equipment (PPE).	

Anatomy, Physiology, Pathophysiology, and Medical Terminology		Complete
Content Skill Sets		Knowledge/ Performance
0840.8	Use medical terminology and abbreviations/acronyms.	
0840.9	Identify anatomical position, body planes, directions, and cavities.	
0840.10	Identify organs, functions, and disease processes of the integumentary system.	
0840.11	Identify organs, functions, and disease processes of the skeletal system.	
0840.12	Identify organs, functions, and disease processes of the muscular system.	
0840.13	Identify organs, functions, and disease processes of the nervous system.	
0840.14	Identify organs, functions, and disease processes of the cardiovascular system.	
0840.15	Identify organs, functions, and disease processes of the respiratory system.	

West Virginia Standards

Sports Medicine Laws and Ethics		Complete
Content Skill Sets		Knowledge/ Performance
0840.16	Investigate and evaluate the legal considerations in the management of sport injuries.	
0840.17	Define the terms tort and negligence and describe commission and omission negligence.	
0840.18	Describe the criteria used to evaluate and establish proof of negligence.	
0840.19	Discuss the Good Samaritan law, including its legal implications for school personnel such as coaches or athletic trainers.	
0840.20	Describe appropriate procedures to limit liability in the instance of a sports injury.	
0840.21	Explain Health Insurance Portability and Accountability Act (HIPPA) and describe its application when managing a sports injury Incident.	
0840.22	Research and discuss local district policy and procedures related to civil litigation.	
0840.23	Discuss the ethics of sports-injury care for athletes.	
0840.24	Investigate and evaluate the legal considerations in the management of sport injuries.	

Body Systems		Complete
Content Skill Sets		Knowledge/ Performance
0840.25	Analyze the joint types, joint characteristics, and articulating structures (i.e., joint types synovial joint characteristics, etc.).	

Injury Recognition		Complete
Content Skill Sets		Knowledge/ Performance
0840.26	Differentiate between acute and chronic injury.	
0840.27	Describe acute traumatic injuries (i.e., fractures, dislocations and subluxations, contusions, ligament sprains, muscle strains, muscle soreness, and nerve injuries).	
0840.28	Identify chronic overuse injuries and their causes in sports (i.e., shin splints, plantar fasciitis, and stress fractures).	
0840.29	Describe the phases of the inflammatory process due to injury.	
0840.30	Identify the various phases of the healing process.	
0840.31	Demonstrate the steps in evaluation of injury.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
0840.32	Describe guidelines and procedures of maintaining and cleaning a safe and sanitary treatment area including the use of disinfectants, antiseptics, and sanitization techniques.	
0840.33	Recognize, properly report, and apply strategies of risk management according to OSHA compliance, SDS chemical management, and injury and illness compliance solutions.	

Employability in Sports Medicine		Complete
Content Skill Sets		Knowledge/ Performance
0840.34	Recognize potential sports medicine career pathways (Athletic Training, Physical Therapist at PT Assistant, Occupational Therapist and OT Assistant, Physician Assistant, Physicians, exercise science and rehabilitation related fields).	
0840.35	Understand sports medicine educational process, level of education requirements, credentialing requirements, employment and career growth opportunities, workplace environments, and professional development.	
0840.36	Compare and Contrast sports medicine related professional and student organizations (National Athletic Trainers Association, HOSA Future Health Professionals).	
0840.37	Demonstrate professional standards in sports medicine as they apply to behavior, language, hygiene, and appropriate dress.	
0840.38	Identify sports medicine job posting components: application procedures, resume, job description, qualifications, salary and benefits.	
0840.39	Analyze the different job settings available to sports medicine related professionals.	

Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
0840.40	Identify the sports medicine team members.	
0840.41	Define sports medicine and identify the roles of the sports medicine team.	
0840.42	Understand the actions and chain of command of the sports medicine team.	
0840.43	Explain how sports medicine team members work together.	

Course Description: This course is designed to provide the student with knowledge on sports trauma and injuries. The instructional content will focus on the psychological effects of sports injury, emergency planning and injury evaluation, and technical skills. Students utilize problem-solving techniques and participate in hands on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Human Development and Mental Health		Complete
Content Skill Sets		Knowledge/ Performance
0841.1	Identify stages of human growth and development.	
0841.2	Identify and discuss types of mental health disorders.	
0841.3	Identify and discuss types of disordered eating.	

Emergency Care and Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0841.4	Perform CPR, AED, and Basic First Aid skills.	
0841.5	Identify signs and symptoms, and prevention and treatment of head injuries and/Traumatic Brain Injuries.	

Injury Prevention and Rehabilitation		Complete
Content Skill Sets		Knowledge/ Performance
0841.6	Select the appropriate taping, bracing, and wrapping techniques	
0841.7	Utilize patient/client safety measures.	
0841.8	Compose History, Observation, Palpation, Special Tests (HOPS) and Subjective, Objective, Assessment, Plan (SOAP) notes.	
0841.9	Measure and record vital signs.	
0841.10	Measure and record height, weight, and visual acuity.	

West Virginia Standards**Sports Trauma and Injuries****Complete****Content Skill Sets****Knowledge/
Performance**

0841.11	Understand the etiology, signs, and symptoms, and treatments related to injuries to the head, neck, and face.	
0841.12	Identify potential risks of returning an athlete too soon after a concussion/TBI.	
0841.13	Understand common injuries and their mechanisms, signs, symptoms, and treatments for injuries to the axial regions.	
0841.14	Understand common injuries and their mechanisms, signs, symptoms, and treatments for injuries to the upper body extremity.	
0841.15	Understand common injuries and their mechanisms, signs, symptoms, and treatments for injuries to the lower body extremity.	
0841.16	Identify and describe common special tests used to evaluate joints (e.g., ligament, valgus and various, anterior and posterior drawer, and apprehension).	
0841.17	Identify phases of soft tissue vs. bony tissue healing.	
0841.18	Describe and access the severity or damage of tissue injury – displaced fracture vs. nondisplaced fracture, first degree vs. third degree, etc.	
0841.19	Investigate the cause of primary and secondary injuries (i.e., gait, compensatory posture etc.).	
0841.20	Understand biomechanical changes and secondary injuries that can occur during the healing process and rehabilitation.	

Psychological Effects of Sports Injury**Complete****Content Skill Sets****Knowledge/
Performance**

0841.21	Describe emotional/psychological responses to injury and rehabilitation (i.e., depression, anxiety, fear, etc.).	
0841.22	Analyze the five stages of grief and understand behaviors found in each stage.	
0841.23	Understand risk factors and behaviors that are associated with increased level of stress and methods to reduce stress.	
0841.24	Explain motivation techniques for conditioning and rehabilitation and how extrinsic and intrinsic motivation and apply them the various situations.	
0841.25	Identify risk factors, signs, and symptoms that would lead to a psychological referral (i.e., eating disorders, depressions, head injury, substance abuse, etc.).	
0841.26	Explain how variable of personality (i.e., openness, extraversion, agreeableness, or neuroticism) relate to injury rehabilitation.	
0841.27	Understand the relationship between an athlete's self-concept and the risk of sports injury.	
0841.28	Investigate the psychological impact of a sports injury on an athlete in terms of stress.	

Emergency Plan and Initial Injury Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0841.29	Describe the components of an effective emergency plan.	
0841.30	Analyze the aspects to be addressed when coaches oversee providing emergency care for athletic injuries.	
0841.31	In the assessment of an injured athlete, describe the initial check and physical exam (survey).	
0841.32	Describe the recommended procedure for opening an airway when a neck injury is suspected.	
0841.33	Identify early symptoms of internal bleeding.	
0841.34	Define and explain shock and the conditions that may lead to shock.	
0841.35	Define the functions of the emergency team (e.g., immediate care, emergency equipment retrieval, activation of EMS, and directing EMS to the athlete).	
0841.36	Identify and summarize the medical training all organized sports personnel should receive.	
0841.37	Analyze the issues pertaining to return-to-play decision made by a medical professional.	

Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0841.38	Identify and demonstrate various bandaging and taping skills.	
0841.39	Explain the need for and demonstrate the application of various roller, triangular, and cravat bandages.	
0841.40	Identify the different taping materials available.	
0841.41	Explain the purpose of each strip in the application of tape to an arch, ankle, shin, hand, wrist, and thumb.	
0841.42	Perform proper removal of tape and bandages from an extremity.	

Course Description: Instructional content of this course will focus on sports injury prevention and rehabilitation. This course is designed to allow students to focus on nutrition for athletes, therapeutic modalities, therapeutic exercise and intervention, reconditioning, and pain management. Students will participate in a work-based clinical internship in the sports medicine industry. Due to health care industry standards, exemplary attendance is mandatory. Students utilize problem-solving techniques and participate in hands on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Organizational and Professional Health and Wellbeing		Complete
Content Skill Sets		Knowledge/ Performance
0842.1	Use medical/Fitness equipment.	
0842.2	Use proper body mechanics for personal and patient/client safety.	

Emergency Care and Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0842.3	Identify signs and symptoms, and prevention and treatment of weather-related illnesses.	
0842.4	Apply Protect, Rest, Ice, Compress, and Elevate (PRICE) principle.	

Injury Prevention and Rehabilitation		Complete
Content Skill Sets		Knowledge/ Performance
0842.5	Utilize patient/client safety measures.	
0842.6	Measure and perform Range of Motion (ROM).	
0842.7	Perform Manual Muscle Test (MMT).	
0842.8	Identify signs and symptoms, and prevention and treatment of neuromusculoskeletal injuries.	

Nutrition and Hydration		Complete
Content Skill Sets		Knowledge/ Performance
0842.9	Explain daily nutritional requirements and caloric intake needs.	
0842.10	Evaluate food labels.	
0842.11	Evaluate basic and sports nutrition needs, including hydration.	
0842.12	Identify signs and symptoms of dehydration.	

Exercise Science and Prescription		Complete
Content Skill Sets		Knowledge/ Performance
0842.13	Simulate pre-exercise screening in determining physical activity participation.	
0842.14	Conduct baseline testing for body composition, cardiorespiratory fitness, muscular strength, endurance, and flexibility.	
0842.15	Implement the components of exercise prescription and modification.	
0842.16	Select and demonstrate exercises to improve body composition, cardiorespiratory fitness, muscular strength, and muscular endurance and flexibility.	
0842.17	Select and demonstrate exercises to improve agility, power, speed, balance, and proprioception.	
0842.18	Create short-term and long-term goals utilizing the Specific, Measurable, Attainable, Realistic, and Time-bound (SMART) principle.	
0842.19	Execute spotting techniques for resistance training exercise.	

West Virginia Standards

Injury Process		Complete
Content Skill Sets		Knowledge/ Performance
0842.20	Analyze the effects of the injury process on body tissues.	
0842.21	Describe various mechanical forces that can cause injury.	
0842.22	Analyze the physiological effects and the time frame of the healing process for various injuries.	
0842.23	Evaluate how the injury process affects soft tissue and bone.	
0842.24	Describe the assessment of pain and pain control.	
0842.25	Differentiate between cryotherapy and thermotherapy.	
0842.26	Describe the importance of exercise in the healing process.	

Injury Prevention		Complete
Content Skill Sets		Knowledge/ Performance
0842.27	Differentiate and analyze the elements of preventing sports injuries.	
0842.28	Explain the differences between intrinsic and extrinsic causative factors leading to a sports injury.	
0842.29	Describe the components of fitness that can aid in sports injury preventions (i.e., speed, strength, agility, and coordination).	
0842.30	Describe the relationships between volume, intensity, and frequency of training as they relate to periodization.	
0842.31	Explain the advantages and disadvantages of stretching exercises.	
0842.32	Explain the influence that dietary habits have on over performance and recovery from injury.	
0842.33	Identify the role of protective equipment and proper fitting of equipment in the prevention of injuries.	

Injury Rehabilitation		Complete
Content Skill Sets		Knowledge/ Performance
0842.34	Demonstrate isometric and isotonic exercise.	
0842.35	Demonstrate proper instruction of rehab exercise.	
0842.36	Perform a specified rehab exercise for each upper and lower extremity.	
0842.37	Demonstrate proper functional progression exercises.	
0842.38	Demonstrate proper use of rehab equipment (i.e., bike, weights, and theraband).	
0842.39	Identify the criteria for return to play.	
0842.40	Explain documentation for proper record keeping of a rehab session.	

Nutritional Practice for Athletic Performance		Complete
Content Skill Sets		Knowledge/ Performance
0842.41	Describe and explain nutritional concepts and physical composition of food (e.g., 6 basic nutrients, protein, carbohydrates, fats, vitamins, minerals, and water).	
0842.42	Explain the role in the body of the six major types of nutrients.	
0842.43	Explain the best sources and quantities needed of the six types of nutrients.	
0842.44	Calculate and analyze caloric intake in relation to dietary guidelines to maintain, lose, or gain weight (e.g., RDA for protein, carbohydrates, and fat).	
0842.45	Describe general concepts of athletic hydration (i.e., method to monitor hydration levels, proper hydration processes, signs and symptoms of dehydration).	
0842.46	Explain the relationship of nutrition to injury recovery.	

Therapeutic Modalities		Complete
Content Skill Sets		Knowledge/ Performance
0842.47	Describe the effects of cold versus heat modalities on the body.	
0842.48	Identify and explain the various heat and cold modalities available.	
0842.49	Describe the effect of electrical stimulation and ultrasound on the healing process of athletic injuries.	
0842.50	Demonstrate the proper set-up of specified modalities.	
0842.51	Perform the proper application of specified modalities.	

Therapeutic Exercise, Training and Reconditioning		Complete
Content Skill Sets		Knowledge/ Performance
0842.52	Differentiate various exercises (i.e., isometric, isotonic, manual resistance, isokinetic, circuit training, etc.).	
0842.53	Explain early and advance strengthening, endurance, and proprioceptive exercises.	
0842.54	Describe classifications of exercises (i.e., open/close chain, isotonic vs. isokinetic, etc.).	
0842.55	Develop and understanding of indications, contraindication, safety precautions, and applications for various types of exercises.	
0842.56	Explain strength, mobility, and balance as related to performance and injury prevention.	
0842.57	Explain indications, contraindications, precautions, and proper fitting of devices for mobility, transfers, and ambulation (e.g., weight-bearing assistive devices, prosthetics, orthotic devices, and protective equipment).	
0842.58	Describe musculoskeletal injury rehabilitation progression (e.g., return-to-play, work, daily activity criteria and full strength, free from pain skill performance test, and emotional readiness).	

Therapeutic Interventions and Pain Management		Complete
Content Skill Sets		Knowledge/ Performance
0842.59	Describe treatment expectations, physiological changes, and special instructions for specific interventions (i.e., thermotherapy, cryotherapy, electric stimulation, ultrasound, hydrotherapy, compression etc.).	
0842.60	Explain indications, contraindications, safety precautions, and applications of various modalities.	
0842.61	Recognize traditional and nontraditional approaches to pain management (i.e., pharmaceutical medications and alternative pain control approaches – acupuncture, massage, meditation, etc.	
0842.62	Identify the pharmacologic agents commonly used in the healing process.	

Treatment Planning and Implementation		Complete
Content Skill Sets		Knowledge/ Performance
0842.63	Design a treatment plan incorporating patient/client input.	
0842.64	Create a treatment plan using a problem-solving model.	
0842.65	Evaluate a treatment plan for intervention opportunities.	
0842.66	Select appropriate resources to implement treatment plan.	
0842.67	Evaluate priorities in order to organize work.	
0842.68	Students will participate in a minimum of 30 hours of a job shadowing and/or internship with instructor supervision.	

Course Description: Instructional content of this course will focus on management of sports injuries. This course is designed to allow students to apply sports medicine skills and knowledge to analyze injuries, develop injury rehabilitation plans, perform specialized taping skills, and demonstrate leadership in the clinical setting. Students will participate in a work-based clinical internship in the sports medicine industry. Due to health care industry standards, exemplary attendance is mandatory. Students utilize problem-solving techniques and participate in hands on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Organizational and Professional Health and Wellbeing		Complete
Content Skill Sets		Knowledge/ Performance
0843.1	Utilize safety and emergency procedures and report emergencies immediately.	
0843.2	Adhere to the professional standards for healthcare providers.	

Emergency Care and Infection Control		Complete
Content Skill Sets		Knowledge/ Performance
0843.3	Identify signs and symptoms, and prevention and treatment of acute traumatic spine injuries.	
0843.4	Identify common causes of cardiorespiratory complications.	
0843.5	Identify emergency management techniques for neuromusculoskeletal conditions.	

West Virginia Standards

Management of Head, Neck and Spine Injuries		Complete
Content Skill Sets		Knowledge/ Performance
0843.6	Differentiate between cranial and intracranial brain injury.	
0843.7	Describe the initial treatment guidelines for a suspected head injury.	
0843.8	Identify the signs and symptoms of a concussion.	
0843.9	Identify the causes, symptoms, and treatment of dental injuries.	
0843.10	Describe the symptoms and treatment of eye, ear, and nasal injuries.	
0843.11	Summarize the care of facial wounds.	
0843.12	Describe and identify the anatomy of the cervical and thoracic spine.	
0843.13	Describe the physiology of and demonstrate spinal active ranges of motion including flexion, extension, lateral flexion, and rotation.	

Management of Shoulder Injuries		Complete
Content Skill Sets		Knowledge/ Performance
0843.14	Understand the anatomy, mechanisms of injury, symptoms, emergency procedures, and treatment of injuries to the shoulder region.	
0843.15	Identify bones, articulations, stabilizing ligaments, and musculature of the shoulder complex.	
0843.16	Summarize the specific skeletal injuries that occur to the shoulder joint.	
0843.17	Describe the etiology, signs, symptoms, and first-aid care for skeletal injuries and soft-tissues injuries to the shoulder region.	

Management of Upper and Lower Extremity Injures		Complete
Content Skill Sets		Knowledge/ Performance
0843.18	Identify the bones, articulations, stabilizing ligaments, and musculature of the elbow, forearm, wrist, and hand.	
0843.19	Describe soft-tissue injuries and classification of fractures to the upper arm, and their signs, symptoms, and first-aid care.	
0843.20	Describe the signs, symptoms, and first-aid care for sprains, dislocations, fractures, contusions, epicondylitis, and osteochondritis dissecans of the elbow.	
0843.21	Describe the etiology, signs, symptoms, and first-aid care for fractures, nerve injuries, and tendon injuries of the wrist, hand and fingers.	
0843.22	Demonstrated a selected elbow, wrist, and hand taping/wrapping technique.	
0843.23	Understand the anatomy of the thigh, hip, knee, and pelvis and identify skeletal and soft-tissue injuries and their etiology, signs, symptoms, and first-aid care.	
0843.24	Identify anatomical surface landmarks, including femur, ilium, ischium, sacrum, quadriceps, hamstrings, groin muscles, abductor muscles, and sartorius muscle.	
0843.25	Demonstrate selected thigh, hip, knee, and pelvis taping/wrapping techniques (i.e., Quadriceps support wrap, hamstring support wrap, groin spica support wrap, hip flexor support wrap, knee compression wrap, knee ligament taping, and patellofemoral taping).	
0843.26	Describe the anatomy of the lower leg, ankle, and foot.	
0843.27	Identify specific skeletal and soft-tissue injuries that occur to the lower leg, ankle, and foot.	
0843.28	Describe the physiology of and demonstrate foot active ranges of motion, including dorsiflexion, plantar flexion, circumduction, eversion, and inversion.	
0843.29	Demonstrate selected foot taping/wrapping techniques such as blister bandaging, toe sprains, and arch sprain taping.	
0843.30	Summarize the steps in preventative ankle taping.	

Management of Injuries to the Abdomen and Torso		Complete
Content Skill Sets		Knowledge/ Performance
0843.31	Describe the anatomy of the thorax and abdomen with the mechanisms of injury, symptoms, emergency procedures, and treatment of injuries.	
0843.32	Describe the injuries and related conditions to the lungs, liver, kidneys, spleen, and bladder.	
0843.33	Describe the various injuries and health conditions that cause abdominal pain.	

Applications of Sports Medicine		Complete
Content Skill Sets		Knowledge/ Performance
0843.34	Students will be able to develop a rehabilitation program for lower body extremities.	
0843.35	Students will be able to develop a rehabilitation program for upper body extremities.	
0843.36	Students will be able to analyze data to conduct research on lower extremity injuries.	
0843.37	Students will be able to analyze data to conduct research on upper extremity injuries.	
0843.38	Students will demonstrate the ability to tape special lower extremity injuries.	
0843.39	Students will demonstrate the ability to tape special upper extremity injuries.	
0843.40	Students will demonstrate leadership skills in the clinical setting.	
0843.41	Students will participate in a minimum of 30 hours of a job shadowing and/or internship with instructor supervision.	

Course Description: This course is designed to allow instructional content to focus on medical math concepts and is designed for mathematics in a medical setting. Students will obtain knowledge in the following topics: basic math, fractions, decimals, ratios and percentages, measurement systems, prescriptions and dosages, IV therapy, documentation, and calculations. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, HOSA-Future Health Professionals. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and Content skill sets.

Basics of Medical Math		Complete
Content Skill Sets		Knowledge/ Performance
0850.1	Identify why math is important in healthcare.	
0850.2	Understand basic math skills used in every health career.	
0850.3	Identify what math skills are important to healthcare providers.	
0850.4	Know when a calculator should be used.	
0850.5	Convert Roman numerals to Arabic numerals and vice versa.	
0850.6	Demonstrate knowledge of addition, subtraction, multiplication, division.	
0850.7	Solve for X equations.	
0850.8	Understand solving equations as a process of reasoning and explain the reasoning.	
0850.9	Solve systems of equations.	

Fractions		Complete
Content Skill Sets		Knowledge/ Performance
0850.10	Discuss the meaning of fractions.	
0850.11	Explain the advantages of using fractions in healthcare.	
0850.12	Demonstrate knowledge of how to find the numerator and denominator.	
0850.13	Understand the use of fractions in a division problem.	
0850.14	Demonstrate knowledge of common fractions.	
0850.15	Reduce fractions using common denominators.	
0850.16	Discuss mixed numbers.	
0850.17	Add and subtract fractions.	
0850.18	Multiply and divide fractions.	
0850.19	Divide fractions and express answers to the nearest tenth and hundredth using a calculator.	
0850.20	Solve equations containing whole numbers, decimal numbers, multiple numbers.	

Decimals		Complete
Content Skill Sets		Knowledge/ Performance
0850.21	Identify the relative value of decimals.	
0850.22	Explain place value of decimals and their importance in health care.	
0850.23	Explain the advantages of using decimals in health care.	
0850.24	Convert from decimal to fractions and vice versa.	
0850.25	Add and subtract decimals.	
0850.26	Multiply and divide decimals.	
0850.27	Round decimals.	
0850.28	Recognize the abbreviations: mg for milligram, and g for gram as drug measures.	

Ratio, Proportion, and Percent		Complete
Content Skill Sets		Knowledge/ Performance
0850.29	Express a comparison of two quantities in a ratio form.	
0850.30	Define ratios.	
0850.31	Define proportions.	
0850.32	Define percentages.	
0850.33	Determine if proportions are equal.	
0850.34	Solve dosage problems using ration and proportion.	
0850.35	Apply the concepts of ratio and proportion to the solution of rate problems.	
0850.36	Change any number from a percent form to fraction or mixed number from or vice versa.	
0850.37	Change any number from a percent form to a decimal.	
0850.38	Find a percent of a given quantity.	
0850.39	Solve to find a percent using multiplication and division.	
0850.40	Solve to find a percent using proportions.	

Measurement Systems**Complete****Content Skill Sets****Knowledge/
Performance**

0850.41	List the commonly used units of measure in the metric system.	
0850.42	Distinguish between the official abbreviations and variations in common use.	
0850.43	Convert international system to metric.	
0850.44	Convert household system to metric.	
0850.45	Convert apothecaries system to metric.	
0850.46	Convert 12-hour clock to 24 hours.	
0850.47	Discuss using an analog clock vs. digital.	
0850.48	Demonstrate understanding of the international system.	
0850.49	Demonstrate understanding of the apothecary system.	
0850.50	List the key components of the household system.	
0850.51	Express metric weights and volumes using correct notation rules.	
0850.52	Demonstrate knowledge of conversion of US system length to metric (meter).	
0850.53	Demonstrate knowledge of conversion of US weight to metric (kilograms).	
0850.54	Demonstrate knowledge of conversion of US system volume to metric (liters).	
0850.55	Describe how to read a thermometer.	
0850.56	Demonstrate knowledge of conversion of temperature from Fahrenheit to Celsius.	
0850.57	Explain the concept of measuring intake and output.	
0850.58	Discuss how to determine body surface area.	
0850.59	Know how to read manual scales.	
0850.60	Demonstrate how to take length measurements.	
0850.61	Determine total input and output.	
0850.62	Estimate liquid and food intake.	

Medication Prescriptions, Dosage and Administration		Complete
Content Skill Sets		Knowledge/ Performance
0850.63	Demonstrate knowledge of the components of a medication label.	
0850.64	Understand medical symbols for dosage instructions.	
0850.65	Know the routes of medication administration and why each route is used.	
0850.66	Understand the methods of medication administration.	
0850.67	Discuss the “rights” of medication administration.	
0850.68	Discuss the safety limits for medication dosages.	
0850.69	Demonstrate how to properly read a prescription.	
0850.70	Locate dosage strengths and calculate simple dosages.	
0850.71	Differentiate tablets, capsules, and liquid oral medication forms and dosages.	
0850.72	Identify scored tablets, unscored tablets, and capsules.	
0850.73	Describe how to properly read a syringe.	
0850.74	Measure parenteral solutions using: <ul style="list-style-type: none"> • Standard 3 mL/cc syringe • Tuberculin syringe • Insulin syringe • 5,6,10, and 12 mL/cc syringes • 20 cc syringe 	
0850.75	Read drug labels to identify trade and generic names.	
0850.76	Determine the correct syringe and needle sized needed for different types of medication administration.	
0850.77	Describe how to properly read medication in an IV bag.	
0850.78	Discuss concentrations of solutions.	
0850.79	Recognize dosages: <ul style="list-style-type: none"> • Measured in units • Measured in percentages • Using ratio strengths • In milliequivalents • In apothecary measures • In household measures 	
0850.80	Measure oral solutions using a medicine cup.	
0850.81	Describe how medications dosages are used at home.	
0850.82	Discuss medication errors and how to ensure medication administration safety.	
0850.83	Prepare powdered drugs using directions printed on vial labels.	
0850.84	Prepare powdered solutions from powdered drugs using drug literature or inserts.	
0850.85	Determine expiration dates and times for reconstituted drugs.	
0850.86	Distinguish between insulin of animal and human origin.	

0850.87	Discuss the difference between rapid, intermediate, and long-acting insulins.	
0850.88	Read insulin labels to identify origin and type.	
0850.89	Read calibrations on U-100 insulin syringes.	
0850.90	Read dosage in pre-loaded insulin pens.	
0850.91	Measure single insulin dosages.	
0850.92	Measure combined insulin dosages.	
0850.93	Use the formula method to solve simple dosage problems containing metric, U, and mEq dosages.	
0850.94	Convert body weight from lb. to kg; and from kg to lb.	
0850.95	Calculate dosages using mg/kg, mcg/kg, mg/lb.	
0850.96	Demonstrate proper technique for IM injections.	
0850.97	Demonstrate proper technique for SQ injections.	

Intravenous Therapy		Complete
Content Skill Sets		Knowledge/ Performance
0850.98	Differentiate between primary and secondary administration sets, and peripheral and central IV lines.	
0850.99	Explain the function of drip chambers, roller and slide clamps, and on-line and indwelling injection ports.	
0850.100	Differentiate between volumetric pumps, syringe pumps, PCA's and IV push.	
0850.101	Identify abbreviations for common types of intravenous solution.	
0850.102	Identify the calibrations in gtt/mL on IV administration sets.	
0850.103	Read the markings for calibration on an IV bag or bottle.	
0850.104	Differentiate between a macro drip and a micro drip IV administration set.	
0850.105	Determine which drip set should be used for different medications.	
0850.106	Calculate the IV flow rate and drip rate using the rate formula method.	
0850.107	Calculate flow rates by the division factor method.	
0850.108	Calculate the dosage of selected IV medications.	
0850.109	Calculate the flow rate and drip rate needed to deliver the prescribed dosage of IV medication.	
0850.110	Calculate IV infusion times using: <ul style="list-style-type: none"> • Volume and hourly rate of infusion • Volume, gtt/min rate of infusion and set calibration • Start time and infusion time to determine completion times 	
0850.111	Calculate <ul style="list-style-type: none"> • Flow rates to infuse ordered dosages • Dosages and flow rates based on kg body weight • Dosage infusing from flow rate and solution strength • Dosage and flow rate ranges for titrated medications 	
0850.112	Characterize various solutions used in pharmacy to include: <ul style="list-style-type: none"> • Irrigation • IV Piggy Back • Total Parenteral Nutrition (TPN) 	
0850.113	Check drug dosages to avoid errors in medication administration.	
0850.114	Explain why a flush is included in IV medication administration.	

Documentation		Complete
Content Skill Sets		Knowledge/ Performance
0850.115	Demonstrate knowledge of medication administration record documentation.	
0850.116	Demonstrate knowledge of computer documentation.	
0850.117	State why accurate documentation is important.	
0850.118	Record drug, dosage, route, frequency, and times of administration on a medication administration record.	
0850.119	Record a client's fluid intake and output.	
0850.120	Graph vital signs on a graphic chart.	
0850.121	Identify the advantages of using flow sheets for documentation.	
0850.122	Identify the advantage of using computers for clinical documentation of drug therapy.	

Special Populations		Complete
Content Skill Sets		Knowledge/ Performance
0850.123	Understand how medication used during pregnancy will affect the mother and fetus.	
0850.124	Explain special conditions during pregnancy that will require medication therapy.	
0850.125	Understand medication changes in child and infant medication dosages.	
0850.126	Calculate oral doses for pediatric patients.	
0850.127	Apply general rules for calculating an infant's or child's dose of medication when given the age or weight of the patient and the normal adult dose.	
0850.128	Explain the potential problems with fluid administration to pediatric patients.	
0850.129	Explain how suspensions are measured and administered to pediatric patients.	
0850.130	List the precautions of IM and SC injection in infants and children.	
0850.131	Explain the changes that occur in geriatric patient that can affect medication absorption and reaction.	
0850.132	Explain how dialysis, liver disease effects medication.	
0850.133	Demonstrate understanding of possible medication interactions.	
0850.134	Calculate pediatric IM and SC dosages.	
0850.135	Determine criteria for critical care.	
0850.136	Explain different scenarios that could be encountered in the critical care setting.	
0850.137	Demonstrate understanding of common medications used in the treatment of critical care patients.	
0850.138	Describe emergency care situations.	
0850.139	Explain different scenarios that could be encountered in the emergency situations.	
0850.140	Demonstrate understanding of common medications used in emergency care.	
0850.141	Demonstrate understanding of IV medications used during cardiac arrest.	

Dosage Calculations

Dosage Calculations		Complete
Content Skill Sets		Knowledge/ Performance
0850.142	Know differences in drug dosage calculations for both adults and children.	
0850.143	Know how to follow the proper steps in the calculation of drug doses.	
0850.144	Interpret medication labels.	
0850.145	Compare medication label information to medication order.	
0850.146	Convert to the same units of measure.	
0850.147	Articulate the proportion method and the formula method for calculating drug doses.	
0850.148	Compute drug doses using the proportion method and the formula method.	
0850.149	Utilize the methods for calculating pediatric drug doses.	

Course Description: This course is designed to help students evaluate readiness for parenting while examining appropriate Parenting and Strong Families practices. Students will develop an awareness of societal issues affecting families and explore support systems. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities and to manage the challenges of living and working in a diverse global society. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This is the only course that complies with requirements of WVDE Policy 2530.02.

Family and Community Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0903.1	Demonstrate an understanding of lifespan development.	
0903.2	Identify and access appropriate community services and resources.	
0903.3	Promote family and community health awareness.	
0903.4	Evaluate family needs and available community services.	

Quality Parenting Environments		Complete
Content Skill Sets		Knowledge/ Performance
0903.5	Examine roles and responsibilities relating to positive parenting practices.	
0903.6	Examine family structures.	
0903.7	Develop and implement long and short-term goals for fulfilling the roles of parenting.	
0903.8	Compare the differences between guidance, discipline, and punishment.	
0903.9	Evaluate the types, causes, and effects of child abuse and neglect.	
0903.10	Assess the importance of setting developmentally appropriate expectations.	
0903.11	Analyze outcomes of parenting practices for children, families, and society.	
0903.12	Explain methods to manage anger, frustration, separation, and loss.	
0903.13	Examine the impact on financial issues on children and parents.	
0903.14	Analyze the effects of social policies and issues on children and parents.	
0903.15	Discuss the influences of culture on parenting philosophies and practices.	

Relationship Readiness and Enrichment		Complete
Content Skill Sets		Knowledge/ Performance
0903.16	Examine parent role expectations and readiness.	
0903.17	Summarize biological processes.	
0903.18	Estimate the cost of rearing a child.	
0903.19	Examine the interrelationships of parenting career, and other life goals.	

Emotional and Physical Effects of Parenthood		Complete
Content Skill Sets		Knowledge/ Performance
0903.20	Explain factors contributing to emotional and physical health of mother, father, and baby during pre-natal period including the effects of exposure to various hazards on fetal development.	
0903.21	Discuss factors contributing to emotional and physical health of mother, father, and baby during post-natal period.	
0903.22	Describe parents' roles during pregnancy and the emotional changes that occur.	
0903.23	Explain the impact of bonding on parent-child relationships.	
0903.24	Discuss family adjustments and coping strategies after pregnancy.	

Developmental Milestone Preparedness		Complete
Content Skill Sets		Knowledge/ Performance
0903.25	Examine the essential elements representing the development of children.	
0903.26	Assess parenting practices that meet developmental needs.	
0903.27	Demonstrate practices that nurture the development of children.	
0903.28	Plan strategies for meeting individual developmental challenges and special needs.	
0903.29	Explain strategies for integrating a new child into the family.	
0903.30	Plan and implement strategies to enhance development of children through play and activities.	
0903.31	Demonstrate the use of appropriate communication skills with children in various stages of development.	
0903.32	Examine strategies for meeting nutritional needs.	
0903.33	Explain the impact if the bonding process on parent-child relationships.	

Family Resource Identification and Assessment		Complete
Content Skill Sets		Knowledge/ Performance
0903.34	Outline components of effective parenting support systems.	
0903.35	Develop criteria for evaluating quality child care programs.	

Course Description: This course is designed to focus on principles of human development across the life-span including developmental concepts, theories, principles and issues relating to growth, development and behavior. Emphasis will be placed on normal growth and milestones and cognitive, social, emotional, cultural and physical influences. The implications of developmental theory on parenting, education, social policy formation and self-understanding will be examined. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Theory Development		Complete
Content Skill Sets		Knowledge/ Performance
0904.01	Demonstrate ability to communicate principles of human development.	
0904.02	Examine interrelationships among physical, emotional, social and intellectual aspects of human growth and development.	
0904.03	Analyze current and emerging research regarding human growth and development.	

Chronological Approach Interventions		Complete
Content Skill Sets		Knowledge/ Performance
0904.04	Analyze biological processes related to stages of development.	
0904.05	Compare and contrast the developmental roles of various stages.	
0904.06	Evaluate the effects of heredity, gender and culture on individual development.	

Human Growth and Development Promotion Strategies		Complete
Content Skill Sets		Knowledge/ Performance
0904.07	Examine the roles of nurturance and communication on human growth and development.	
0904.08	Evaluate the impact of social, economic and technological forces on individual growth and development.	
0904.09	Analyze the role of family and social support systems in meeting human growth and development needs.	
0904.10	Analyze processes for building and maintaining interpersonal relationships across the lifespan.	
0904.11	Characterize the effects of life span events and conditions on development.	

Course Description: This course is designed to describe fundamental principles of the helping professions within the Human Services career cluster. Students will synthesize the knowledge, skills, attitudes and practices required for careers addressing the social issues and concerns of individuals, families and communities. Topics include: the roles and functions of Human Service professionals; professional, legal, ethical and safety issues and policies; Human Services interventions such as effective communication skills, problem-solving techniques and wellness initiatives; issues relating to disadvantaging conditions experienced by recipients of Human Services; and diversity. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA or HOSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

General Human Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
0928.01	Apply professional standards when interacting with clients, coworkers, and public.	
0928.02	Display familiarity with human services terminology.	
0928.03	Employ organizational and planning skills to meet the needs of service recipients.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
0928.04	Apply literacy skills in a human services career environment.	
0928.05	Apply mathematical skills in a human services career environment.	
0928.06	Apply science skills in a human services career environment.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
0928.07	Describe relationships, roles, and responsibilities among human service professionals.	
0928.08	Analyze impact on human services of technology, economy, and environment.	

Ethics and Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
0928.09	Apply appropriate laws, regulations, and industry standards in human service situations.	
0928.10	Identify ethical issues and established ethical behavior in human service situations.	

Communications**Complete****Content Skill Sets****Knowledge/
Performance**

0928.11	Communicate using appropriate language and level, including using appropriate techniques for communicating with special needs individuals.	
0928.12	Apply listening skills and interpret verbal and nonverbal behaviors to enhance communication with coworkers and the public.	
0928.13	Interpret and use tables, charts, and figures to support written and oral communication.	

Information Technology Applications**Complete****Content Skill Sets****Knowledge/
Performance**

0928.14	Use word Processing, presentation software, and email applications.	
0928.15	Use spreadsheet and database application.	

Problem Solving, Critical Thinking, and Decision Making**Complete****Content Skill Sets****Knowledge/
Performance**

0928.16	Use problem solving and critical thinking skills to locate credible sources of information about problems and determine appropriate methods for investigating causes.	
0928.17	Use problem solving and critical thinking skills to determine root causes of problems and to suggest and evaluate solutions.	
0928.18	Demonstrate skills involving crisis intervention and management.	

Leadership and Teamwork**Complete****Content Skill Sets****Knowledge/
Performance**

0928.19	Apply leadership qualities.	
0928.20	Work effectively in a team environment.	
0928.21	Implement strategies to promote advocacy.	

Safety, Health and Environmental**Complete****Content Skill Sets****Knowledge/
Performance**

0928.22	Identify and practice appropriate safety and health procedures.	
0928.23	Demonstrate appropriate emergency and first aid knowledge and procedures.	
0928.24	Identify and practice appropriate environmental procedures.	

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
0928.25	Demonstrate appropriate workplace behavior.	
0928.26	Pursue career development skills to advance in careers.	

Interventions and Direct Services		Complete
Content Skill Sets		Knowledge/ Performance
0928.27	Analyze methods of social services delivery.	
0928.28	Define the process of evidence-informed practice.	
0928.29	Exhibit the use of empathy in interpersonal relationships.	
0928.30	Apply diverse interview techniques.	
0928.31	Gather and interpret appropriate information to document and assess environmental, emotional, cultural, socioeconomic, educational, biological, medical, psychosocial, and legal factors in various situations.	
0928.32	Develop and implement prevention and intervention plans in various situations.	

Human Systems		Complete
Content Skill Sets		Knowledge/ Performance
0928.33	Explain the role of diversity in shaping life experiences.	

Information Management, Planning and Evaluation		Complete
Content Skill Sets		Knowledge/ Performance
0928.34	Analyze a case study evaluation.	
0928.35	Conduct needs assessments to plan for service delivery.	
0928.36	Create long and short-term goals for service delivery.	
0928.37	Plan interventions appropriate to needs and goals.	
0928.38	Maintain relevant data to assist with planning, management, assessments, and interventions.	
0928.39	Collect, analyze, and interpret data to evaluate and modify interventions.	

Course Description: The LIFE (Learning for Independence, Family, and Employment) student will develop skills to function successfully within family, community and peer groups. By utilizing basic skills and higher order thinking skills, the student will learn problem solving and management techniques, resource management, consumer education, and relationships skills. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities and to manage the challenges of living and working in a diverse global society. The Skill Sets in this course focus on the basic and intermediate levels of knowledge necessary for the development of responsible and disciplined behaviors leading to self-sufficiency in adulthood. Life Connections is an elective designed for the initial high school course in life management skills and may be an adjunct to any CTE Program of Study. Life Connections may be an initial course or build on BASE skills from middle school. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Career Awareness		Complete
Content Skill Sets		Knowledge/ Performance
0929.01	Career paths.	
0929.02	Goal development and achievement.	
0929.03	Attitudes and work habits that support career retention and advancement.	
0929.04	Personal qualities and abilities needed for career success.	
0929.05	Communication in varied contexts.	
0929.06	Relate skills and abilities to possible career pathways.	
0929.07	Explain methods of goal development.	
0929.08	Discuss methods of time management and task coordination.	
0929.09	Practice professionalism in punctuality, appropriate dress, task completion, etc.	
0929.10	Apply good personal grooming habits.	
0929.11	Evaluate factors affecting a positive personal and professional image in personal style of dress.	
0929.12	Develop routine habits for appropriate care of clothing.	
0929.13	Investigate methods of supervision such as giving and receiving feedback and instruction.	
0929.14	Develop and present a statement of personal work ethic beliefs.	
0929.15	Prepare an application, cover letter, resume and thank you letter.	
0929.16	Create an employment portfolio for use when applying for employment.	

Communication		Complete
Content Skill Sets		Knowledge/ Performance
0929.17	Concepts of effective communication skills.	

0929.18	Written communication skills.	
0929.19	Oral communication skills.	
0929.20	Interpreting information and ideas.	
0929.21	Interpret verbal and nonverbal communication.	
0929.22	Apply basic speaking and active listening skills including reflection, restatement and clarification techniques.	
0929.23	Recognize barriers to communication.	
0929.24	Recognize the elements of communication using a sender-receiver model.	
0929.25	Apply speaking and active listening skills.	
0929.26	Recognize elements of written and electronic communication including writing a letter (spelling, grammar and formatting).	
0929.27	Recognize the importance of courtesy and respect for customers and colleagues and maintain good interpersonal relationships.	
0929.28	Discuss how to adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.	
0929.29	Distinguish between and report subjective and objective information.	
0929.30	Report relevant information in order of occurrence.	
0929.31	Select and employ appropriate communication concepts and strategies to enhance oral and written communication in the workplace.	
0929.32	Locate, organize, and reference written information from various sources.	
0929.33	Design, develop and deliver formal and informal presentations using appropriate media to engage and inform diverse audiences.	
0929.34	Develop and interpret tables and charts to support written and oral communication.	

Consumer Awareness/Personal and Family Finance		Complete
Content Skill Sets		Knowledge/ Performance
0929.35	Financial responsibility and decision making.	
0929.36	income and careers.	
0929.37	Planning and money management.	
0929.38	Credit and debt.	
0929.39	Risk management and insurance.	
0929.40	Saving and investing.	
0929.41	Financial responsibility and decision making.	
0929.42	Take responsibility for personal and family financial decisions based on needs, wants, and values.	
0929.43	Find and evaluate financial information from a variety of sources.	
0929.44	Examine consumer decisions, mass media, advertising and impulse buying.	
0929.45	Discuss how peers, mass media and advertising can affect an individual's purchases.	
0929.46	Examine factors that influence price, quality and consumer services.	
0929.47	Make financial decisions by systematically considering alternatives, consequences, and the economy.	
0929.48	Develop communication strategies for addressing individual and family financial issues including needs, wants, and values.	
0929.49	Control personal information.	
0929.50	Identify the relationship of work or career goals as they relate to family goals.	

0929.51	Explore employment options for making a living.	
0929.52	Analyze the effect of education and skills on employment.	
0929.53	Analyze how employment choices and economic conditions affect income.	
0929.54	Identify sources of personal income.	
0929.55	Describe factors affecting take-home pay.	
0929.56	Develop a plan for spending and saving based upon personal and family goals and values.	
0929.57	Develop a system for keeping and using financial records and legal documents.	
0929.58	Describe and analyze how to use different payments including banking services.	
0929.59	Apply consumer skills to purchasing decisions including analyzing food and clothing choices.	
0929.60	Develop a personal or family financial plan.	
0929.61	Examine the purpose and importance of estate and long-term financial planning.	
0929.62	Identify personal and family goals related to credit and debt.	
0929.63	Outline responsibilities as related to obtaining and managing personal and family credit.	
0929.64	Identify the costs and benefits of various types of credit.	
0929.65	Compare types of loans used to finance a car, education expenses, and housing.	
0929.66	Explain the purpose of a credit record and identify borrowers' credit report rights.	
0929.67	Describe ways to avoid or correct debt problems.	
0929.68	Summarize major consumer credit laws.	
0929.69	Identify common types of risks and basic risk management methods.	
0929.70	Explain the purpose and importance of property and liability insurance protection as part of individual and family financial planning.	
0929.71	Explain the purpose of health, disability and life insurance protection as part of individual and family financial planning.	
0929.72	Compare saving and investment options to meet various personal and family goals.	
0929.73	Discuss how saving and investment contributes to financial well-being and goal achievement.	
0929.74	Describe alternatives for researching, purchasing and utilizing saving and investment products.	
0929.75	Explain how interest rates, taxes and fees affect the return on savings and investment.	
0929.76	Investigate how agencies that regulate financial markets protect consumers.	

Nutrition, Food, and Wellness		Complete
Content Skill Sets		Knowledge/ Performance
0929.77	Healthy behaviors.	
0929.78	Wellness.	
0929.79	Disease prevention.	
0929.80	Nutrition principles.	
0929.81	Food handling.	
0929.82	Food safety.	
0929.83	Apply behaviors that promote health and wellness.	
0929.84	Identify personal health practices and environmental factors which affect optimal function of each of the major body systems.	

0929.85	Identify psychological reactions to illness including defense mechanisms.	
0929.86	Discuss the adverse effects of the use of alcohol, tobacco and both legal and illegal drugs on the man body and apply safety practices related to these and other high-risk behaviors.	
0929.87	Distinguish among the five schedules of controlled substances.	
0929.88	Explain basic concepts of positive self-image, wellness and stress.	
0929.89	Develop a wellness and stress control plan that can be used in personal and professional life.	
0929.90	Explore and utilize the U.S. Department of Agriculture’s MyPlate Food guide.	
0929.91	Examine the basic food groups.	
0929.92	Identify the six essential nutrients.	
0929.93	Describe strategies for the prevention of disease including health screenings and examinations.	
0929.94	Assess emotional, psychological, spiritual, cultural, and intellectual influences on individual/family food choices and nutrition and wellness across the lifespan.	
0929.95	Analyze economic and environmental influences on food choices and nutritional practices.	
0929.96	Analyze governmental influences to include legislation and regulation related to nutrition and wellness.	
0929.97	Analyze the effects of food and diet fads on wellness.	
0929.98	Apply science-based dietary guidelines in planning to meet nutrition and wellness needs of individuals and families.	
0929.99	Recognize health and nutrition requirements of individuals and families with special needs.	
0929.100	Demonstrate ability to select, store, prepare, and serve nutritious, safe and appealing foods.	
0929.101	Evaluate food and nutrition information, including food labels, in relation to the nutrition content of the food.	
0929.102	Assess conditions and practices that promote safe food handling and methods for preventing a food borne illness outbreak for commercial and home practice.	
0929.103	Analyze safety and sanitation practices in retail, institutions and home (including the use of equipment).	
0929.104	Analyze the causes and foods at risk for food borne illnesses.	
0929.105	Analyze influence of scientific and technical advances on the nutrient content, availability, and safety of foods.	
0929.106	Relate scientific and technical advances in food processing, storage, product development, and distribution for nutrition and wellness.	
0929.107	Determine the effects of food science and technology on meeting nutritional needs.	
0929.108	Evaluate the functions and the requirements of <i>vitamins, minerals, proteins, fats, carbohydrates and water</i> on nutrition and wellness across the lifespan, and their food sources.	

Life Choices and Relationships		Complete
Content Skill Sets		Knowledge/ Performance
0929.109	Personal roles and traits.	
0929.110	Heredity and environment.	
0929.111	Adjusting to change.	
0929.112	Identifying problems and crises.	
0929.113	Problem solving techniques.	

0929.114	Family dynamics.	
0929.115	Peer relationships.	
0929.116	Parenting roles and responsibilities.	
0929.117	Examine how an individual's roles and personal traits influence the development of their self-concept.	
0929.118	Examine the factors that develop a positive self-image.	
0929.119	Demonstrate appropriate etiquette in social situations.	
0929.120	Predict how the development characteristic changes in early adolescence influence an individual's self-image.	
0929.121	Analyze roles and responsibilities in relationships.	
0929.122	Determine strategies for coping with various adolescent problems.	
0929.123	Analyze the relationship between rights, roles, and responsibilities of family members.	
0929.124	Articulate the difference in the meaning of values, goals, and priorities.	
0929.125	Relate the importance of values in making personal decisions.	
0929.126	Utilize decision making strategies.	
0929.127	Examine effective conflict prevention and management techniques.	

Leadership Development and Community Involvement		Complete
Content Skill Sets		Knowledge/ Performance
0929.128	Leadership concepts.	
0929.129	Public speaking.	
0929.130	Parliamentary law.	
0929.131	Characteristics of effective teams and organizations.	
0929.132	Community needs.	
0929.134	Community roles and responsibilities.	
0929.135	Assess factors involved in successful leadership skills, citizenship traits and teamwork skills.	
0929.136	Apply leadership, citizenship and teamwork skills as an integral part of classroom activities.	
0929.137	Develop and deliver speeches.	
0929.138	Participate in meetings using parliamentary procedure.	
0929.139	Attend leadership conferences and training (local, state and/or national).	
0929.140	Investigate the opportunities available through a national student organization.	
0929.141	Volunteer in community service opportunities.	
0929.142	Participate in career development events.	
0929.143	Analyze recurring and evolving family, workplace and community concerns.	

Safety, Health and Environmental		Complete
Content Skill Sets		Knowledge/ Performance
0929.144	Safety practices, policies, procedures and strategies related to both personal and environmental safety.	

0929.145	Define personal and environmental safety.	
0929.146	Anticipate and avoid or mitigate potential safety risks.	
0929.147	Discuss safe and appropriate use of social media.	
0929.148	List health and safety tools of a chosen trade.	
0929.149	Plan safe and appropriate responses to a variety of dangers and emergencies.	
0929.150	Identify causes, prevention, and treatments for injuries.	
0929.151	List responsible actions to create a safe and healthy environment.	
0929.152	Demonstrate proficiency in first aid techniques.	

Course Description: This course is designed to examine food preparation and management using the decisionmaking process; meeting basic needs by applying nutrition and wellness concepts; meeting health and safety needs in planning, preparing and serving food; maximizing resources when planning, preparing and serving food; promoting hospitality in food practices; and analyzing individual and family nutritional needs in relation to change. Students will use reasoning processes, individually and collaboratively, to take responsible action in families, workplaces, and communities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Nutrition and Food Practices in a Multicultural Society		Complete
Content Skill Sets		Knowledge/ Performance
0950.01	Compare factors affecting national and international food supply and distribution.	
0950.02	Evaluate food habits and meal patterns in terms of cultural influences.	
0950.03	Exhibit an awareness of the variety of food choices available in our multicultural society.	

Nutritional Needs of Individuals and Families		Complete
Content Skill Sets		Knowledge/ Performance
0950.04	Demonstrate how to conserve nutrients during food preparation.	
0950.05	Research diet disorders (i.e. bulimia, anorexia).	
0950.06	Demonstrate the use of dietary guidelines in making wise food choices.	
0950.07	Analyze nutritional adequacy of selected diets using available technology.	
0950.08	Analyze the reliability of nutrition information.	
0950.09	Evaluate claims made for dietary supplements, diet aids, and diet fads.	
0950.10	Analyze special needs diets (i.e. diabetic, vegetarian, low cholesterol, etc.).	

Risk Management Procedures		Complete
Content Skill Sets		Knowledge/ Performance
0950.11	Analyze factors that contribute to food borne illness.	
0950.12	Analyze food service management safety and sanitation programs.	
0950.13	Implement industry standards for documenting, investigating, and reporting foodborne illnesses.	
0950.14	Use the hazard analysis critical control point (HACCP) during all food handling processes to minimize the risks of food borne illness.	
0950.15	Demonstrate practices and procedures that assure personal and workplace health and hygiene.	

0950.16	Demonstrate standard procedures for receiving and storage of raw and prepared foods.	
0950.17	Classify current types of cleaning materials and sanitizers and their proper use.	
0950.18	Use occupational safety and health administration's (OSHA) right to know law and material safety data sheets (MSDS) and explain their requirements in handling hazardous materials.	
0950.19	Demonstrate waste disposal and recycling methods.	

Nutritional Therapy		Complete
Content Skill Sets		Knowledge/ Performance
0950.20	Analyze nutritional needs of individuals.	
0950.21	Use nutritional information to support care planning.	
0950.22	Utilize a selective menu.	
0950.23	Construct a modified diet based on nutritional needs and health conditions.	
0950.24	Design instruction on nutrition for health maintenance and disease prevention.	

Course Description: This course will provide students with the skills and practices that are required for Foundational Food Preparation skills for healthy eating. Emphasis is placed on the relationship of diet to health, healthful food preparation and sound nutrition. Sustainability for a global society, kitchen and meal management, traditions and trends in food consumption and resource management are addressed. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety and Sanitation Procedures		Complete
Content Skill Sets		Knowledge / Performance
0954.01	Practice good personal hygiene/health procedures.	
0954.02	Demonstrate safe food handling and preparation techniques.	
0954.03	Demonstrate safe and environmentally responsible waste disposal and recycling methods.	

Selection and Use of Kitchen Equipment		Complete
Content Skill Sets		Knowledge / Performance
0954.04	Maintain tools and equipment following safety procedures.	
0954.05	Demonstrate procedures for safe and secure storage of equipment and tools.	
0954.06	Design plans for food, equipment, and supplies to meet food preparation requirements.	
0954.07	Utilize weights and measurement tools to demonstrate knowledge of portion control and measurement techniques.	
0954.08	Utilize kitchen equipment appropriately.	

Food Preparation		Complete
Content Skill Sets		Knowledge / Performance
0954.09	Demonstrate measurement procedures, equivalents, and conversion.	
0954.10	Interpret recipe terminology and directions.	
0954.11	Demonstrate ability to select, store and prepare nutritious and pleasing foods.	
0954.12	Determine the effects of workspace, tools, equipment, and technology on food preparation.	

Plan and Serve Food for Healthful Eating		Complete
Content Skill Sets		Knowledge / Performance
0954.13	Analyze characteristics of appealing menus.	
0954.14	Develop appropriate menus, grocery orders, and timelines for cooking and/or baking labs.	
0954.15	Examine functions of ingredients, nutritive value, and methods of preparation.	
0954.16	Develop a variety of nutritionally sound and healthy menus for individuals and groups.	
0954.17	Examine the applicability of convenience food items.	
0954.18	Demonstrate cooking methods that increase nutritional value, lower calorie and fat content, and utilize herbs and spices to enhance flavor.	
0954.19	Manage money allocated for food.	
0954.20	Examine methods of meal service.	

Food Traditions and Trends		Complete
Content Skill Sets		Knowledge / Performance
0954.21	Illustrate how technological developments affect food choices.	
0954.22	Summarize factors that influence food choices.	
0954.23	Practice a positive dining atmosphere.	
0954.24	Demonstrate table appointments.	
0954.25	Practice food presentation and table service appropriate for specific situations.	
0954.26	Exhibit appropriate etiquette.	

Nutrition and Health		Complete
Content Skill Sets		Knowledge / Performance
0954.27	Summarize the effect of nutrients on health, appearance, and peak performance.	
0954.28	Outline the relationship of nutrition and wellness to individual and family health throughout the life span.	
0954.29	Estimate the effects of food and diet fads, food addictions, and eating disorders on wellness.	

Leadership, Citizenship, and Teamwork Skills		Complete
Content Skill Sets		Knowledge / Performance
0954.30	Assess factors involved in successful leadership skills, citizenship traits, and teamwork traits.	
0954.31	Apply leadership, citizenship, and teamwork skills as an integral part of classroom activities.	

Curriculum and Assessment		Complete
Content Skill Sets		Knowledge/ Performance
1010.1	Identify strategies for setting up and maintaining a quality classroom environment establishing structure for each day	
1010.2	Identify strategies that prompt developmentally appropriate activities in the classroom	
1010.3	Develop strategies for implementing practical use of classroom data collected through child observations	
1010.4	Develop personal philosophies relating to educational theory	
1010.5	Explain multiple intelligences and construct DAP learning activities that address the needs of different multiple intelligence.	
1010.6	Construct purposeful play activities that support essential learning	
1010.7	Discuss the child assessment system utilized in the pre-k or kindergarten class	
1010.8	Exhibit professional ethical behavior	
1010.9	Share information through a variety of oral, written, and multimedia communications	

Course Description: This course focuses on the preparation and service of safe food; basic introduction to industry safety standards and restaurant equipment; and employability skills in the restaurant industry. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This program of study uses materials and resources that are proprietary. Skill sets in italics align with the National Restaurant Association Educational Foundation standards in the Foundations for Restaurant Management and Culinary Arts textbooks found at this link: <https://textbooks.restaurant.org/Educators>

Large and Small Equipment		Complete
Content Skill Sets		Knowledge / Performance
1013.01	Identify and demonstrate proper use of measuring devices <i>11.1 Identify the equipment needed for receiving and storing food and supplies.</i>	
1013.02	Identify large and small kitchen equipment <i>11.2 List the different types of food-preparation equipment and give examples of their uses.</i>	
1013.03	Demonstrate proper use and care of large and small equipment <i>11.3 Demonstrate correct and safe use of food-preparation equipment (e.g., slicers, mixers, etc.).</i>	

Sanitation and Safety		Complete
Content Skill Sets		Knowledge / Performance
1013.04	Display knowledge of cleaning and sanitizing methods <i>7.6 Explain how to maintain a clean and sanitary operation.</i> <i>7.7 Outline procedures for cleaning and sanitizing tools and equipment.</i> <i>7.8 Identify factors that affect the effectiveness of sanitizers.</i> <i>7.9 List the elements of a master cleaning schedule.</i> <i>7.10 Outline procedures for managing pests.</i>	
1013.05	Maintain basic principles of nationally recognized sanitation protocols (e.g., ServSafe, CPEM, ACF) <i>6.1 Define what a foodborne-illness outbreak is, and list the costs associated with one.</i> <i>6.2 Recognize risks associated with high-risk populations.</i> <i>6.3 Identify factors that affect the growth of pathogens (FAT TOM).</i> <i>6.4 Identify characteristics of TCS food and list examples.</i> <i>6.5 Identify ways food becomes unsafe.</i>	
1013.06	Exhibit understanding of prevention, causes, and response to workplace injuries <i>10.1 Describe various types of protective clothing, footwear, and equipment used in a foodservice setting.</i>	

	<p>10.5 Identify procedures for preventing burns.</p> <p>10.6 Identify procedures for preventing slips, trips, and falls in a foodservice operation.</p> <p>10.7 Outline the procedure for cleaning up spills on floors.</p> <p>10.8 Demonstrate how to use ladders safely.</p> <p>10.9 Demonstrate proper lifting and carrying procedures to avoid injury.</p> <p>10.10 Outline basic first aid concepts and procedures.</p> <p>10.11 Identify external threats to an operation, and list ways to protect against them.</p>	
1013.07	<p>Describe fire extinguishers and fire safety procedures</p> <p>10.2 Identify hazards that contribute to accidental fires.</p> <p>10.3 Classify various types of fires and fire extinguishers.</p> <p>10.4 Outline the actions to take in the event of a fire in a foodservice setting.</p>	
1013.08	<p>Demonstrate personal hygiene</p> <p>7.1 List personal behaviors that can contaminate food.</p> <p>7.2 List the steps to proper handwashing and identify when hands should be washed.</p> <p>7.3 Identify proper personal hygiene practices and appropriate work attire.</p> <p>7.4 Identify ways to handle ready-to-eat food safely.</p> <p>7.5 Identify when food handlers should be prevented from working around food or from working in the operation</p>	
1013.09	<p>Identify food allergen characteristics</p> <p>6.6 Identify the most common allergens and methods for preventing allergic reactions.</p> <p>6.7 Recognize the need for food defense systems.</p>	
1013.10	<p>Demonstrate proper food storage techniques (e.g., can goods, dry, refrigerated, frozen, fresh)</p> <p>8.1 Identify ways to prevent cross-contamination.</p> <p>8.2 Identify ways to prevent time-temperature abuse.</p> <p>8.3 List the steps for calibrating a bimetallic stemmed thermometer using the ice-point method.</p> <p>8.4 Identify characteristics of an approved food source.</p> <p>8.5 Identify criteria for accepting or rejecting food during receiving.</p> <p>8.6 Outline procedures for storing food.</p> <p>8.7 Outline procedures for preparing and cooking various TCS food.</p> <p>8.8 Outline procedures for holding, cooling, and reheating TCS food.</p> <p>8.9 Identify ways to handle food ready for service.</p> <p>8.10 Outline procedures for preparing and serving food for off-site service.</p> <p>8.11 Explain what a food safety management system is and why it's important.</p>	
1013.11	<p>Display knowledge of cleaning and sanitizing methods</p> <p>7.6 Explain how to maintain a clean and sanitary operation.</p> <p>7.7 Outline procedures for cleaning and sanitizing tools and equipment.</p> <p>7.8 Identify factors that affect the effectiveness of sanitizers.</p> <p>7.9 List the elements of a master cleaning schedule.</p> <p>7.10 Outline procedures for managing pests.</p>	
1013.12	<p>Exhibit knowledge of HACCP policies and procedures</p> <p>6.8 Identify government agencies that regulate the restaurant and foodservice industry.</p> <p>9.1 State who is legally responsible for providing a safe environment and ensuring safe practices.</p> <p>9.2 Define the role of Occupational Safety and Health Administration regulations.</p> <p>9.3 State the Hazard Communication Standard requirements for employers.</p>	

	<p>9.4 List the requirements for storing hazardous chemicals in an operation.</p> <p>9.5 Explain the importance of general safety audits and safety training.</p> <p>9.6 List the steps in an accident investigation.</p> <p>9.7 Explain the purpose of an emergency plan.</p> <p>9.8 Define the terms harassment-free environment and mutually respectful workplace.</p> <p>9.9 List guidelines for handling harassment claims.</p>	
--	--	--

Food Preparation		Complete
Content Skill Sets		Knowledge / Performance
1013.13	<p>Explain procedure for buffet preparation and maintenance</p> <p>11.4 Identify the kitchen equipment needed for holding and serving food and beverages.</p> <p>16.3 List the components of a sandwich station.</p>	

Employability Skills		Complete
Content Skill Sets		Knowledge / Performance
1013.14	<p>Exhibit understanding of professional behavior, appearance, and job interview skills</p> <p>3.1 Define professionalism and explain what it means to hospitality professionals.</p> <p>3.2 Understand the importance of personal appearance and grooming standards to your employment.</p> <p>3.3 Recognize the connections between your professional life and your personal life.</p> <p>3.4 List the basic expectations that employers have for an employee in a foodservice setting.</p> <p>3.5 Explain the concept of teamwork.</p> <p>3.6 Describe ethics and explain their importance to the restaurant and foodservice industry.</p> <p>3.7 Identify the benefits of diversity to a workplace.</p> <p>3.8 Explain how stereotypes and prejudices can negatively affect working together.</p> <p>3.9 Identify how employees' roles and jobs impact an organization's mission and goals.</p> <p>3.10 Outline the steps to resigning from a job.</p> <p>4.1 Describe the communication process.</p> <p>4.2 Identify obstacles to effective communication and explain how to prevent them.</p> <p>4.3 Demonstrate effective listening skills.</p> <p>4.4 Demonstrate effective speaking skills.</p> <p>4.5 Demonstrate effective writing skills.</p> <p>4.6 Describe interpersonal communication in the workplace.</p> <p>5.1 Outline a plan for an effective job search.</p> <p>5.2 Read and complete a job application form.</p> <p>5.3 List the steps to an effective job interview.</p> <p>5.4 Identify the differences between closed- and open-ended questions in interviews.</p> <p>5.5 Explain the follow-up steps for a job interview.</p> <p>5.6 Define and give examples of an employee assessment test.</p> <p>5.7 Outline the steps to choosing a college or trade school and identify resources for answering those questions.</p> <p>5.8 List ways to find and apply for scholarships.</p>	

1013.15	<p>Display knowledge of various job profiles and chain of command</p> <ul style="list-style-type: none"><i>1.1 Identify the two segments of the restaurant and foodservice industry and give examples of businesses in each of them.</i><i>1.2 Categorize the types of businesses that make up the hospitality, lodging, and tourism industries, and identify their foodservice opportunities.</i><i>1.3 Outline the growth of the hospitality industry throughout the history of the United States.</i><i>2.1 Identify the two major categories of jobs in the restaurant and foodservice industry.</i><i>2.2 Identify skills needed by foodservice professionals.</i><i>2.3 Identify career opportunities in the restaurant and foodservice industry.</i><i>2.4 List factors for maintaining health and wellness throughout a restaurant or foodservice career.</i><i>13.1 List the major positions in a modern, professional kitchen.</i>	
---------	---	--

Course Description: This course is designed to focus on restaurant essential processes, guest service and food production. Students will learn about kitchen essentials in knife skills, stocks and sauces, meats and poultry, culinary math and restaurant management. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This program of study uses materials and resources that are proprietary. Skill sets in italics align with the National Restaurant Association Educational Foundation standards in the Foundations for Restaurant Management and Culinary Arts textbooks found at this link: <https://textbooks.restaurant.org/Educators>

Recipes		Complete
Content Skill Sets		Knowledge / Performance
1014.01	Demonstrate an understanding of culinary terminology and techniques (e.g., braising, pan grilling, batters, breading) <i>13.4 Describe and demonstrate basic preparation techniques.</i>	
1014.02	Demonstrate how to read and follow standard recipes <i>14.2 Identify the components and functions of a standardized recipe.</i> <i>13.5 Interpret information on a nutrition label.</i>	
1014.03	Establish recipe mise en place <i>13.2 Explain the importance of mise en place.</i> <i>13.3 Explain the difference between seasoning and flavoring.</i>	

Knife Skills		Complete
Content Skill Sets		Knowledge / Performance
1014.04	Identify and distinguish knife types and basic cuts <i>12.1 Identify hand tools and small equipment.</i> <i>12.2 List the different types of knives used in the foodservice kitchen and give examples of their uses.</i> <i>12.4 Demonstrate the classical knife cuts.</i>	
1014.05	Demonstrate knife sharpening skills and safe knife usage and care <i>12.3 Demonstrate the correct holding and cutting motions for a chef's knife.</i>	

Food Preparation		Complete
Content Skill Sets		Knowledge / Performance

1014.06	<p>Prepare salads and dressings</p> <p>15.1 Explain the roles of salads on the.</p> <p>15.2 Identify and describe the various ingredients used to make salads.</p> <p>15.3 List the four parts of a salad and explain the role of each.</p> <p>15.4 Identify and prepare various types of salad.</p> <p>15.5 Identify procedures for cleaning and storing salad greens.</p> <p>15.6 Differentiate among various oils and vinegars.</p> <p>15.7 Prepare vinaigrettes and other emulsions.</p> <p>15.8 Describe and prepare various common dips.</p>	
1014.07	<p>Prepare soups, appetizers, and desserts</p> <p>17.12 Prepare the basic ingredients for broth, consommé, purée, clear, and cream soups.</p>	
1014.08	<p>Prepare sandwiches, spreads, and fillings</p> <p>16.1 Give examples of different types of sandwiches, including simple hot, open-faced, tea (or finger), grilled, deep-fried, and simple cold.</p> <p>16.2 Explain the roles of the three components of a sandwich: bread, spread, and filling.</p> <p>16.4 Prepare several types of sandwiches.</p> <p>16.5 Give examples of different styles of pizza.</p> <p>16.6 Prepare various types of pizza.</p>	
1014.09	<p>Explain procedure for buffet preparation and maintenance</p> <p>11.4 Identify the kitchen equipment needed for holding and serving food and beverages.</p> <p>16.3 List the components of a sandwich station.</p>	

Bakery Products		Complete
Content Skill Sets		Knowledge / Performance
1014.10	<p>Prepare batters and doughs using appropriate mixing methods</p> <p>19.3 Prepare various types of cookies.</p> <p>19.4 Prepare various types of quick bread.</p>	

Stocks, Sauces, and Hot Soups		Complete
Content Skill Sets		Knowledge / Performance
1014.11	<p>Prepare and flavor stocks (bones and base) and reductions</p> <p>17.1 Identify the four essential parts of stock and the proper ingredients for each.</p> <p>17.2 List and explain the various types of stock and their ingredients.</p> <p>17.3 Demonstrate three methods for preparing bones for stock.</p> <p>17.4 Prepare the ingredients for and cook several kinds of stocks.</p> <p>17.5 Explain how and why to remove fat from stock.</p> <p>17.6 List the ways to cool stock properly.</p>	
1014.12	<p>Prepare mother (foundation) sauces</p> <p>17.7 Prepare the mother sauces, and describe other sauces made from them.</p>	

1014.13	Prepare roux and thickening agents <i>17.8 List the proper ingredients for sauces and explain how to create them</i> <i>17.9 Prepare various small sauces.</i> <i>17.10 Identify ways to use sauces.</i>	
1014.14	Identify and prepare soups <i>17.11 Identify the two basic kinds of soups and give examples of each.</i> <i>17.12 Prepare the basic ingredients for broth, consommé, purée, clear, and cream soups.</i>	

Meats and Poultry		Complete
Content Skill Sets		Knowledge / Performance
1014.15	Identify various cooking methods <i>18.1 List and explain the three types of heat transfer.</i> <i>18.2 Describe dry-heat cooking methods and list the foods to which they are suited.</i> <i>18.3 Describe moist-heat cooking methods and list the foods to which they are suited.</i> <i>18.4 Describe combination-heat cooking methods and list the foods to which they are suited.</i> <i>18.5 Describe sous vide and microwave cooking techniques.</i>	
1014.16	Determine proper degrees of doneness <i>18.6 Identify ways to determine if a food has reached the correct degree of doneness.</i>	

Culinary Math		Complete
Content Skill Sets		Knowledge / Performance
1014.17	Convert standard recipes <i>14.3 Convert recipes to yield smaller and larger quantities based on operational needs.</i> <i>19.1 Calculate ingredient weights using baker's percentages.</i> <i>19.2 Convert baking recipes to a new yield.</i>	
1014.18	Calculate food costs, percentages, and mark-up <i>14.1 Perform basic math calculations using numbers or fractions.</i> <i>14.6 Given a problem, calculate as purchased (AP) and edible portion (EP) amounts.</i> <i>14.7 Calculate the total cost and portion costs of a standardized recipe.</i>	
1014.19	Calculate guest check with tax and gratuity <i>21.14 List methods for processing payment.</i>	
1014.20	Convert weights and measurements <i>14.4 Explain the difference between customary and metric measurement units and convert units between the two systems.</i> <i>14.5 Demonstrate measuring and portioning using the appropriate small wares and utensils.</i>	

Dining Service		Complete
Content Skill Sets		Knowledge / Performance
1014.21	<p>Perform basic duties of a wait person (e.g., take orders, selling techniques, serve properly, bus, side-work duties)</p> <p>20.1 Explain the importance of customer service to the restaurant and foodservice industry.</p> <p>20.2 List the reasons for making a good first impression and give examples of how to make one.</p> <p>20.3 Describe special needs that some customers might have.</p> <p>20.4 List ways to obtain feedback from guests and determine their satisfaction.</p> <p>20.5 Explain how customer complaints should be resolved.</p> <p>21.2 Identify various server tools and the correct way to stock a service station.</p> <p>21.3 Outline the process for receiving and recording reservations and special requests.</p> <p>21.4 Demonstrate taking orders at the table, beginning with the greeting.</p> <p>21.5 Define suggestive selling and give examples of how to do it.</p> <p>21.6 Identify basic guidelines for serving alcohol to guests.</p> <p>21.9 Demonstrate setting and clearing items properly.</p> <p>21.10 Prepare various types of hot beverages.</p> <p>21.11 Demonstrate service procedures for hot beverages.</p> <p>21.12 Prepare various types of cold beverages.</p> <p>21.13 Demonstrate service procedures for cold beverages.</p>	
1014.22	<p>Describe various types of service (e.g., lunch, a la carte, banquet, family-style)</p> <p>21.7 Describe the four traditional styles of service: American, French, English, and Russian.</p> <p>21.8 Identify contemporary styles of service.</p>	
1014.23	<p>Identify roles of service staff (e.g., hostess, cashier, server, busser)</p> <p>21.1 Describe service staff roles and list the duties and responsibilities of each.</p>	

NRAEF Standards

Introduction to Management		Complete
Content Skill Sets		Knowledge / Performance
1014.24	22.1 List the major responsibilities of a manager.	
1014.25	22.2 Identify the behaviors of a leader.	
1014.26	22.3 Identify common expectations that employees have about managers.	
1014.27	22.4 List ways to promote diversity in the workplace.	
1014.28	22.5 List the steps for solving a problem and explain how each step contributes to finding a solution.	
1014.29	22.6 Explain what a SMART goal is.	
1014.30	22.7 Explain the purpose of vision statements and mission statements and contrast their differences.	

Course Description: Management roles and financial responsibilities, staff supervision and training, marketing and advertising, menu planning, food safety, sanitation, labor rules and regulations, and HACCP planning are incorporated in the coursework. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Foodservice Management Roles and Financial Responsibilities		Complete
Content Skill Sets		Knowledge / Performance
1016.01	Outline the qualities of an effective manager.	
1016.02	Articulate the concept of leadership.	
1016.03	Create an effective manager's time management profile.	
1016.04	Relate the role of communication in a foodservice operation.	
1016.05	Illustrate the management structure in a food production and service operation.	
1016.06	Demonstrate the use of different types of foodservice computerized point-of-sale software programs.	
1016.07	Compute food, beverage and labor cost percentages.	
1016.08	Create a profit and loss statement.	
1016.09	Relate the role of forecasting and breakeven analysis used in foodservice operations.	
1016.10	Outline the process used in determining purchasing decisions.	
1016.11	Create a list of criteria used for inspecting food at delivery.	
1016.12	Demonstrate effective inventory control procedures using an inventory control tracking system.	
1016.13	Articulate the importance of portion control and how to minimize waste in an operation.	

Food and Beverage Menu Planning and Development		Complete
Content Skill Sets		Knowledge / Performance
1016.14	Articulate basic menu planning principles.	
1016.15	Summarize the factors that influence a menu.	
1016.16	Research different menu types with their advantages and disadvantages.	
1016.17	Outline the Truth-In-More Guidelines.	
1016.18	Develop a list of effective menu item descriptions.	
1016.19	Research the element that influences menu style and design.	
1016.20	Contrast basic menu formats.	
1016.21	Create a chart of the basic menu categories and how they are organized.	

1016.22	Relate the influences that affect menu pricing.	
1016.23	Use the factor method and markup-on-cost method of pricing to determine menu costs.	
1016.24	Contrast the competitors' pricing method with the psychological pricing method.	
1016.25	Create a menu for a foodservice operation incorporating; menu influences, menu type, menu style and design, menu format, types of meals to be served, menu categories, and menu pricing considerations.	

Safety Procedures in the Workplace		Complete
Content Skill Sets		Knowledge / Performance
1016.26	Report on the eight ways to prevent fires.	
1016.27	Create a chart identifying class of fire, type of flammable materials and the type of extinguisher.	
1016.28	Demonstrate using a fire extinguisher.	
1016.29	Demonstrate fire emergency procedures to be used in the event of fire.	
1016.30	Compile a list of emergency phone numbers.	
1016.31	Outline first aid measures for burns and wounds.	
1016.32	Determine eight ways to prevent falls.	
1016.33	Demonstrate the Heimlich Maneuver and CPR.	
1016.34	Perform a safety audit in a commercial kitchen.	

Employee Personal Hygiene Responsibilities		Complete
Content Skill Sets		Knowledge / Performance
1016.35	Demonstrate appropriate grooming practices for the workplace.	
1016.36	Demonstrate standard operating procedures related to personal hygiene.	

HACCP		Complete
Content Skill Sets		Knowledge / Performance
1016.37	Articulate the concept of HACCP.	
1016.38	Outline the seven steps necessary in setting up a HACCP system.	
1016.39	Determine food safety hazards.	
1016.40	Relate the purpose of a critical control point.	
1016.41	Create an HACCP analysis chart, illustrating the flow of food with potential hazards, control points and corrective actions.	
1016.42	Chart the safe internal cooking temperatures and times for poultry, meats, fish and eggs.	
1016.43	Research the role of thermometers in keeping food safe and how they are calibrated.	

Maintenance and Sanitation**Complete****Content Skill Sets****Knowledge /
Performance**

1016.44	Inspect all food products for damage and spoilage when they are received.	
1016.45	Outline the potential problem areas when receiving food.	
1016.46	Chart the twelve general preparation and cooking guidelines.	
1016.47	Demonstrate the correct procedures for holding foods, serving foods, cooling foods and reheating foods.	
1016.48	Show the proper procedure for setting up a three-bowl sink for manual dishwashing.	
1016.49	Chart types of sanitizers and their advantages and disadvantages.	
1016.50	Demonstrate the proper way to use, clean and maintain a commercial dishwasher.	
1016.51	Create a safety poster illustrating where potential problems can occur in receiving, storing, preparing, cooking, holding and serving food.	

Course Description: Nutrition basics and the guidelines used for foodservice meal planning are covered in Culinary Nutrition and the Menu. Dietary guidelines and special dietary needs will be used in modifying menu choices. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Nutrition Basics		Complete
Content Skill Sets		Knowledge / Performance
1017.01	Create a table of the six categories of nutrients and the characteristics of each.	
1017.02	Create vitamin and mineral charts identifying functions in the body.	
1017.03	Report on the functions of trace minerals.	
1017.04	Create a chart of additives and the foods in which they are used.	
1017.05	Report on the purpose of the Dietary Guidelines for Americans, nutrition labels, and the Food Guide Pyramid.	

Nutritional Value of Flavorings, and Seasonings		Complete
Content Skill Sets		Knowledge / Performance
1017.06	Discuss how nutrients in food are affected by time and water.	
1017.07	Create a poster on ways to reduce the amount of fat, cholesterol, and sodium in recipes.	
1017.08	Compare the three methods a foodservice operation uses to prepare healthful meals.	
1017.09	Make a chart of flavorings and seasonings with their characteristics as they pertain to healthy cooking.	
1017.10	Compare characteristics of different cooking oils and their uses.	
1017.11	Evaluate a restaurant menu for nutritional value, variety, and appeal.	

Balanced Meal Planning		Complete
Content Skill Sets		Knowledge / Performance
1017.12	Compare traditional menu selections with nutritional menu selections.	
1017.13	Perform a nutritional analysis on items from traditional and nutritional menu selections.	
1017.14	Demonstrate how color affects plate appeal of nutritional food products.	
1017.15	Plan a nutritionally balanced meal.	
1017.16	Prepare a nutritionally balanced meal.	
1017.17	Create a nutritionally balanced menu.	

Menu Planning for Special Diets

Menu Planning for Special Diets		Complete
Content Skill Sets		Knowledge / Performance
1017.18	Discuss why low-fat diet choices should be offered on a menu.	
1017.19	Plan a menu with low-fat diet choices.	
1017.20	Discuss why diabetic diet choices should be included in the menu planning process.	
1017.21	Plan a menu for a person with diabetes.	
1017.22	Discuss the role of nutritional menu item descriptions.	
1017.23	Report on the most common foods and additives known to cause allergic reactions.	
1017.24	Report on considerations used when planning and preparing a vegetarian menu.	
1017.25	Plan items on a menu for a vegetarian.	

Course Description: Baking and Pastry is an elective course which focuses on weights, measures, and general baking, classifications, handling and storage of ingredients, safety and handling, yeast raised dough products, cakes, cookies, batters, breads, biscuits, muffins, pies, and special dessert preparation. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Basics of Frozen and Scratch Goods		Complete
Content Skill Sets		Knowledge / Performance
1018.01	Calculate bakeshop formulas.	
1018.02	Select correct ingredients when given formula.	
1018.03	Demonstrate preparation of baked good when given formula.	
1018.04	Finish baked product.	
1018.05	Convert recipes using a baker's percentage formula.	
1018.06	Demonstrate the function/ use of bakeshop equipment and tools.	
1018.07	Demonstrate the use and cleaning of pastry bags and decorator tips.	
1018.09	Chart the function and use of various flours, liquids, fats, sugars and sweeteners, eggs and egg products, leavening.	
1018.10	Agents, spices, flavorings, nuts, and additives in baking.	

Batters and Dough Preparation		Complete
Content Skill Sets		Knowledge / Performance
1018.11	Examine the ingredients' ratio used in batters and doughs.	
1018.12	Prepare bread doughs and batters using the nine different ways to mix them.	
1018.13	Discuss the impact of carryover baking.	

Dough Preparation and Baking		Complete
Content Skill Sets		Knowledge / Performance
1018.14	Examine the purpose of the ingredients in a starter mixture.	
1018.15	Demonstrate the rolled-in fat yeast dough process.	
1018.16	Chart the twelve stages that apply to all yeast dough products.	

1018.17	Contrast the three basic methods of mixing yeast dough ingredients: the straight dough method, the modified straight dough method, and the sponge method.	
1018.18	Relate the process of fermentation in yeast dough.	
1018.19	Research common causes of failure in yeast bread production.	
1018.20	Demonstrate dividing, rounding, punching, proofing, shaping, and panning dough.	
1018.21	Report how washing, slashing, and docking affect the baking quality and eye appeal of finished products.	
1018.22	Create a chart of the four stages of the baking process that contribute to the final product.	
1018.23	Relate why glazing, staling prevention, and proper packaging and storage of yeast products are important to dough preparation and baking.	
1018.24	Evaluate a finished yeast product according industry standards.	

Quick Bread Preparation and Baking		Complete
Content Skill Sets		Knowledge / Performance
1018.25	Chart the characteristics of quick breads.	
1018.26	Compare quick bread, doughs, and batters.	
1018.27	Examine the nutrients contained in quick breads.	
1018.28	Articulate the difference in the actions of baking soda versus baking powder in the baking process.	
1018.29	Prepare a loaf bread.	
1018.30	Prepare muffins.	
1018.31	Articulate how quick breads are leavened.	

Biscuit Preparation and Baking		Complete
Content Skill Sets		Knowledge / Performance
1018.31	Demonstrate the biscuit method of baking.	
1018.32	Chart the quality standards and characteristics of biscuits, scones, and shortcakes.	
1018.33	Demonstrate how biscuits are prepared, cut, and formed.	

Cakes and Cookie Preparation and Baking		Complete
Content Skill Sets		Knowledge / Performance
1018.34	Relate the factors that influence the spread of cookies.	
1018.35	Demonstrate the one-stage and creaming methods used in mixing cookies.	
1018.36	Demonstrate how to mix, pan, bake, cool, serve, and store two types of cookies properly.	
1018.37	Chart the five types of cakes and their ingredients.	

1018.38	Demonstrate how to scale and pan cakes.	
1018.39	Differentiate between the five types of butter creams.	
1018.40	Demonstrate how to mix, pan, bake, cool, ice, serve, and store two types of cakes properly.	

Pie Preparation and Baking		Complete
Content Skill Sets		Knowledge / Performance
1018.41	Complete the process of mixing, shaping, rolling, and panning a basic pie dough.	
1018.42	Contrast the three major types of pie fillings.	
1018.43	Prepare a single and double crust pie.	
1018.44	Demonstrate proper pie storage and serving techniques.	

Specialty Desserts		Complete
Content Skill Sets		Knowledge / Performance
1018.45	Contrast specialty dessert options.	
1018.46	Contrast custards and puddings.	
1018.47	Articulate common ingredients and preparation methods used in Bavarian cream, mousse, and chiffons.	
1018.48	Articulate food safety concerns in cream dessert preparation and storage.	
1018.49	Complete the process of preparing, serving, and storing two types of specialty desserts properly.	

Safety Standards		Complete
Content Skill Sets		Knowledge / Performance
1018.50	Utilize appropriate lifting procedures.	
1018.51	Follow safety procedures when operating equipment.	
1018.52	Demonstrate sanitation practices in bakery.	
1018.53	Use bakery equipment and tools in a bakery according to manufacturer's specifications.	

Career Preparation in the Baking and Pastry Industry		Complete
Content Skill Sets		Knowledge / Performance
1018.54	Chart job opportunities and relevant employment factors when choosing to work in the baking and pastry industry.	
1018.55	Recognize the reasons for self-marketing and personal promotion.	
1018.56	Complete the stages of seeking employment.	

1018.57	Complete a self-assessment of strengths, weaknesses, skills, and knowledge.	
---------	---	--

Course Description: This course is designed to examine advanced food production, marketing and cost control. Students will identify and prepare foods including fruits and vegetables, breakfast items, and dairy products. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This program of study uses materials and resources that are proprietary. Skill sets in italics align with the National Restaurant Association Educational Foundation standards in the Foundations for Restaurant Management and Culinary Arts textbooks found at this link: <https://textbooks.restaurant.org/Educators>

Sanitation and Safety		Complete
Content Skill Sets		Knowledge / Performance
1019.1	Take physical and perpetual inventory <i>11.7 List the methods used to account for inventory.</i>	

Fruits, Vegetables, and Starches		Complete
Content Skill Sets		Knowledge / Performance
1019.2	Identify quality and grade of fruits and vegetables <i>5.1 Identify and describe different types of fruit.</i> <i>5.2 List factors that affect produce selection decisions.</i> <i>5.3 identify procedures for storing fruit.</i> <i>6.1 Identify and describe different types of vegetables.</i> <i>6.2 Identify procedures for storing vegetables.</i>	
1019.3	Prepare fruit and vegetables for cooking <i>5.4 Prepare various types of fruit</i> <i>5.5 Cook various types of fruit using appropriate methods.</i> <i>6.3 Demonstrate the preparation of various types of vegetables.</i> <i>6.4 Cook various types of vegetables using appropriate methods.</i> <i>6.5 Identify ways to hot-hold vegetables for safety and quality.</i>	
1019.4	Identify and prepare potato dishes <i>7.1 Identify and describe different types of potatoes.</i> <i>7.2 Identify procedures for storing potatoes.</i> <i>7.3 Prepare potatoes using a variety of methods.</i>	
1019.5	Identify and prepare pasta, grains, and legumes <i>7.4 Identify and describe different types of grains and legumes.</i> <i>7.5 Explain how to store grains and legumes.</i>	

	<p>7.6 Prepare various types of grains and legumes.</p> <p>7.7 Identify and describe different types of pasta.</p> <p>7.8 Prepare pasta using a variety of methods.</p> <p>7.9 Prepare dumplings using a variety of methods.</p>	
--	--	--

Breakfast Foods		Complete
Content Skill Sets		Knowledge / Performance
1019.6	<p>Identify and prepare breakfast starches</p> <p>4.1 Describe the types of breakfast service.</p> <p>4.4 Prepare various breakfast starches.</p> <p>4.2 Prepare various pancakes, crêpes, waffles, and French toast.</p>	
1019.7	<p>Identify and prepare breakfast meats</p> <p>4.3 Prepare various breakfast meats.</p>	
1019.8	<p>Identify and prepare different styles of eggs</p> <p>3.6 List the characteristics of eggs and identify ways to keep them safe.</p> <p>3.7 Prepare eggs using a variety of cooking methods.</p>	
1019.9	<p>Identify and prepare cereals</p> <p>4.4 Prepare various breakfast starches.</p>	

Dairy Products and Alternatives		Complete
Content Skill Sets		Knowledge / Performance
1019.10	<p>Identify and use various dairy products (e.g., sour cream, butter, yogurt, creams, milk)</p> <p>3.2 Identify the different forms of cream and their fat content.</p> <p>3.3 Identify different forms of cultured dairy products and their fat content.</p> <p>3.4 Differentiate between butter and butter substitutes and recognize the characteristics of each.</p>	
1019.11	<p>Identify and use dairy alternatives (e.g., soymilk, almond milk, low-fat alternatives)</p> <p>3.1 Describe dairy milk and milk alternatives and their fat content.</p>	
1019.12	<p>Identify and use cheese varieties</p> <p>3.5 Identify the varieties and characteristics of cheese and give examples of each.</p>	

NRAEF Standards

Introduction to Marketing		Complete
Content Skill Sets		Knowledge / Performance
1019.13	1.1 Define the term marketing.	
1019.14	1.2 Describe the components of the traditional marketing mix.	
1019.15	1.3 Describe the contemporary marketing mix.	

1019.16	1.4 Describe the elements of a marketing plan.	
1019.17	1.5 Define target market and explain why it is important to a business.	
1019.18	1.6 Identify the parts of a SWOT analysis.	
1019.20	1.7 Identify various elements of a promotion mix.	
1019.21	1.8 Recognize different types of sales promotions.	
1019.22	1.9 List the benefits of public relations.	
1019.23	1.10 Identify opportunities for public relations.	

Menu Management		Complete
Content Skill Sets		Knowledge / Performance
1019.24	2.1 Explain the importance of the menu to a foodservice operation.	
1019.25	2.2 Describe à la carte, table d'hôte, California, limited, du jour, and cycle menus.	
1019.26	2.3 Organize the information on a menu.	
1019.27	2.4 Explain principles of menu layout and design.	
1019.28	2.5 Explain the purposes of a menu sales mix analysis.	
1019.29	2.6 Define profitability and target margin.	
1019.30	2.7 Classify menu items according to their popularity.	
1019.31	2.8 Compare the food cost percentage methods and the contribution margin method for menu pricing.	

Labor Costing		Complete
Content Skill Sets		Knowledge / Performance
1019.32	10.1 Explain the importance of standard labor costs to a business's success.	
1019.33	10.2 List factors that affect labor costs.	
1019.34	10.3 Describe the relationship between sales volume and labor costs.	
1019.35	10.4 Explain the difference between a master schedule and a crew schedule.	

Purchasing		Complete
Content Skill Sets		Knowledge / Performance
1019.36	11.1 Describe the purchasing function.	
1019.37	11.2 Describe the factors that contribute to the purchasing process.	
1019.38	11.3 List goods and services that might be purchased by a foodservice operation.	
1019.39	11.4 Explain quality standards and how they should be used.	
1019.40	11.5 Describe how to determine what and when to order.	

1019.41	11.6 Explain what happens after good are purchased.	
---------	---	--

Course Description: This course is designed to provide content related global cuisine, desserts and baked goods, meats and poultry, fish and seafood, culinary nutrition, and sustainability. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: This program of study uses materials and resources that are proprietary. Skill sets in italics align with the National Restaurant Association Educational Foundation standards in the Foundations for Restaurant Management and Culinary Arts textbooks found at this link: <https://textbooks.restaurant.org/Educators>

Food Preparation		Complete
Content Skill Sets		Knowledge / Performance
1020.01	Prepare soups, appetizers, and desserts <i>17.12 Prepare the basic ingredients for broth, consommé, purée, clear, and cream soups.</i> <i>21.5 Prepare various types of frozen desserts.</i> <i>21.6 Prepare various poached fruits and tortes.</i> <i>21.7 Describe various types of dessert sauces.</i>	
1020.02	Prepare cold garnishes <i>22.1 Explain why and how garnish is used.</i> <i>22.2 Describe the guidelines for plating food that has finished cooking.</i> <i>22.3 Explain how desserts should be plated and presented.</i> <i>22.4 Explain how soups should be garnished.</i>	

Bakery Products		Complete
Content Skill Sets		Knowledge / Performance
1020.03	Prepare batters and doughs using appropriate mixing methods <i>19.1 Describe the two basic types of yeast bread dough.</i> <i>19.2 Describe the two basic methods used to make yeast breads.</i> <i>19.3 List the 10 basic steps to making yeast bread.</i>	
1020.04	Prepare standard dessert items <i>20.1 Prepare cake batter using a variety of methods.</i> <i>20.2 Identify the functions of icings and determine which are best suited for different baked goods.</i> <i>20.3 Prepare various icings.</i> <i>20.4 Prepare various soufflés.</i> <i>20.5 Prepare pie dough using the 3-2-1 method.</i>	

	<p>20.6 Explain what it means to bake blind.</p> <p>20.7 Prepare laminated dough.</p> <p>20.8 Prepare pate a choux and phyllo dough.</p> <p>21.1 Explain how chocolate is made, including chocolate liquor, cocoa butter, and cocoa powder.</p> <p>21.2 Identify storing procedures for chocolate.</p> <p>21.3 Execute the procedure for melting chocolate.</p> <p>21.4 Prepare baked and stirred custards and explain how the products are used in desserts.</p>	
--	---	--

Meats and Poultry		Complete
Content Skill Sets		Knowledge / Performance
1020.05	<p>Identify meat and poultry (e.g., grade, inspection)</p> <p>16.1 Outline the federal grading systems for meat.</p> <p>16.2 Identify receiving and storage procedures for meat.</p> <p>17.1 Outline the federal grading systems for poultry.</p> <p>17.2 Describe various kinds of poultry.</p> <p>17.3 Identify receiving and storage procedures for poultry.</p>	
1020.06	<p>Prepare meat and poultry</p> <p>16.3 Apply basic techniques for cooking meat.</p> <p>16.4 Match various cooking methods with different forms of meat.</p> <p>17.4 Demonstrate the steps for fabricating poultry.</p> <p>17.5 Apply basic techniques for cooking poultry.</p> <p>17.6 Match various cooking methods with different forms of poultry.</p>	

Fish and Seafood		Complete
Content Skill Sets		Knowledge / Performance
1020.07	<p>Identify market forms of fish and seafood</p> <p>18.1 Outline the federal grading systems for seafood.</p> <p>18.2 Describe the various kinds of seafood.</p>	
1020.08	<p>Prepare fish and seafood</p> <p>18.3 Identify procedures for receiving and storing seafood.</p> <p>18.4 Demonstrate the steps for fabricating seafood.</p>	
1020.09	<p>Identify various cooking preparations and methods</p> <p>18.5 Apply basic techniques for cooking seafood.</p> <p>18.6 Match various cooking methods with different forms of seafood.</p>	

Culinary Nutrition		Complete
Content Skill Sets		Knowledge / Performance
1020.10	Describe the basic food groups; make healthy food choices <i>14.2 List the six basic types of nutrients found in food.</i> <i>14.10 Explain the role of digestion in nutrition and health.</i> <i>15.1 Describe a healthy diet and the reasons to follow one.</i> <i>15.2 Use the Dietary Guidelines for Americans and Choose My Plate to plan meals.</i> <i>15.3 Describe the three major vegetarian diets.</i>	
1020.11	Describe healthy cooking techniques <i>15.4 List and describe techniques for food preparation that preserve nutrients.</i>	
1020.12	Describe primary functions and food sources of major nutrients <i>14.3 Explain how phytochemicals and fiber function in the body.</i> <i>14.4 Describe the role carbohydrates have in people's diets.</i> <i>14.5 Describe the role of fats in people's diets.</i> <i>14.6 Describe the role of proteins in people's diets.</i> <i>14.7 Describe the role of vitamins and minerals in people's diets.</i> <i>14.8 Describe the role of water in people's diets.</i> <i>14.9 Explain what food additives are and how they function in food.</i>	
1020.13	Describe food and dietary trends (e.g., farm to table, organics, religious, dietary concerns) <i>14.1 Describe why nutrition is important to the restaurant and foodservice industry.</i> <i>15.5 Suggest ways to make menus and recipes more healthful.</i> <i>15.6 List and define recent developments in food production that may affect nutrition.</i>	

NRAEF Standards

Building Successful Teams		Complete
Content Skill Sets		Knowledge / Performance
1020.14	<i>12.1 Explain what is included in a job description and why this document is important to a business.</i>	
1020.15	<i>12.2 Explain a manager's responsibility for maintaining labor law knowledge.</i>	
1020.16	<i>12.3 Identify methods for ensuring a fair and consistent hiring process.</i>	
1020.17	<i>12.4 Identify discriminatory language and practices in the hiring process.</i>	
1020.18	<i>12.5 Describe the typical phases of onboarding and explain its importance to a business.</i>	
1020.19	<i>12.6 Explain what employees can expect during orientation.</i>	
1020.20	<i>12.7 Identify the benefits of training.</i>	
1020.21	<i>12.8 Identify the key points of effective employee training.</i>	
1020.22	<i>12.9 Summarize and discuss effective cross-training, group training, and on-the-job training.</i>	
1020.23	<i>12.10 Describe the importance of performance appraisals and ongoing feedback.</i>	

Sustainability

Sustainability		Complete
Content Skill Sets		Knowledge / Performance
1020.24	<i>13.1 Identify the issues surrounding the global production of seafood, coffee, animals, and how sustainability and conservation are connected. Explain why each is important.</i>	
1020.25	<i>13.2 Describe the steps a restaurant or foodservice operation should take to purchase and then promote the use of sustainable food products.</i>	
1020.26	<i>13.3 Describe local sourcing.</i>	
1020.27	<i>13.4 List the different types of growing practices.</i>	
1020.28	<i>13.5 List the issues surrounding the global production of seafood, coffee, animals, and organic food.</i>	
1020.29	<i>13.6 Explain why water conservation is important and list the ways a restaurant or foodservice operation can improve its water usage efficiency.</i>	
1020.30	<i>13.7 Explain the differences between renewable and nonrenewable energy sources.</i>	
1020.31	<i>13.8 Describe why energy efficiency is important and in what ways a restaurant or foodservice operation can improve its energy usage efficiency.</i>	
1020.32	<i>13.9 Describe ways a restaurant or foodservice operation can build or make structural improvements to its facility in a sustainable way.</i>	
1020.33	<i>13.10 Describe how a restaurant or foodservice operation can reduce the total amount of its waste.</i>	
1020.34	<i>13.11 List items that a restaurant or foodservice operation can reuse or recycle.</i>	
1020.35	<i>13.12 Describe greenwashing and ways a restaurant or foodservice operation can avoid it.</i>	

Course Description: This course will educate students on the basics of the industry. This course starts with teaching students about the various ingredients used for baking and pastry arts and how these ingredients react to each other to make products. It will also instruct students on various breads such as quick breads, artisan and yeast breads, and laminated doughs. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Identification, Classification, and Properties of Ingredients		Complete
Content Skill Sets		Knowledge / Performance
1024.01	Identify, compare, and contrast ingredients and their sources.	
1024.02	Explain the strengthening or weakening effect of ingredients in the production of doughs and batters.	
1024.03	Select specific ingredients and/or substitutions appropriate to method and desired product outcome.	
1024.04	Identify and describe physical, chemical, and biological leaveners.	
1024.05	Identify herbs, spices, and flavor extracts.	

Baking Preparation (Mise en Place)		Complete
Content Skill Sets		Knowledge / Performance
1024.06	Demonstrate mise en place by planning assignment inventory of ingredients, equipment, and tools.	
1024.07	Break down assignments into tasks.	
1024.08	Utilize convenience products if and when necessary, preparing a sequenced and prioritized timeline.	
1024.09	Demonstrate a variety of cooking methods: baking, frying, and steaming.	
1024.10	Display understanding of basic bakery production and planning principles, including the importance of planning to the overall operation of a baking facility.	

Basic Baking		Complete
Content Skill Sets		Knowledge / Performance
1024.11	Read and prepare standardized recipes/formulas and menus.	
1024.12	Define terms related to baking methods, processes, and techniques.	
1024.13	Describe, compare, and contrast yeast and laminate dough types and related methods and processes.	
1024.14	Describe, compare, and contrast quick breads, including muffin and biscuit dough types and related methods and processes.	
1024.15	Describe, compare, and contrast creaming and two-stage methods as they relate to cakes, cookies, quick breads, brownies, and short dough.	

1024.16	Describe proper gluten development in relationship to product outcomes.	
1024.17	Relate cooking times and temperatures to methods, products, and ingredients.	
1024.18	Indicate order for adding ingredients given various methods.	

Course Description: This course will instruct students on how to make cookies, pies, and cakes. It educates students about the various types of icings and frostings and introduces them to custards, sauces, and creams. This course also teaches students how to make ice cream and gives them some knowledge of how to adapt recipes to meet special dietary needs. Students utilize problemsolving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Basic Baking		Complete
Content Skill Sets		Knowledge / Performance
1025.01	Describe, compare, and contrast pie dough types and related methods and processes.	
1025.02	Describe, compare, and contrast fruit pie filling methods.	
1025.03	Describe, compare, and contrast creaming and two-stage methods as they relate to cakes, cookies, quick breads, brownies, and short dough.	
1025.04	Describe, compare, and contrast egg foam method as it relates to sponge, génoise, angel food.	
1025.05	Describe, compare, and contrast frosting, icing, and glaze types and methods.	
1025.06	Describe Pâte à Choux and products derived from it.	
1025.07	Describe, compare, and contrast custard types and related methods.	

Nutrition		Complete
Content Skill Sets		Knowledge / Performance
1025.08	Discuss various alternatives to increase the wholesomeness of baked goods.	
1025.09	Interpret food labels in terms of the portion size, ingredients, and nutritional value.	

Course Description: This course will educate students on how to make some of the more intricate products of the industry. It will introduce students to tortes and specialty cakes, petits fours, and plated desserts. This course also will give students some experience with chocolate and sugar work. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Product Merchandising		Complete
Content Skill Sets		Knowledge / Performance
1026.01	Determine methods of promoting baked goods, including seasonal merchandising strategies.	
1026.02	Create menu item descriptions for bakery goods.	
1026.03	Demonstrate food presentation techniques.	
1026.04	Discuss proper labeling requirements.	

West Virginia Standards

Ice Cream and Frozen Desserts		Complete
Content Skill Sets		Knowledge / Performance
1026.05	Evaluate commercially prepared ice cream and frozen products.	
1026.06	Explain the churning method for making ice creams and sorbets.	
1026.07	Explain the still-freezing method for preparing frozen desserts.	
1026.08	Prepare a variety of ice creams, sorbets and frozen desserts.	
1026.09	Prepare a variety of frozen soufflés, mousses, tortes and bombes.	

Tortes and Specialty Cakes		Complete
Content Skill Sets		Knowledge / Performance
1026.10	Prepare a variety of tortes.	
1026.11	Prepare a variety of specialty torte fillings.	
1026.12	Assemble tortes using basic and advanced icing techniques.	
1026.13	Assemble and decorate a variety of specialty cakes.	

Petits Fours and Confections		Complete
Content Skill Sets		Knowledge / Performance
1026.14	Explain the uses of petit fours.	
1026.15	Prepare an assortment of traditional petits fours and confections.	
1026.16	Create petits fours using different components.	

Chocolate and Sugar Work		Complete
Content Skill Sets		Knowledge / Performance
1026.17	Identify a variety of chocolate products.	
1026.18	Explain the various procedures for tempering chocolate.	
1026.19	Prepare chocolate decorations and candies.	
1026.20	Prepare marzipan and nougatine.	
1026.21	Make and use pastillage.	
1026.22	Prepare and use caramel to create spun sugar and caramel decorations.	
1026.23	Prepare sugar showpieces.	

Course Description: This course is designed to provide students with the knowledge and skills needed to assist the legal industry with court preparation, legal interventions, research and office management. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Criminal Law and Procedures

Complete

Content Skill Sets		Knowledge/ Performance
1031.01	Identify key constitutional amendments.	
1031.02	Exhibit knowledge of differences between criminal and civil law.	

Court System

Complete

Content Skill Sets		Knowledge/ Performance
1031.03	Describe the difference between a search warrant and an arrest warrant.	
1031.04	Identify occupations, roles, and responsibilities within the court system.	
1031.05	Describe appropriate professional courtroom testimony and demeanor.	
1031.06	Exhibit knowledge of the juvenile justice system.	
1031.07	Display understanding of the different levels of federal courts.	
1031.08	Exhibit knowledge of trial and court procedures.	
1031.09	Define courtroom terminology.	

Police Concepts and Skills

Complete

Content Skill Sets		Knowledge/ Performance
1031.10	Display knowledge of different types of investigation (juvenile, robbery).	

West Virginia Standards

Court Systems and Practices

Complete

Content Skill Sets		Knowledge/ Performance
1031.11	Explain the jurisdictions of the following: military courts, federal courts, state.	

1031.12	Courts, military tribunals, justice, municipal and county courts.	
1031.13	Describe the types and roles of juries.	
1031.14	Explain the appeal process.	
1031.15	Examine pretrial proceedings including motions, hearings, plea negotiations and pre-trial release.	
1031.16	Differentiate substantive and procedural law.	
1031.17	Describe the process of how a criminal case is adjudicated from the first appearance to the appeals process.	
1031.18	Describe the functions of various participants in the courtroom including the judge, prosecutor, court clerk, court reporter, bailiff, defense attorneys, witnesses, and victims.	
1031.19	Explain jurisdictional determination of cases.	

Legal Case Management		Complete
Content Skill Sets		Knowledge/ Performance
1031.20	Clarify the importance of good interviewing techniques to focus, test, and expand on initial information.	
1031.21	Explain proper citation formatting.	
1031.22	Discuss formatting differences with regulations, agency material, and arbitration decisions.	
1031.23	Examine the structure of opinions and properly research and analyze cases.	
1031.24	Apply rules of English grammar to legal writing.	
1031.25	Analyze the process and procedures of a lawsuit, including pleading, discovery and litigation processes.	
1031.26	Investigate specialized legal office software for case management.	

Legal Office Management		Complete
Content Skill Sets		Knowledge/ Performance
1031.27	Explain the types of law offices and their services to clients.	
1031.28	Review components of law office procedures manuals.	
1031.29	Discuss ethical considerations or concerns in relation to the legal team, client relations, and billing/fees.	
1031.30	Examine procedures for file and library management.	
1031.31	Investigate specialized legal office software for practice management including timekeeping, billing, calendaring, etc.	
1031.32	Investigate legal marketing plans.	

Course Description: The Skill Sets in this course focus on the knowledge and skills needed in the public safety field to conduct criminal investigations. This course is an elective for the Law and Public Safety Program of Study.

Roles and Responsibilities of an Officer/Investigator		Complete
Content Skill Sets		Knowledge/ Performance
1032.1	Outline major historical developments in the field of criminal investigation	
1032.2	Explore the roles and responsibilities of the criminal investigator	
1032.3	Discuss attributes desirable in a criminal investigator	
1032.4	Relate skills and abilities to possible career pathways	
1032.5	Outline the purposes and functions of a crime scene investigation	
1032.6	Explain the duties of the first officer at a crime scene	
1032.7	Identify the potential threats to investigators' health and safety	
1032.8	List sources of information available to the criminal investigator	
1032.9	Discuss arrest and search procedures as they relate to criminal investigations	

Concepts of Crimes and Offenses		Complete
Content Skill Sets		Knowledge/ Performance
1032.10	Assess principle elements of various types of crimes	
1032.11	Interpret sociological and demographic variables associated with various crimes	
1032.12	Articulate types of homicide	
1032.13	Discuss information used to distinguish between homicide and suicide	
1032.14	Discuss the concept of serial killing	
1032.15	Identify types of drug-related offenses	
1032.16	Explain the characteristics of poisoning	
1032.17	Determine elements of various types of sex-related offenses	
1032.18	Articulate the elements of the legal definition of rape	
1032.19	Assess the importance of rape offender files	
1032.20	Determine elements of the crime of arson	
1032.21	Identify and explain the elements of robbery/burglary	
1032.22	Discuss various terrorist groups and their actions	

Legal Issues		Complete
Content Skill Sets		Knowledge/ Performance
1032.23	Assess malum in se and malum prohibitum types of behavior	
1032.24	Examine components of corpus delicti	
1032.25	Explore the impact of Miranda v. Arizona and other Supreme Court cases on police interrogation	
1032.26	Explain the concept of due process	
1032.27	Apply the concept of case law	
1032.28	Apply the concept of rules of evidence	
1032.29	Determine legal issues involved in the collection, preservation and processing of physical evidence	
1032.30	Articulate legal issues involved in crime scene processing	
1032.31	Explain criteria for ensuring that evidence of guilt is admissible in court	

Communication		Complete
Content Skill Sets		Knowledge/ Performance
1032.32	Interpret verbal and nonverbal communication	
1032.33	Apply basic speaking and active listening skills including reflection, restatement and clarification techniques	
1032.34	Recognize barriers to communication	
1032.35	Recognize the elements of communication using a sender-receiver model	
1032.36	Apply speaking and active listening skills	
1032.37	Recognize elements of written and electronic communication including writing a letter (spelling, grammar and formatting)	
1032.38	Recognize the importance of courtesy and respect for customers and colleagues and maintain good interpersonal relationships	
1032.39	Discuss how to adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups	
1032.40	Investigate methods of supervision such as giving and receiving feedback and instruction	
1032.41	Distinguish between and report subjective and objective information	
1032.42	Report relevant information in order of occurrence	
1032.43	Select and employ appropriate communication concepts and strategies to enhance oral and written communication in the workplace	
1032.44	Locate, organize and reference written information from various sources	
1032.45	Design, develop and deliver formal and informal presentations using appropriate media to engage and inform diverse audiences	
1032.46	Develop and interpret tables and charts to support written and oral communication	

Investigative Techniques		Complete
Content Skill Sets		Knowledge/ Performance
1032.47	Discuss the major events in the investigation of a crime	
1032.48	Explain the major steps in a preliminary investigation	

1032.49	Describe activities conducted in a follow-up investigation	
1032.50	Define a crime scene	
1032.51	Define crime scene reconstruction and state the types of reconstruction	
1032.52	Explain the role of intelligence units and types of intelligence	
1032.53	Distinguish between types of evidence including impressions, biological evidence, trace evidence and firearms/weapons)	
1032.54	Outline procedures for proper protocol	
1032.55	Articulate procedures for processing a crime scene	
1032.56	Describe the process for securing and protecting a crime scene	
1032.57	Execute proper crime scene documentation (photograph/video/sketch)	
1032.58	Write effective notes (crime scene, interview, etc.) and accurate investigative reports	
1032.59	Discuss the use of databases and photo line-ups	
1032.60	Discuss the use of physical surveillance	
1032.61	Discuss the use of informants	
1032.62	Explain the purpose of psychological profiling	
1032.63	Describe a psychological autopsy	
1032.64	Assess the importance of establishing the motive for certain crimes	
1032.65	Describe action, physical and situational stereotyping	
1032.66	Compare and contrast interrogation and interviewing	
1032.67	Demonstrate proper interrogation and interviewing techniques	
1032.68	Interpret various types of body language	
1032.69	Explain the use of body language in criminal investigations	
1032.70	Discuss how memory and perception may affect eyewitness reports	
1032.71	Determine the characteristics of an effective witness	
1032.72	Assess the key aspects of suspect identification	
1032.73	Describe polygraphs, computer voice stress analysis, facial recognition software, the internet and other technology and discuss their applications	
1032.74	Describe time-event charting, link analysis and telephone record analysis	
1032.75	Identify financial difficulty indicators	
1032.76	Chart the fundamental characteristics of gunshot wounds	
1032.77	Explore the types of wounds associated with asphyxiation/strangulation	
1032.78	Show the primary characteristics of cutting, stabbing and blunt force wounds	
1032.79	Explain the role and importance of DNA analysis and describe current technologies for analysis and data banking	
1032.80	Utilize proper collection, marking, preservation and processing methods for physical evidence	
1032.81	Describe processes for transmitting physical evidence to the crime laboratory while maintaining chain of custody	
1032.82	Describe processes for preserving footwear and tire prints and impressions	
1032.83	Outline procedures for locating and handling soil and pollen evidence	
1032.84	Summarize techniques for collecting glass and paint evidence	
1032.85	Discuss methods of collecting and storing fibers, cloth fragments and impressions	

1032.86	Discuss the identification and analysis of bloodstains and blood spatter	
1032.87	Explain the importance of forensic dentistry and odontology	
1032.88	Discuss the process of fingerprint identification and comparison	
1032.89	Describe AFIS, IAFIS and NIBIN	
1032.90	Discuss use of tools to obtain fingerprints	
1032.91	Explain determinations that can be made from firearm evidence	
1032.92	Apply the results of crime lab analysis on trace evidence to the investigation of a case	
1032.93	Discuss the role of the forensic entomologist in determining time of death	
1032.94	Explain autopsy protocol	
1032.95	Describe methods for initiating cold case investigations	

Course Description: This course is designed to provide students with fundamental principles in the corrections field including: the evolution of correctional practices and philosophies including treatment models; correctional law; the relationship of correctional activities to other aspects of the criminal justice system; detention facilities; and probation and parole programs. The differences between levels of security and characteristics of offenders (such as gender and age) and the development of inmate cultures will be examined. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Police Concepts and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1034.01	Identify appropriate search procedures for persons, structures, and vehicles.	

Corrections		Complete
Content Skill Sets		Knowledge/ Performance
1034.02	Identify corrections concepts, methods, and history.	
1034.03	Identify various types, security levels, and classifications of correctional institutions.	
1034.04	Understand methods and history of capital punishment.	
1034.05	Display knowledge of intake procedures.	

West Virginia Standards

Corrections Policies and Practices		Complete
Content Skill Sets		Knowledge/ Performance
1034.06	Examine the components and functions of the correctional system.	
1034.07	Discuss the history of social control, crime and punishment.	
1034.08	Describe theories of criminology and imprisonment and their impact on current corrections practices including administration.	
1034.09	Discuss correctional ideologies including classical vs. positive treatments.	
1034.10	Examine issues relating to punishment including data on effectiveness.	
1034.11	Discuss the goals of corrections including incapacitation, retribution, deterrence and rehabilitation.	
1034.12	Explain the roles of various administrators within the management of correctional institutions including the warden, deputy and officer.	
1034.13	Discuss critical issues relating to current correctional practices.	

1034.14	Outline the path of a criminal case through the justice system.	
1034.15	Describe the sentencing process and sentencing alternatives.	
1034.16	Describe the appellate review process.	
1034.17	Examine the purpose and organization of probation and parole including the types and conditions.	
1034.18	Discuss probation and parole violations.	
1034.19	Explain the supervisory process related to probation and parole.	
1034.20	Describe problem encountered upon parole.	
1034.21	Explore characteristics of prisoners and aspects of prison culture.	
1034.22	Compare and contrast types of correctional facilities both past and present.	
1034.23	Define levels of security.	
1034.24	Survey components of the correctional process including the organization of correctional departments, security levels of prisons and prison management.	
1034.25	Compare and contrast prisons systems for males, females, both males and females, adults and juveniles.	
1034.26	Explain the effects of social and cultural factors on correctional clients.	
1034.27	Examine institutional based programs related to work, recreation, education and pre-release.	
1034.28	Examine community-based programs including issues related to treatment.	
1034.29	Examine offender classification systems.	
1034.30	Describe the roles and responsibilities of correctional officers.	
1034.31	Examine the effects of mental disorders, including drug abuse, on the correctional environment.	
1034.32	Discuss opportunities for professional development within the field of corrections.	
1034.33	Discuss issues related to the management of housing and other custodial issues.	
1034.34	Describe various ACA standards and classifications.	

Human Relations		Complete
Content Skill Sets		Knowledge/ Performance
1034.35	Examine best practices concerning conflict resolution.	
1034.36	Examine Social and Cultural Awareness.	
1034.37	Discuss the different styles of leadership.	
1034.38	Describe social responsibility.	
1034.39	Exhibit interagency cooperation.	
1034.40	Demonstrate team building.	
1034.41	Identify law enforcement and community collaboration.	

Course Description: This course is designed to provide students with fundamental principles of the law enforcement field such as the history of policing in the US, the characteristics of law enforcement agencies and types of police activities including criminal investigation. Current issues and trends in law enforcement will be investigated. Aspects of criminal investigation such as evidence collection, fingerprinting, latent dusting, interviewing and report writing will be presented. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Use of Force		Complete
Content Skill Sets		Knowledge/ Performance
1035.01	Identify and understand the use of force.	
1035.02	Exhibit knowledge and understanding of civil and criminal liabilities.	

Criminal Law and Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1035.03	Exhibit knowledge of differences between criminal and civil law.	

Police Concepts and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1035.04	Display knowledge of radio usage and procedures.	
1035.05	Identify appropriate search procedures for persons, structures, and vehicles.	
1035.06	Identify different types of patrol procedures and technique.	
1035.07	Display knowledge of different types of investigation (juvenile, robbery).	
1035.08	Describe scene safety techniques for officer response (e.g., domestic abuse, assault).	
1035.09	Describe scene safety techniques at motor vehicle crash sites.	
1035.10	Describe characteristics of individuals operating a vehicle while impaired.	

Police Concepts and Skills Continued:		Complete
Content Skill Sets		Knowledge/ Performance

1035.11	Describe proper traffic stop techniques.	
1035.12	Describe proper handcuffing techniques.	
1035.13	Exhibit knowledge of the history of policing.	

Communication		Complete
Content Skill Sets		Knowledge/ Performance
1035.14	Exhibit knowledge of emerging police technology and social media.	
1035.15	Discuss the relationship between law enforcement and media (<i>West Virginia Standard</i>).	
1035.16	Discuss proper usage of Amber and Silver alerts (<i>West Virginia Standard</i>).	
1035.17	Describe the benefits of social media and the investigation of crimes. (<i>West Virginia Standard</i>).	
1035.18	Demonstrate proper media release (<i>West Virginia Standard</i>).	

West Virginia Standards

Law Enforcement Policies and Practices		Complete
Content Skill Sets		Knowledge/ Performance
1035.19	The history and functions of various local, state and federal law enforcement agencies including municipal police agencies, Sheriff's offices, state police agencies, the FBI and other federal law enforcement agencies and multi-jurisdictional task forces.	
1035.20	The roles and responsibilities of the major units of law enforcement agencies including patrol units, detective units, internal affairs, drug task forces and narcotics units and vice units.	
1035.21	Compare and contrast the functions, roles and responsibilities of various types of law enforcement agencies and units.	
1035.22	Assess the effects of various constitutional provisions, legislative acts and court decisions on law enforcement procedure.	
1035.23	Explore methods of enhancing the public's trust.	
1035.24	Examine programs for teaching crime prevention.	
1035.25	Explore methods for promoting concern for victims and other specific groups of people.	
1035.26	Display appropriate written communication skills necessary for a law enforcement professional.	
1035.27	Apply appropriate level of the force continuum to various deadly and non-deadly situations.	
1035.28	Describe the dynamics of integrity and the consequences to a law enforcement office if s/he violates a citizen's rights.	

Course Description: This course is designed to provide students with the knowledge and skills needed for the development and implementation of protective security operations including: the protective security law and management; procedures for basic instant response; methods of collecting intelligence and security related investigations; chemical, biological, radiological and nuclear weapons use; and aspects of domestic and international terrorism and the U.S. government’s efforts to protect our country and its citizens. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Police Concepts and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1037.01	Display knowledge of different types of investigation (juvenile, robbery).	

Security: National, International, and Private		Complete
Content Skill Sets		Knowledge/ Performance
1037.02	Exhibit awareness of sources and types of domestic and international terrorism.	
1037.03	Identify and understand different types of criminal organizations.	
1037.04	Exhibit knowledge of private security and property protection.	

West Virginia Standards

Security and Protective Policies and Practices		Complete
Content Skill Sets		Knowledge/ Performance
1037.05	Compare and contrast the functions of law enforcement, corrections and security fields.	
1037.06	Explain the differences and similarities in authority and jurisdiction between criminal justice and security professionals.	
1037.07	Analyze specific settings that security systems and personnel protect.	
1037.08	Analyze terrorism as it relates to the duties of a security officer.	
1037.09	Analyze risk management as it applies to the field.	
1037.10	Examine laws relevant to the field.	
1037.11	Describe the responsibilities of a security supervisor.	
1037.12	Differentiate between government and commercial needs relative to security.	
1037.13	Describe employee security training programs.	
1037.14	Contrast security surveys and security inspections.	
1037.15	Describe the characteristics of proprietary and contract security operations.	
1037.16	Describe security systems commonly used in the field.	
1037.17	Describe various crime prevention approaches.	
1037.18	Demonstrate basic incident response procedures.	
1037.19	Develop an emergency procedures handbook.	

Course Description: This course is designed to give students the opportunity to connect theory and practice by interacting with Public Safety professionals. Students will study various requirements for employability in the Public Safety field, including ethics, teamwork, and professionalism. Students may participate in activities associated with Public Safety agencies (such as county and local law enforcement, county judicial offices, correctional facilities, training academies, social services, etc.) for hands-on or work-based experiences. Preparation includes the construction of a portfolio that can be utilized in obtaining employment upon completion of the student’s program. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real-world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Court System		Complete
Content Skill Sets		Knowledge/ Performance
1039.01	Describe the difference between a search warrant and an arrest warrant.	
1039.02	Display understanding of the different levels of federal courts.	
1039.03	Describe appropriate professional courtroom testimony and demeanor.	
1039.04	Exhibit knowledge of trial and court procedures (e.g., courtroom terminology, personnel).	
1039.05	Exhibit knowledge of the juvenile justice system.	

Industry- Based Integration & Transition		Complete
Content Skill Sets		Knowledge/ Performance
1039.06	Discuss methods of socialization to various employment settings within the chosen specialization area.	
1039.07	Examine organizational structures including policies and procedures of various industry settings.	
1039.08	Compare organizational mission statements to organizational performance.	
1039.09	Identify conceptual frameworks applied in various settings.	
1039.10	Engage with individual, family, group, organization or community clients/representatives to identify concerns and activities to alleviate identified problems related to specific situations.	
1039.11	Articulate a personal framework for human services delivery within public safety leadership.	
1039.12	Apply research-based knowledge to practice situations.	

West Virginia Standards**Professional Accountability****Complete****Content Skill Sets****Knowledge/
Performance**

1039.13 Discuss the duties and responsibilities of Internal affairs.

1039.14 Examine both the personal and professional repercussions of officer misconduct.

1039.15 Discuss employment and screening processes for officers.

1039.16 Examine training curriculum for city, county, state, and federal officers.

1039.17 Explain the presence and role of civilian review boards.

1039.18 Describe the utilization of police surveillance cameras (in-car cameras, body cameras, etc.).

1039.19 Discuss oath of office.

Course Description: The Skill Sets in the course focus on knowledge necessary for improved capability to perform specific physical tasks, mobilize the body efficiently, reduced risk during physical tasks, psychological preparation, reduce stress and associated health risk. This course is an elective for Law Enforcement Services and Emergency and Fire Management Services Pathways.

Basic Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
1055.01	Explain why nutrition is important in an exercise plan.	
1055.02	Articulate why vitamins are essential.	
1055.03	List complex carbohydrates.	
1055.04	List complete protein.	
1055.05	Identify the different types of fat.	
1055.06	Name the recommended beverage during physical fitness.	

Emotional/Physical Well-Being		Complete
Content Skill Sets		Knowledge/ Performance
1055.07	Explain shift work and how does it correlate to sleep patterns.	
1055.08	Identify health problems associated with poor sleeping habits.	
1055.09	Define stress.	
1055.10	Identify ways to deal with stress.	
1055.11	Define Time Management.	
1055.12	Explain the benefits of Time Management.	
1055.13	Explain how failing to manage your time effectively can have consequences.	
1055.14	Explore ways to improve your time management skills.	

Fitness		Complete
Content Skill Sets		Knowledge/ Performance
1055.15	Define fitness.	
1055.16	Explain the importance of being physically fit in Law Enforcement/Emergency Personnel.	
1055.17	Explain how unhealthiness effects the job performance/safety.	
1055.18	Identify the benefits of/and perform stretching exercises.	
1055.19	State the approximate time for warming up and cool down period.	
1055.20	Explain the benefits of running.	

1055.21	Perform one mile run in 10:00 minutes.	
1055.22	Identify and perform exercises that enhance cardiovascular level.	
1055.23	Identify and perform drills that increase speed and agility.	
1055.24	Name and perform common strength training exercises.	

Personal and Environmental Safety		Complete
Content Skill Sets		Knowledge/ Performance
1055.25	Identify how airborne transmission occurs.	
1055.26	Distinguish between fact and fallacy about the transmission and treatment of diseases caused by blood-borne pathogens.	
1055.27	Apply infections control techniques designed to prevent the spread of diseases caused by blood-borne pathogens as followed in the Center for Disease Control (CDC) guidelines.	

Injury Prevention		Complete
Content Skill Sets		Knowledge/ Performance
1055.28	List the main types of job-related firefighter fatalities, injuries, and illness.	
1055.29	Describe the National Fire Protection Association standards related to firefighter safety and health.	
1055.30	Identify Occupational Safety and Health Administration (OSHA) regulations and how they relate to firefighters.	
1055.31	Describe ways to help prevent accidents and injuries in the fire stations and facilities.	
1055.32	Describe ways to maintain safety and training.	
1055.33	State the practices a firefighter I uses for emergency scene procedures and safety.	

Course Description: This course is designed to provide an introduction to the essential components of addictions to substances, objects, behaviors and/or activities as well as programs for the prevention of addictions. The addictive process will be defined, and the physical, psychological, social, emotional and spiritual characteristics of addiction will be described both individually and within the family system. Students will overview signs and symptoms of various addictions such as drugs, gambling, eating disorders, etc., and understand physical addiction and psychological dependence. Theories on addiction will be summarized. Prevention for addictions including an overview of risk and protective factors and program strategies will be examined. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA or HOSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Patient Education Intervention and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1060.01	Examine the sign and symptoms of various addictions.	
1060.02	Define the addictive process.	
1060.03	Analyze theories of addictions.	
1060.04	Discuss risk and protective factors.	
1060.05	Develop ATOD prevention education and skill development activities based on target audience analysis.	
1060.06	Connect prevention theory and practice to implement effective prevention education and skill development activities.	
1060.07	Maintain program fidelity when implementing evidence- based programs.	
1060.08	Assure that ATOD education and skill activities are appropriate to the culture of the community being served.	
1060.09	Use appropriate instructional strategies to meet the needs of the target audience.	
1060.10	Ensure all ATOD prevention education and skill development programs accurate, relevant, timely, and appropriate content information.	
1060.11	Identify, adapt, or develop instructor and participant materials for use when implementing ATOD prevention activities.	
1060.12	Provide professionals in related fields with accurate, relevant, timely, and appropriate ATOD prevention information.	
1060.13	Provide technical assistance to community members and organizations regarding ATOD prevention strategies and best practices.	

Needs Assessment and Other Planning Strategies		Complete
Content Skill Sets		Knowledge/ Performance
1060.14	Use needs assessments strategies to gather relevant data for ATOD.	
1060.15	Identify gaps and prioritize needs based on the assessment of community conditions.	
1060.16	Select prevention strategies, programs, and best practices to meet the identified needs of the community.	
1060.17	Develop an ATOD prevention plan based on research and theory that addresses community needs and desired outcomes.	

1060.18	Identify resources to sustain prevention activities.	
1060.19	Identify appropriate ATOD prevention program evaluation strategies.	
1060.20	Conduct evaluation activities to document program implementation and effectiveness.	
1060.21	Use evaluation findings to determine whether and how to adapt ATOD prevention strategies.	

Community Organization		Complete
Content Skill Sets		Knowledge/ Performance
1060.22	Identify the community's demographic characteristics and core values.	
1060.23	Identify key community leaders to ensure diverse representation in ATOD prevention programming activities.	
1060.24	Build community ownership of ATOD prevention programs by collaborating with key community leaders/members when planning, implementing, and evaluating prevention activities.	
1060.25	Provide technical assistance to community members/leaders in implementing ATOD prevention activities.	
1060.26	Develop capacity within the community by recruiting, training, and mentoring ATOD prevention- focused volunteers.	
1060.27	Assist in creating and sustaining community-based coalitions.	

Public and Organizational Policy		Complete
Content Skill Sets		Knowledge/ Performance
1060.28	Examine the community's public policies and norms to determine environmental change needs.	
1060.29	Make recommendations to policy makers/stakeholders that will positively influence the community's public policies and norms.	
1060.30	Provide technical assistance, training, and consultation that provide environmental change.	
1060.31	Participate in public policy development and enforcement initiatives to effect environmental change.	
1060.32	Use media strategies to enhance prevention efforts in the community.	

Course Description:

Notes: JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

Course Description:

Notes: JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

Course Description:

Notes: JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

NOTES:

JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

NOTES:

JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

Course Description: This course is designed to give students the opportunity to connect theory and practice by interacting with Social Services professionals. Students will study various requirements for employability in the Social Services field including ethics, teamwork, and professionalism. Students may participate in activities associated with Social Services agencies in various settings for hands-on or work-based experiences. Preparation includes construction of a portfolio that can be utilized in obtaining employment upon completion of the student's program. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA or HOSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Industry-Based Integration and Transition		Complete
Content Skill Sets		Knowledge/ Performance
1070.01	Discuss methods of socialization to various employment settings within the chosen specialization area.	
1070.02	Examine organizational structures including policies and procedures of various industry settings.	
1070.03	Compare organizational mission statements to organizational performance.	
1070.04	Identify conceptual frameworks applied in various settings.	
1070.05	Engage with individual, family, group, organization or community clients/representatives to identify concerns and activities to alleviate identified problems specific to that population.	
1070.06	Articulate a personal framework for human services delivery within chosen specialization.	
1070.07	Apply research-based knowledge to practice situations.	
1070.08	Examine methods of giving and receiving supervision.	
1070.09	Explain requirements and competencies for chosen specialization.	

Course Description: This course is designed to provide students with fundamental principles in the community behavioral health field including: the modern delivery of behavioral health care services; service populations in behavioral health; symptoms and treatments of various mental disorders; biopsychosocial assessment; development of interpersonal communication skills; recording of critical events; crisis intervention skills; ethics and confidentiality; and safety techniques. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization FCCLA or HOSA. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Human Services Delivery and Interventions		Complete
Content Skill Sets		Knowledge/ Performance
1071.01	Discuss the role of human services in relation to collaborating with other professionals in the evaluation of patients' medical or physical conditions.	
1071.02	Explain techniques for interviewing patients to identify environmental impediments to patient progress.	
1071.03	Examine methods of diagnosing mental disorder.	
1071.04	Develop advocacy plans for clients/patients in crisis.	
1071.05	Develop referral plans for clients/patients.	
1071.06	Relate measurable goals for treatment and care plans and requirements for plan revisions.	
1071.07	Analyze techniques for individual and group educational and therapeutic interventions for recovery from illness and adjustment to transition.	
1071.08	Identify goals for discharge planning.	
1071.09	Develop referral resources to assist in client/patient recovery and to access services.	
1071.10	Analyze methods of assessing clients' needs in relation to medical/mental or physical conditions.	
1071.11	Examine social policy relating to medical social services settings.	
1071.12	Explain various service information such as eligibility requirements, application details, payment methods and applicants' legal rights.	
1071.13	Identify community development activities relating to medical social services settings.	
1071.14	Relate methods of educating patients on issues relating to various mental disorders.	

NOTES:

JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

NOTES:

JROTC is a Federal program sponsored by the U.S. Armed Forces in high schools nationwide. Its purpose is to instill in cadets the values of citizenship, service to their country, living drug-free and personal responsibility. The program helps students develop self-reliance, oral and written communication, leadership, team building and an appreciation for physical fitness.

[Official Website of the U.S. Army JROTC \(usarmyjrotc.com\)](http://usarmyjrotc.com)

[Air Force Junior Reserve Officer Training Corps \(af.edu\)](http://af.edu)

[Home \(marines.mil\)](http://marines.mil)

[Navy Junior Reserve Officers Training Corps](http://navyjrotc.com)

Course Description: This is the introductory course to outdoor recreation and recreation resources. It emphasizes the study of the role of natural resources in the pursuit of leisure and tourism. Topics include prominent naturalists and philosophers of the outdoor movement, agencies that provide outdoor recreation opportunities, basic environmental issues impacting outdoor recreation, assessment of outdoor recreation activities and eco-tourism issues. Leave No Trace practices and ethics will also be a major portion of this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA or FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

West Virginia Standards

Environmental Ethics and Stewardship		Complete
Content Skill Sets		Knowledge / Performance
1086.01	Meet requirements for completing a Leave No Trace Workshop through the Center for Outdoor Ethics.	
1086.02	Conduct educational activities for school children utilizing Leave No Trace principles.	

Recreational Safety and Risk Management		Complete
Content Skill Sets		Knowledge / Performance
1086.03	Create risk assessments for various outdoor activities.	
1086.04	Identify and determine ways to manage risk during outdoor activities.	
1086.05	Perform emergency duties to protect human life, government property, and natural features of a park.	
1086.06	Organize and direct the activities of coworkers.	
1086.07	Examine injured persons and administer first aid if necessary, using training and medical supplies/equipment.	
1086.08	Contact emergency medical personnel in case of serious injury or medical emergency.	
1086.09	Rescue distressed persons, using rescue techniques and equipment.	
1086.10	Patrol or monitor recreational areas such as trails, slopes, and swimming areas, on foot, in vehicles, or from towers.	
1086.11	Complete and maintain records of weather conditions, emergency medical treatments performed, and other relevant incident information.	
1086.12	Warn recreational participants of inclement weather, unsafe areas, or illegal conduct.	
1086.13	Inspect recreational equipment for safety hazards and damage or wear.	

Organization of Activities		Complete
Content Skill Sets		Knowledge / Performance
1086.14	Demonstrate safety procedures for various outdoor activities.	
1086.15	Demonstrate skills for various outdoor activities.	
1086.16	Obtain certifications or assessments such as ATV Safety, Swift Water Rescue, Belaying, etc.	
1086.17	Select travel routes and sites to be visited based on knowledge of specific areas.	
1086.18	Conduct field trips to point out scientific, historic, and natural features of parks, forests, historic sites or other attractions.	
1086.19	Organize, lead, and promote interest in recreational activities such as arts, crafts, sports, games, camping, and hobbies.	

Course Description: This course is designed to focus on “hands on” and academic activities geared toward management opportunities and skills in event design and planning. This course develops students' abilities to manage materials, staff, entertainment and other event planning resources. Students gain practical experience in setting up events and making sure all aspects of the program are organized properly. Topics include serving staff coordination, food delivery and guest registration. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Event Binder		Complete
Content Skill Sets		Knowledge / Performance
1116.01	Create an event binder.	
1116.02	Manage email and electronic files for specific events.	
1116.03	Create a business portfolio.	
1116.04	Present a business portfolio.	

Communicating with the Event Team		Complete
Content Skill Sets		Knowledge / Performance
1116.05	Confirm details while communicating with teams.	
1116.06	Resolve team problems using communication success tips.	
1116.07	Confirm registration, speakers, and entertainment for the event.	
1116.08	Arrange a pre-event meeting.	
1116.09	Finalize transportation details for events.	
1116.10	Meet, confirm, and walk-through with event personnel.	

Managing the Event		Complete
Content Skill Sets		Knowledge / Performance
1116.11	Implement effective negotiation skills to acquire the best deals with vendors.	
1116.12	Develop a contingency plan for problems.	
1116.13	Develop solutions for last minute crisis.	
1116.14	Evaluate vendors to determine which best suits the event needs.	

Final Touches		Complete
Content Skill Sets		Knowledge / Performance
1116.15	Implement an overview of all details for an event.	
1116.16	Review an inspection of rooms form for an event.	
1116.17	Examine a checklist for working with professional speakers/entertainers.	

Safety and Security Measures		Complete
Content Skill Sets		Knowledge / Performance
1116.18	Determine possible health and natural environment hazards.	
1116.19	Recognize potential, real and perceived natural, social or terrorism emergency situations to respond appropriately.	
1116.20	Review a film, photo, or recording to identify and describe an emergency.	
1116.21	Observe guests and surroundings to identify potentially dangerous situations.	
1116.22	Create a resource base using alternative plans and solutions to manage any emergency.	
1116.23	Determine methods to resolve or eliminate potential safety hazards.	
1116.24	Create a proactive solution to address common safety hazards including lighting, sound, surface areas, political and social climate.	
1116.25	Create a reactive solution to guests' exposure to a health hazard.	
1116.26	Suggest ways to manage guests and groups facing safety hazards.	
1116.27	Role play mock emergency situations that implement appropriate measures to deal with hazardous situations.	
1116.28	Research sources to utilize in various emergency situations for self, co-workers and customers/guests.	
1116.29	Examine resources for assistance with communication, law enforcement, environmental issues, legal issues, medical and emergency services.	
1116.30	Determine the need for adequate lighting.	
1116.31	Measure sound levels for security.	

Course Description: A study of the design and implementation of programs for recreation and tourism suppliers that include, but are not limited to, the government, non-profit and commercial agencies. The analysis of a broad range of leisure activities, combined with the identification of customer's needs and expectations, and the matching of the two for a complete experience. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA or FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

West Virginia Standards

Recreational Agencies		Complete
Content Skill Sets		Knowledge / Performance
1125.01	Monitor visitors' activities to ensure compliance with establishment or tour regulations and safety practices.	
1125.02	Provide directions and other pertinent information to visitors.	
1125.03	Greet and register visitors and issue any required identification badges or safety devices.	
1125.04	Perform routine maintenance on park structures.	
1125.05	Manage the daily operations of recreational facilities.	
1125.06	Supervise and coordinate the work activities of personnel, such as training staff members and assigning work duties.	
1125.07	Monitor visitors' activities to ensure compliance with establishment or tour regulations and safety practices.	
1125.08	Provide directions and other pertinent information to visitors.	

Working with Park Staff		Complete
Content Skill Sets		Knowledge / Performance
1125.09	Confer with park staff to determine subjects and schedules for park programs.	
1125.10	Assist with operations of general facilities, such as visitor centers.	
1125.11	Plan, organize and direct activities of seasonal staff members.	

Visitor Services		Complete
Content Skill Sets		Knowledge / Performance
1125.12	Prepare brochures and write newspaper articles.	
1125.13	Distribute brochures, show audiovisual presentations, and explain establishment processes and operations at tour sites.	
1125.14	Provide visitor services by explaining regulations; answering visitor requests, needs and complaints; and providing information about the park and surrounding areas.	

Course Description: The Advanced Pet Grooming course is an advanced specialization course designed for students to create a pet grooming business within the Simulated Workplace environment. Students will manage and operate a pet grooming business in the school laboratory.

Detailed Grooming Techniques		Complete
Content Skill Sets		Knowledge/ Performance
1180.1	Clean breeds facial wrinkles.	
1180.2	Pluck terrier breeds according to standards.	
1180.3	Expel anal glands.	
1180.4	Practice stripping on terrier breeds.	
1180.5	Trim hair around paw pads.	
1180.6	Pull ear hair with proper tools and techniques.	
1180.7	Perform sanitary cuts on appropriate breeds.	
1180.8	Groom dogs from all groups recognized by the AKC.	
1180.9	Use Dremel to smooth and file nails.	
1180.10	Polish nails or apply nail covers.	

Cat Grooming		Complete
Content Skill Sets		Knowledge/ Performance
1180.11	Wear protective equipment while cat grooming.	
1180.12	Practice using different holds and restraining devices on cats.	
1180.13	Identify and properly use specialty combs and brushes.	
1180.14	Unsheathe nails.	
1180.15	Identify nail anatomy.	
1180.16	Clip nails.	
1180.17	Select proper blades to shave cat.	
1180.18	Be familiar with the lion cut.	
1180.19	Identify and clean chin and tail.	
1180.20	Complete eye preparation prior to bathing.	
1180.21	Bathe cat using proper equipment.	
1180.22	Be familiar with types of shampoos to use on cats.	
1180.23	Carefully groom whiskers, tail, ears, eyes and skin of cats.	

Clipper Care and Use		Complete
Content Skill Sets		Knowledge/ Performance
1180.24	Describe different types of clippers and their use.	
1180.25	Identify parts of the clipper.	
1180.26	Maintain the clipper- oil and grease regularly.	
1180.27	Change blades and use kool lube.	
1180.28	Understand depth of cut of blades according to number.	
1180.29	Select proper blade for a particular cut.	
1180.30	Sanitize blades after use.	
1180.31	Utilize blade guards efficiently.	
1180.32	Handle clippers properly during use.	

Grooming Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1180.33	Use proper grooming brushes according to coat type.	
1180.34	Use combs properly for intended purpose.	
1180.35	Identify and use dematting, deshedding, and stripping tools effectively.	
1180.36	Operation of the Dremel.	
1180.37	Use proper size nail clippers and quikstop as needed.	
1180.38	Select proper shears accordingly.	
1180.39	Use clippers according to cut and maintain operation.	
1180.40	Identify types and uses of clipper blades and guard sizes.	
1180.41	Perform clipping on dogs according to breed.	
1180.42	Dry dogs using forced air and cage dryers properly.	
1180.43	Use nooses, loops, leashes, muzzles and chokers properly.	
1180.44	Perform animal grooming duties such as washing, brushing, clipping, and trimming coats, cutting nails, and cleaning ears.	
1180.45	Restrain animal by loops, slings, muzzles, harnesses, etc. according to need.	
1180.46	Follow recommended grooming procedures according to breed, coat, and customer preferences.	

Course Description: The Pet Boarding and Obedience course is an advanced specialization course designed for students to create a pet boarding and obedience business within the Simulated Workplace environment. Students will manage and operate a pet boarding and obedience business in the school laboratory.

Establishing a Kennel		Complete
Content Skill Sets		Knowledge/ Performance
1181.01	Develop a plan for a kennel.	
1181.02	Determine type of kennel operation to develop.	
1181.03	Identify the needs and work areas required for kennels.	
1181.04	Provide proper lighting within the kennel.	
1181.05	Consider traffic flow within the kennel.	
1181.06	Identify types of fencing used in kennels.	
1181.07	Understand proper separation of animals (aggressive/small/cats).	
1181.08	Use runs, play yards, wired topped, and isolation pens correctly.	
1181.09	Use the proper disinfectants and cleaning supplies for kennels.	
1181.10	Develop a sanitation plan for the kennel.	
1181.11	Provide proper air flow and ventilation within the kennel.	
1181.12	Develop protocols to eliminate chance of disease transmission.	
1181.13	Address medical issues when needed.	
1181.14	Understand nutritional needs of dogs	
1181.15	Develop feeding schedules and types of foods for kenneled dogs	
1181.16	Develop protocols in dealing with owners.	
1181.17	Provide double doors for customer entry to contain animals.	
1181.18	Understand orphaned animals at kennels.	
1181.19	Develop a plan for placement of orphaned animals.	

Animal Behaviors and Psychology		Complete
Content Skill Sets		Knowledge/ Performance
1181.20	Identify instinctive and genetic behaviors.	
1181.21	Understand dominance theory.	
1181.22	Recognize the pack order and behavior of alpha dogs.	
1181.23	Research specific and common breed temperaments and behaviors.	

1181.24	Research breed genetics and how they affect behaviors.	
1181.25	Acquire dog's focus during training sessions.	
1181.26	Train basic commands using rewards-based techniques.	
1181.27	Become familiar with proper use of chokers, prong collars, electric shock, and harnesses to restrain dogs during training.	
1181.28	Understand the theory of off-leash control.	
1181.29	Use 3 basic commands when training dogs.	
1181.30	Identify markers for dogs to modify behaviors.	
1181.31	Use repetition and re teaching during dog training sessions.	
1181.32	Understand and practice the use of eye contacting training dogs.	
1181.33	Remove emotion from training sessions.	
1181.34	Practice reward training for desired behaviors.	
1181.35	Define compulsion training.	
1181.36	Use compulsion training only with aggressive animals.	
1181.37	Identify corrections from soft to hard.	
1181.38	Use corrections according to need from soft to hard.	
1181.39	Identify fearful behaviors (loud noise, gunshot).	
1181.40	De-escalate fearful behaviors using proper techniques.	

Police Dog Training		Complete
Content Skill Sets		Knowledge/ Performance
1181.41	Research behavioral requirements of dogs for police work.	
1181.42	Identify skill sets for dogs training for police work.	
1181.43	Identify behaviors needed for dogs training in search/rescue/drug.	
1181.44	Obtain focus to motivate dogs using reward-based techniques.	
1181.45	Set boundaries and limitations on dogs in training.	
1181.46	Define the 3 levels of corrections for aggressive behaviors	
1181.47	Practice compulsion training properly to motivate aggressive animals.	
1181.48	Define imprinting/bonding.	
1181.49	Practice imprinting/bonding while working with customers.	
1181.50	Teach customers the 3 basic commands.	
1181.51	Control affection during training sessions.	
1181.52	Understand the black/white world of dogs.	
1181.53	Identify breeds with potential to be air scent/cadaver dogs.	
1181.54	Research behaviors required to be air scent/cadaver dogs.	

Kennel Services		Complete
Content Skill Sets		Knowledge/ Performance
1181.55	Define traditional vs. cage free kennels.	
1181.56	Identify services available for kennels to add income to the business.	
1181.57	Groom or train animals within the kennel.	
1181.58	Identify requirements for vaccinations/flea control/etc.	
1181.59	Develop a procedure to organize customer/dog leashed, toys, foods, etc.	
1181.60	Understand the need and profitability for k-9 daycares.	
1181.61	Understand the need for geriatric areas/rest areas/play areas.	
1181.62	Research new services within daycares to add income such as taxi services, hydrotherapy, etc.	
1181.63	Develop a plan for customer waiting areas.	
1181.64	Explore use of webcams for customer satisfaction.	

Animal Shelter Operations		Complete
Content Skill Sets		Knowledge/ Performance
1181.65	Research the goals and mission of animal shelters.	
1181.66	Define kill vs. no kill facilities.	
1181.67	Identify stray animal laws.	
1181.68	Research breed ban laws.	
1181.69	Research jobs within the animal shelter operation.	
1181.70	Visit the local animal shelter.	
1181.71	Research laws and penalties for fighting and abuse of animals.	
1181.72	Define the goals of the breed rescue organization.	
1181.73	Research how rescue organizations operate.	

Course Description: This course provides instruction for students to receive on-the-job training that contributes to the over-all instructional program. This elective is open only to students in an approved program of study related to hospitality education. The instruction, through a pre-written agreement between school, employer, student, and parent/guardian, is a combination of study in school with employment in an appropriate field. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

West Virginia Standards

Attitude, Behavior, Communication & Ethics		Complete
Content Skill Sets		Knowledge / Performance
1210.01	Abide by the agreement established with the employer, school, and parents.	
1210.02	Dress and groom appropriately for the workplace.	
1210.03	Demonstrate honesty and integrity.	
1210.04	Show punctuality, attendance, and dependability on the job.	
1210.05	Focus on tasks without direct supervision.	
1210.06	Implement strategies for completion of assigned tasks.	
1210.07	Utilize time management principles when completing assignments.	
1210.08	Establish a positive attitude and relationship with customers, co-workers, and management.	
1210.09	Relate the importance of serving as a team member.	
1210.10	Show accountability for one's performance.	
1210.11	Ask for help when needed.	

Evaluation of Work Experience		Complete
Content Skill Sets		Knowledge / Performance
1210.12	Acquire supporting documentation.	
1210.13	Maintain complete and accurate records for work experience.	
1210.14	Work with the teacher and employer to develop individual training plans.	
1210.15	Execute the approved training plan with frequent interaction with the hospitality education program teacher.	
1210.16	Complete a personal interest and resource inventory to identify potential enterprises appropriate for their individualized programs.	

Course Description: This course is designed introduced to needed skills for successful employment in the hospitality field. This course provides students with a comprehensive tour through the travel and tourism environment. Students will discover the characteristics of the hospitality industry, the relationship between hospitality and tourism, the economics and promotion of tourism, and an overview of the lodging and restaurant industries. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA or FCCLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

General Hospitality and Tourism Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1211.01	Demonstrate knowledge of hospitality and tourism management (e.g., no-shows, overbooking).	
1211.02	Apply customer service techniques in a hospitality and tourism context.	
1211.03	Identify elements of geography and climate that affect the hospitality and tourism industry.	

Travel and Tourism Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1211.04	Apply information about world time zones, regional/seasonal climate, etc. in creating/enhancing travel.	
1211.05	Apply knowledge of human diversity in creating or enhancing travel.	
1211.06	Demonstrate an understanding of common tourism terminology in creating or enhancing travel.	
1211.07	Apply knowledge of diverse transportation, lodging, cruise, food options regarding customized travel.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1211.08	Apply reading skills in a hospitality and tourism career environment.	
1211.09	Apply writing skills in a hospitality and tourism career environment.	
1211.10	Apply mathematical skills in a hospitality and tourism career environment.	
1211.11	Apply knowledge of economics in a hospitality and tourism career environment.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance

1211.12	Describe the relationship of roles and responsibilities among hospitality and tourism professionals.	
1211.13	Analyze impact on hospitality and tourism systems based on influences such as changes in technology, etc.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
1211.14	Apply appropriate laws, regulations, industry standards to hospitality and tourism situations.	

Safety, Health and Environmental		Complete
Content Skill Sets		Knowledge/ Performance
1211.15	Identify and practice appropriate safety and health procedures for hospitality and tourism occupations.	
1211.16	Demonstrate emergency and first-aid knowledge and procedures for hospitality and tourism occupations.	

Course Description: This course is designed to focus on “hands on” and academic activities geared toward management opportunities and skills in the hospitality industry. The coursework will provide the student with an overview of industry and will also provide competencies for successful performance in leadership and management skills in the Travel and Tourism. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

West Virginia Standards

Recreation, Theme Parks, and Clubs

Complete

Content Skill Sets		Knowledge / Performance
1212.01	Examine various departments of clubs.	
1212.02	Outline the club management structure.	
1212.03	Research the management of a leadership model.	
1212.04	Create the organizational chart of a club.	
1212.05	Outline different types of noncommercial recreation.	
1212.06	Present on a government-sponsored recreation area.	
1212.07	Research the current trends in recreation, theme parks and clubs.	

Gaming Entertainment

Complete

Content Skill Sets		Knowledge / Performance
1212.08	Outline the background of the gaming industry.	
1212.09	Research the expansion of gaming in North America.	
1212.10	Research a presentation of one of the industry giants in the gaming industry.	

Meetings, Conventions and Expositions

Complete

Content Skill Sets		Knowledge / Performance
1212.11	Explain the different types of popular meetings.	
1212.12	Research a local convention and visitor’s bureau to determine its makeup.	
1212.13	Outline the makeup different types of meetings, conventions and expositions.	
1212.14	Outline the steps that go into meeting planning.	
1212.15	Examine various venues for meetings, conventions and expositions.	
1212.16	Research the current trends in the meeting, convention and exposition facet of the hospitality industry.	

1212.17	Explain the different types of popular meetings.	
---------	--	--

Special Events		Complete
Content Skill Sets		Knowledge / Performance
1212.18	Create a visual that defines special events.	
1212.19	Research the event planner career path.	
1212.20	Outline the event planning process.	
1212.21	Classify different types of special events.	

Management and Leadership		Complete
Content Skill Sets		Knowledge / Performance
1212.22	Chart the roles and skills needed to be a manager.	
1212.23	Role play ethical behavior situations in the hospitality industry.	
1212.24	Outline the dynamics of demand on managers in hospitality.	

Hospitality Marketing		Complete
Content Skill Sets		Knowledge / Performance
1212.25	Explain marketing segmentation.	
1212.26	Research positioning in the hospitality industry.	
1212.27	Differentiate types of marketing.	
1212.28	Examine the trends in hospitality marketing and sales.	
1212.29	Develop marketing strategies to address specific needs.	

Human Resources		Complete
Content Skill Sets		Knowledge / Performance
1212.30	Create a checklist of the elements that are important in an appropriate job description.	
1212.31	Chart the major topics in recruitment.	
1212.32	Research the selection and orientation process.	
1212.33	Outline the various components of employee assistance programs.	

Accounting, Finance and Cost Control		Complete
Content Skill Sets		Knowledge / Performance
1212.34	Answer questions from different financial records.	
1212.35	Outline cash flow in the hospitality industry.	
1212.36	Research ways to control costs in the hospitality industry.	

Course Description: This course is designed to explore the leisure behavior of the individual, encompassing physical fitness, relaxation, social interaction and creativity. Included is the investigation of the influences of leisure from a social, psychological and theoretical perspective. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Leisure Education		Complete
Content Skill Sets		Knowledge / Performance
1221.1	Examine the benefits of leisure planning and goal setting	
1221.2	Examine time management principles	
1221.3	Research the use of leisure as a category of time	
1221.4	Research recreation patterns of behavior	

Guiding Leisure Activities		Complete
Content Skill Sets		Knowledge / Performance
1221.5	Plan appropriate expeditions, instruction, and commentary	
1221.6	Conduct field trips to point out scientific, historic, and natural features of parks, forests, historic sites or other attractions	
1221.7	Prepare and present illustrated lectures and interpretive talks about park features	
1221.8	Assist with operations of general facilities, such as visitor centers	

Parks, Forests, Historic Sites		Complete
Content Skill Sets		Knowledge / Performance
1221.9	Research various topics, including site history, environmental conditions, and clients' skills and abilities	
1221.10	Organize, lead, and promote interest in recreational activities such as arts, crafts, sports, games, camping, and hobbies	
1221.11	Greet new arrivals to activities, introducing them to other participants	
1221.12	Explain facility rules	
1221.13	Encourage guest participation	

Course Description: This course will present a broad view of one of the top industries for the 21st century. In this course students will explore the world of recreation and leisure and the opportunities that exist for an exciting career. This course will provide the ‘big picture’ of this diverse profession. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Creating the Foundations of Recreation and Leisure		Complete
Content Skill Sets		Knowledge / Performance
1222.1	Identify the unique qualities and opportunities afforded by this professional field	
1222.2	Identify and explain the historical development of recreation and leisure from historical societies to present day patterns in the United States	
1222.3	Identify government and professional organizations and how they impacted the development of recreation and leisure in the United States	
1222.4	Differentiate between philosophy and ethics, utilizing these traits to clarify leisure values	
1222.5	Develop personal ethics regarding recreation and leisure, and then be able to apply them to the decision-making process	
1222.6	Differentiate between philosophy and ethics - utilizing these traits to evaluate the worthiness of leisure services	
1222.7	Demonstrate how recreation and leisure affects and is affected by society	
1222.8	Explain how gender, ethnicity, race, religion, socioeconomic class affect recreation and leisure - and how recreation and leisure in turn affect these factors	

Discovering Leisure and Recreation as a Delivery System		Complete
Content Skill Sets		Knowledge / Performance
1222.9	Develop a knowledge of the differences between the different levels of parks, including the agencies that run them and their management plans	
1222.10	Communicate the differences between preservation, wilderness, conservation, multiple use and wise use of natural resources and parks	
1222.11	Explain the different types of commercial recreation	
1222.12	Describe the leisure industry model and note examples in each category	
1222.13	Define tourists and understand the different reasons for travel	
1222.14	Clearly identify career opportunities in commercial recreation and tourism	
1222.15	Articulate the challenges and trends in the leisure industry	

1222.16	Describe what makes a business successful and why some businesses fail	
1222.17	Describe the development characteristics for each life stage that are most relevant to the design and delivery of leisure and recreation services	
1222.18	Explore and explain how developmental characteristics affect leisure and recreation programs	

Investigate Recreation and Service Areas		Complete
Content Skill Sets		Knowledge / Performance
1222.19	Investigate career paths that the field of recreation offers	
1222.20	Explain program planning within the field of recreation	
1222.21	Discuss the variety of leisure activities that recreation can offer to its participants	
1222.22	Elaborate on the foundation of recreational sports management	
1222.23	List the broad scope of recreational sports activities and events	
1222.24	List career opportunities in recreational sports management	
1222.25	Recognize the shift in the medical world from treatment to prevention	
1222.26	Identify the current and emerging roles for parks and recreation related to health	
1222.27	Explain the important role that the environment plays in health lifestyles	
1222.28	State the importance of parks and recreation to the coming health crisis	
1222.29	Provide an overview of, and summarize the history of outdoor recreation in the United States	
1222.30	Describe the social, economic, psychological, and cultural importance of outdoor recreation	
1222.31	Identify the organizations related to and careers available in outdoor recreation	
1222.32	Identify the organizations related to and careers available in outdoor recreation	
1222.33	Define the criteria that is used to characterize a professional	
1222.34	Identify factors limiting public recognition of the value of recreation and leisure services	
1222.35	Differentiate between accreditation and certification	
1222.36	Discuss the purpose of a code of ethics and its value to the leisure service profession	

Course Description: This course is designed to present foundational principles of Public Safety Leadership, including how public safety leaders protect a democratic society; public policy issues such as crime and justice; history, organization, and functions of components of public safety, including the criminal justice system; and the issues and challenges relating to the administration of justice in a culturally diverse society. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real-world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Crime Scene Management		Complete
Content Skill Sets		Knowledge/ Performance
1225.01	Exhibit understanding of proper evidence collection practices.	
1225.02	Exhibit knowledge of scientific principles involved in crime scene management.	
1225.03	Including proper evidence preservation practices.	
1225.04	Exhibit understanding of initial crime scene management.	
1225.05	Identify and perform crime scene processing (e.g., crime scene search patterns, measurement, photography, latent print techniques).	

Use of Force		Complete
Content Skill Sets		Knowledge/ Performance
1225.06	Identify and understand the use of force options.	
1225.07	Exhibit knowledge and understanding of civil and criminal liability.	
1225.08	Identify relevant case law that applies to the use of force.	
1225.09	Define the difference between less-than-lethal force and deadly force.	
1225.10	Identify less-than-lethal weapons and techniques.	
1225.11	Describe knowledge of basic firearm safety.	

Criminal Law and Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1225.12	Display knowledge of significant case laws (e.g., Terry v. Ohio, Carroll v. United States)	
1225.13	Identify key constitutional amendments (e.g., search and seizure)	
1225.14	Display a knowledge of branches of government.	
1225.15	Describe search and arrest procedures (e.g., probable cause).	
1225.16	Define types, categories, and classes of crimes.	

1225.17	Exhibit knowledge of differences between criminal and civil law.	
---------	--	--

Court System		Complete
Content Skill Sets		Knowledge/ Performance
1225.18	Describe the difference between a search warrant and an arrest warrant.	
1225.19	Display understanding of the different levels of federal courts.	
1225.20	Describe appropriate professional courtroom testimony and demeanor.	
1225.21	Exhibit knowledge of trial and court procedures (e.g., courtroom terminology, personnel).	
1225.22	Exhibit knowledge of the juvenile justice system.	

Health and Safety		Complete
Content Skill Sets		Knowledge/ Performance
1225.23	Exhibit knowledge of universal precautions.	
1225.24	Demonstrate knowledge of CPR, first aid, and emergency medical care.	
1225.25	Identify hazardous materials, proper response, and scene management.	

Police Concepts and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1225.26	Describe proper traffic stop techniques.	
1225.27	Describe proper handcuffing techniques.	
1225.28	Identify appropriate search procedures for persons, structures, and vehicles.	
1225.29	Identify different types of patrol procedures and techniques.	
1225.30	Display knowledge of different types of investigation (e.g., property crimes).	
1225.31	Exhibit knowledge of proper interview and interrogation techniques.	
1225.32	Describe knowledge of fingerprinting and booking procedures.	
1225.33	Describe scene safety techniques for officer response (e.g., domestic dispute).	
1225.34	Describe scene safety techniques at motor vehicle crash sites.	
1225.35	Describe characteristics of individuals operating a vehicle while impaired.	
1225.36	Display knowledge of professional ethics and conduct.	
1225.37	Exhibit knowledge of the history of policing.	

Corrections		Complete
Content Skill Sets		Knowledge/ Performance
1225.38	Identify corrections concepts, methods, and history (e.g., recidivism).	
1225.39	Identify various types, security levels, and classifications of correctional institutions.	
1225.40	Understand the methods and history of capital punishment.	
1225.41	Display knowledge of intake procedures.	
1225.42	Understand early release and diversionary programs (e.g., parole, probation).	

Communication		Complete
Content Skill Sets		Knowledge/ Performance
1225.43	Exhibit knowledge of accurate report writing and field notes.	
1225.44	Display knowledge of interpersonal communication techniques (e.g., non-verbal, verbal).	
1225.45	Demonstrate knowledge of proper de-escalation techniques.	
1225.46	Exhibit knowledge of effective community policing.	
1225.47	Display familiarity with law enforcement computer databases.	
1225.48	Exhibit knowledge of emerging police technology and social media.	
1225.49	Display knowledge of radio usage and procedures.	
1225.50	Describe the role of incident command (e.g., NIMS, transfer of command).	

Security: National, International, and Private		Complete
Content Skill Sets		Knowledge/ Performance
1225.51	Exhibit awareness of sources and types of domestic and international terrorism.	
1225.52	Exhibit knowledge of private security and property protection.	
1225.53	Identify and understand different types of criminal organizations.	

West Virginia Standards

Understand and Work with Special Populations		Complete
Content Skill Sets		Knowledge/ Performance
1225.54	Display an understanding of cultural diversity (e.g., racial profiling)	
1225.55	Exhibit appropriate methods of interacting with persons with mental health disabilities.	
1225.56	Identify crisis resources for persons with unique needs (e.g., victim advocates).	

Course Description: This course is designed to examine the philosophical issues and applications of the objectives and processes of Public Safety Leadership, including; Constitutional limitations; accountability; civil liability; criminal investigation; criminal procedure; and forensics. By examining societal and psychological stressors that contribute to behavior, students will examine a variety of 10 serious offenses and apply concepts of profiling, behavioral analysis, and threat assessment within an ethical paradigm. Students will analyze and critique the system of dealing with convicted persons and the long-term implications of corrections policy. The principles and procedures used in a criminal investigation will be introduced. Procedures for implementing criminal law, such as the Incorporation Doctrine, search and seizure, warrant requirements, arrest, the right to counsel, interrogation, identification procedures, entrapment, cruel and unusual punishment, etc. will be discussed. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of the student organization SkillsUSA. Teachers should provide each student with real-world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Police Concepts and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1226.01	Describe proper traffic stop techniques.	
1226.02	Describe proper handcuffing techniques.	
1226.03	Identify appropriate search procedures for persons, structures, and vehicles.	
1226.04	Identify different types of patrol procedures and techniques.	
1226.05	Display knowledge of different types of investigation (e.g., property crimes).	
1226.06	Exhibit knowledge of proper interview and interrogation techniques.	
1226.07	Describe knowledge of fingerprinting and booking procedures.	
1226.08	Describe scene safety techniques for officer response (e.g., domestic dispute).	
1226.08	Describe scene safety techniques at motor vehicle crash sites.	
1226.09	Describe characteristics of individuals operating a vehicle while impaired.	
1226.10	Display knowledge of professional ethics and conduct.	
1226.11	Exhibit knowledge of the history of policing.	

Corrections		Complete
Content Skill Sets		Knowledge/ Performance
1226.12	Identify corrections concepts, methods, and history (e.g., recidivism).	
1226.13	Identify various types, security levels, and classifications of correctional institutions.	
1226.14	Understand methods and history of capital punishment.	
1226.15	Display knowledge of intake procedures.	

1226.16	Understand early release and diversionary programs (e.g., parole, probation).	
---------	---	--

Understand and Work with Special Populations		Complete
Content Skill Sets		Knowledge/ Performance
1226.17	Display an understanding of cultural diversity (e.g., racial profiling)	
1226.18	Exhibit appropriate methods of interacting with persons with mental health disabilities.	
1226.19	Identify crisis resources for persons with unique needs (e.g., victim advocates).	

West Virginia Standards

Professional Practices & Standards of Public Safety		Complete
Content Skill Sets		Knowledge/ Performance
1226.07	Discuss the origins of the concept of justice and its components.	
1226.08	Examine theories of moral development and behavior.	
1226.09	Examine types of corruption in various settings.	
1226.10	Analyze and evaluate ethical decision-making opportunities in law and public safety.	
1226.11	Discuss strategies for resolving ethical dilemmas.	
1226.12	Explain the elements of ethical leadership.	
1226.13	Discuss the issues relating to the ethical practice of law and public safety.	
1226.14	Explore the use of the Bureau of Justice Statistics and other databases to support best practices.	
1226.15	Professional organizations and their resources, such as standards, advocacy efforts, etc.	
1226.16	Describe the characteristics of ethical systems relating to law and public safety.	
1226.17	Explain the concepts of moral and legal culpability.	
1226.18	Explain the differences between formal ethics and personal values.	
1226.19	Describe ethical issues relating to various specializations within the field.	
1226.20	Articulate informed opinions about clear and consistent ethical decisions.	
1226.21	Demonstrate ethical methods for implementing policies and procedures discussed in Foundations of Public Safety Leadership.	

Course Description: This course is designed to focus on leadership and management in the hospitality industry. Students will gain knowledge and skills in travel, tourism, attractions, leadership, marketing, and entrepreneurship. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Notes: This program of study uses materials and resources that are proprietary. A link to the secondary hospitality and tourism program developed by the American Hotel and Lodging Association – Educational Institution is found at <https://www.ahlei.org/academic/high-school/hospitality-and-tourism-management-program/>.

Meetings, Conventions, and Special Events		Complete
Content Skill Sets		Knowledge / Performance
1240.1	Explain the importance of meetings, conventions, and special events to the hospitality and tourism industry.	
1240.2	Identify the career opportunities available in event management and skills and training required to work in each sector.	
1240.3	Describe the purposes and target audiences for various types of meetings and conventions.	
1240.4	Identify elements in planning special events, including themes, budgets, agendas, space and security needs, and schedules.	
1240.5	Identify the process for developing event schedules and programs.	
1240.6	Contrast the setups, facilities, equipment, and supplies required for various types of events.	
1240.7	Discuss the importance of maintaining relationships with stakeholders and vendors in planning and facilitating events.	

Banquets and Catering		
Content Skill Sets		
1240.8	Describe the role of banquets and catering in a hospitality operation.	
1240.9	Identify the duties and responsibilities of positions in the banquet and catering department.	
1240.10	List the duties and responsibilities of the banquet manager.	
1240.11	Explain how banquets are booked.	
1240.12	Summarize how banquet and catering operations prepare to provide service during an event.	
1240.13	Describe how banquet managers and staff deliver effective service during an event.	
1240.14	Describe the types of controls that banquet managers must practice.	

Travel		
Content Skill Sets		
1240.15	List the various modes of transportation that apply to the tourism industry.	

1240.16	Describe the purpose and operation of various travel systems and authorities, including the Federal Aviation Administration, the Transportation Security Administration, and major centralized reservation system.
1240.17	Describe the types of documents required for domestic and international travel.
1240.18	Describe different methods of booking travel.

Tourism

Content Skill Sets

1240.19	Identify and define different forms of tourism.
1240.20	Assess how geography, seasonality, culture, and politics affect travel and tourism.
1240.21	Identify personal factors that might influence a traveler to select a travel destination.
1240.22	Analyze the large- and small-scale economic, social, and environmental impacts of travel and tourism.
1240.23	Define destination marketing organizations (DMOs) and explain their functions.

Attractions

Content Skill Sets

1240.24	Define attractions and explain how the attraction sector intersects with the hospitality and tourism industry.
1240.25	List and describe different types of attractions.
1240.26	Explain the importance of adequate infrastructure at attractions.
1240.27	Describe safety and security issues at attractions.
1240.28	Identify career opportunities at attractions.
1240.29	Explain the organizational structure of attractions.

Resorts, Clubs, and Entertainment

Content Skill Sets

1240.30	Identify the types of resources and the target markets for each.
1240.31	Describe the characteristics of resorts, including the types of amenities offered.
1240.32	Distinguish between different types of clubs and their purposes.
1240.33	Explain the key aspects of club management.
1240.34	Describe the size and scope of the gaming industry and its impacts on local economies.
1240.35	Identify the types of career opportunities available in gaming.
1240.36	Give examples of regulations that affect the casino industry.

Cruise Industry

Content Skill Sets

1240.37	Identify the role of cruise ships in the hospitality and tourism industry, the types of ships, and the target market for each type.
1240.38	Explain standard and add-on amenities available both on and off cruise ships.
1240.39	Assess the impact of the cruise industry on the economy in cities with ports of call.

1240.40	Identify the career opportunities available and the necessary training required to work in the cruise industry.
1240.41	Explain the labor laws and staffing concerns unique to the cruise industry.
1240.42	Describe the legal concerns that affect operations in the cruise industry.
1240.43	Assess the impact of the cruise industry on the environment.

Effective Leadership

Content Skill Sets

1240.44	Identify key management styles and the most appropriate times to use each style.
1240.45	Explain how cultural norms, etiquette, and processes may differ depending on the market the business serves.
1240.46	Identify traits and behaviors of effective leaders.
1240.47	Explain the purpose of a management or leadership role in operations.
1240.48	Define standard operating procedures and explain how they are used by managers.
1240.49	Describe how to manage employee goals, development plans, and employee engagement.
1240.50	Explain how an organization's vision, mission, and values impact company culture.
1240.51	Define the role of human resources in a hospitality and tourism organizations.
1240.52	Identify the employment laws that impact the hospitality and tourism industry.

Entrepreneurship

Content Skill Sets

1240.	Define entrepreneurship and describe how it drives the hospitality and tourism industry.
1240.	Identify the traits and behaviors associated with successful entrepreneurial performances.
1240.	Identify the key economic principles and concepts that impact running a business.
1240.	Identify key steps for setting up and funding new businesses.
1240.	List the steps in creating a business plan.
1240.	Explain the purpose of developing a brand for an organization.
1240.	Describe the role of public relations in managing the brand.
1240.	Identify resources for entrepreneurs

Sales and Marketing

Content Skill Sets

1240.	Define marketing and its role in a hospitality organization.
1240.	Identify the duties and responsibilities of positions in the marketing departments.
1240.	Identify the marketing activities used in the hospitality and tourism industry.
1240.	Define demographic, psychographic, geographic, and behavioral segmentation, and explain how these concepts are used in a marketing operation.
1240.	Identify the purpose of analyzing market segments when building a marketing plan, strategy, and message.
1240.	Explain the role of sales in the hospitality and tourism industry.
1240.	Identify the duties and responsibilities of positions in the sales department.

1240.	Identify the key objectives and activities of a hospitality and tourism sales department.
1240.	Define prospecting and give examples of how the sales team finds new business.
1240.	Identify sales segments within hospitality and tourism.

Financial Management

Content Skill Sets

1240.	Distinguish between a revenue center and a cost center.
1240.	Define KPI and give examples of KPIs in lodging, food service, events, cruise ships, and travel.
1240.	Define revenue management.
1240.	Explain how forecasting is used to determine the pricing in the hospitality industry.
1240.	Define the STR report and explain how it is used.
1240.	Identify the components of income statements and balance sheets.
1240.	Distinguish between operational and capital budgets.
1240.	Define cost analysis.

Course Description: This course is designed to focus on operations in the hospitality industry. Students will gain knowledge and skills in hotel & lodging customer service, front office, housekeeping, food and beverage, safety and security. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Notes: This program of study uses materials and resources that are proprietary. A link to the secondary hospitality and tourism program developed by the American Hotel and Lodging Association – Educational Institution is found at <https://www.ahlei.org/academic/high-school/hospitality-and-tourism-management-program/>.

What is Hospitality?		Complete
Content Skill Sets		Knowledge / Performance
1241.1	Define hospitality.	
1241.2	Describe the origins of the hospitality and tourism industry and explain how it has changed over time.	
1241.3	Describe the size and scope of the hospitality and tourism industry and its role as a major employer.	
1241.4	Explain the impact of the hospitality and tourism industry on global, national, and state economies.	
1241.5	Identify the sectors of the hospitality and tourism industry and the types of businesses operating in each sector.	
1241.6	Explain how businesses in various hospitality and tourism sectors depend on one another for success.	
1241.7	Differentiate between franchises, independent businesses, and managed businesses.	
1241.8	Assess how technology and automation are changing the hospitality and tourism industry.	

Careers in Hospitality and Tourism		Complete
Content Skill Sets		Knowledge / Performance
1241.9	List the characteristics of careers in the hospitality and tourism industry.	
1241.10	Identify the types of careers in the hospitality and tourism industry.	
1241.11	Explain the various career paths in the hospitality and tourism industry.	
1241.12	Explain the purpose of and benefits offered by professional associations.	
1241.13	Categorize the types of leadership roles in the hospitality and tourism industry.	
1241.14	Identify steps in the job application process.	
1241.15	Describe how to excel in the job interview process.	

Welcoming Guests		Complete
Content Skill Sets		Knowledge / Performance
1241.16	Analyze guests' wants and needs in order to meet and exceed their expectations.	
1241.17	Define emotional intelligence and explain its role in interactions with guests.	
1241.18	Describe the life cycle of a service encounter.	
1241.19	Describe the elements of exceptional guest service.	
1241.20	Identify ways technology allows hospitality and tourism operations to deliver exceptional service.	
1241.21	Describe how employee empowerment contributes to effective guest service.	
1241.22	Explain how to provide effective guest service recovery.	
1241.23	Explain the relationship between guest satisfaction and profitability.	
1241.24	Identify the purpose of reputation management.	

Workplace Skills and Expectations		Complete
Content Skill Sets		Knowledge / Performance
1241.25	Explain the importance of appropriate workplace etiquette.	
1241.26	Identify skills an employee needs to be successful in the hospitality and tourism industry.	
1241.27	Explain the importance of teamwork in the workplace.	
1241.28	Explain the value of clear communication in the workplace.	
1241.29	Define and apply active listening skills.	
1241.30	Describe the challenges and opportunities in welcoming diverse guests.	
1241.31	Explain the need to respect and value all guests and coworkers in the hospitality and tourism industry.	

Introduction to the Lodging Industry		Complete
Content Skill Sets		Knowledge / Performance
1241.32	Identify the classifications of hotels by type of service, location, target markets, and ownership.	
1241.33	Explain the rating systems used for lodging properties.	
1241.34	Outline the responsibilities of key departments in a lodging property.	
1241.35	Identify key leadership positions in a lodging property and their duties and responsibilities.	

The Front Office		Complete
Content Skill Sets		Knowledge / Performance
1241.36	Use organizational charts of lodging properties to identify where the front office fits in various-sized properties.	
1241.37	Identify the duties and responsibilities of positions in the front office.	

1241.38	Identify the functions of computer reservation systems used in the hospitality and tourism industry.	
1241.39	Identify the duties and responsibilities of the front office manager.	
1241.40	Explain the important role the front office plays in sales.	
1241.41	Describe the role of the front office in protecting guest privacy.	
1241.42	Identify the duties and responsibilities of the night auditor.	
1241.43	Calculate occupancy percentage (Occ), average daily rate (ADR), and revenue per available room (RevPAR).	

Housekeeping		Complete
Content Skill Sets		Knowledge / Performance
1241.44	Identify the duties and responsibilities of positions in the housekeeping department.	
1241.45	Identify the duties and responsibilities of the executive housekeeper.	
1241.46	Explain how the executive housekeeper applies productivity standards to housekeeping positions.	
1241.47	Explain the housekeeping department's impact on the property's operational budget.	
1241.48	Define par levels and explain how linen is stored, issues, and tracked.	
1241.49	Explain the role housekeeping associates play in the guest experience.	
1241.50	Describe the role of the housekeeping department in securing guest belongings and maintaining the lost and found process.	
1241.51	Identify common green practices used by the housekeeping department.	

Engineering		Complete
Content Skill Sets		Knowledge / Performance
1241.52	Identify the duties and responsibilities of positions in the engineering department.	
1241.53	Identify the duties and responsibilities of the chief engineer.	
1241.54	Explain the importance of a well-maintained property.	
1241.55	Describe the types of maintenance performed by the engineering department, including preventive maintenance, routine maintenance, and manufacturer-recommended maintenance.	
1241.56	Identify the process for reporting maintenance issues and completing and tracking repairs.	
1241.57	Identify how the engineering department implements green initiatives.	
1241.58	Describe common emergency systems and their associated maintenance procedures.	

Safety and Security		Complete
Content Skill Sets		Knowledge / Performance
1241.59	Identify the legal rights and responsibilities of guests and the lodging property under innkeeper laws.	
1241.60	Identify the duties and responsibilities of positions in the security department.	
1241.61	Identify the role that all property employees play in the security of the property.	

1241.62	Identify the duties and responsibilities of the security manager or director of security.	
1241.63	Describe the role of security in maintaining control over both metal and electronic key systems.	
1241.64	Explain how surveillance and access control measures are used to protect guests and assets.	
1241.65	Describe how technological solutions are used to minimize security issues.	
1241.66	Describe the security team's role in managing the types of emergencies common during daily operations.	
1241.67	Explain the purpose of the emergency response plan and how it is used in emergency situations.	

The Restaurant Business		Complete
Content Skill Sets		Knowledge / Performance
1241.68	Identify the segments of the food and beverage industry and list their characteristics.	
1241.69	Outline the responsibilities of key departments in a food and beverage operation.	
1241.70	Describe how restaurants attract and retain staff.	
1241.71	Identify various foodservice outlets that may be part of a lodging operation.	
1241.72	Describe the functions of the room service department.	
1241.73	Explain the factors that contribute to an exceptional food or beverage product experience.	
1241.74	Explain the importance of standardized recipes in food production.	
1241.75	List the steps in menu planning.	
1241.76	Explain the importance of standardized recipes in food production.	

Pricing and Profitability		Complete
Content Skill Sets		Knowledge / Performance
1241.77	Explain the need for financial control for labor costs, food costs, menu pricing, and cash control.	
1241.78	Describe the process of purchasing, receiving, storing, issuing, and controlling supplies and equipment.	
1241.79	Explain the purpose of labor and revenue control in a food and beverage operation.	
1241.80	Explain how food and beverage operations forecast sales.	
1241.81	Identify the components of a profit and loss statement, emphasizing food and labor costs.	
1241.82	Evaluate the impact of the guest's perception of value on profit and loss.	

Food Safety and Sanitation		Complete
Content Skill Sets		Knowledge / Performance
1241.83	Define foodborne illness.	
1241.84	Identify the most common sources of foodborne illnesses.	
1241.85	Identify how to prevent food handlers from contaminating food.	
1241.86	Differentiate between cleaning and sanitizing.	

1241.87	Define HACCP.	
1241.88	Explain the role of Occupational Safety and Health Administration (OSHA) regulations.	
1241.89	Identify practices that promote a safe work environment.	
1241.90	Identify the workplace safety responsibilities of a manager.	

Responsible Food and Beverage Service		Complete
Content Skill Sets		Knowledge / Performance
1241.91	Identify common green practices used by food and beverage operations.	
1241.92	Assess how sustainable practices impact profitability.	
1241.93	Explain how food and beverage operations are incorporating healthier food options and sustainable foods.	
1241.94	Describe how to prepare for and serve guests with food allergens.	
1241.95	Define dram shop laws and third-party liability.	
1241.96	Identify the legal responsibilities of beverage service providers.	
1241.97	Explain the risks and responsibilities of handling guests' personal data.	

Course Description: Introduction to Education and the Classroom explores teaching as a career. Students are introduced to the basic knowledge and skills needed to be an effective educator. They will investigate the roles and responsibilities of an educator, issues related to school and community, and the importance of developing a positive and inclusive culture in the classroom and throughout the school.

Introduction: A Career in Education		Complete
Content Skill Sets		Knowledge/ Performance
1306.1	Investigate career paths and college choice through the CFVW website.	
1306.2	Recognize the importance of being a reflective practitioner.	
1306.3	Develop a working definition of education.	
1306.4	Construct an initial philosophy of teaching	
1306.5	Research different education career paths.	
1306.6	Compare education degrees across West Virginia.	
1306.7	Explore the testing and licensure guidelines for West Virginia educators.	
1306.8	Determine what skills are needed to be an effective educator.	
1306.9	Explore the process of becoming a National Board Certified Teacher	

Contextual Factors – Community and Schools		Complete
Content Skill Sets		Knowledge/ Performance
1306.10	Develop a definition of contextual factors.	
1306.11	Identify the contextual factors that have an influence on the learning process.	
1306.12	Participate in a panel discussion with education stakeholders to discuss school community issues.	
1306.13	Debate potential issues that occur in a school community.	
1306.14	Summarize findings of controversial issues in the school system.	
1306.15	Identify how climate and culture effect a school community.	
1306.16	Create a school climate survey.	
1306.17	Identify the roles that federal, state, and local governments have in education decision-making.	
1306.18	Investigate the role of government in alternative schooling.	
1306.19	Examine national and state standards	
1306.20	Identify the difference between standards and curriculum.	
1306.21	Study the West Virginia Professional Teaching Standards	
1306.22	Explain the effects socioeconomic status has on learning.	
1306.23	Investigate the requirements included in ESSA and IDEA.	
1306.24	Define Title I and examine actions that occurred because of the additional funding.	

1306.25	Diagram a West Virginia map with the number of Title I schools and compare each region.	
1306.26	Examine Social Justice standards.	
1306.27	Produce a podcast focusing on a Social Justice issue.	
1306.28	Create a visual representation of racial and ethnic diversity nationally.	
1306.29	Track the racial and ethnic diversity across West Virginia.	
1306.30	Examine the statistics involved with English Language Learners across West Virginia.	
1306.31	Determine learning differences based on gender.	
1306.32	Discuss strategies to alleviate gender bias.	
1306.33	Identify requirements connected to the federal Title IX law.	
1306.34	Connect terms associated with equality vs. equity.	

Professionalism and Professional Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
1306.35	Review the requirements of the Family Education Rights and Privacy Act (FERPA).	
1306.36	Determine appropriate use of social media in the schools.	
1306.37	Research social media policies of counties in West Virginia.	
1306.38	Define terms associated with mandatory reporting.	
1306.39	Determine situations that must be reported by educators.	
1306.40	Examine the requirements of mandated reporting.	
1306.41	Summarize the responsibilities of educators to children with an IEP and 504.	
1306.42	Model effective communication techniques.	
1306.43	Describe the techniques used in conflict resolution.	
1306.44	Create an effective school-home communication toll.	
1306.45	Investigate available professional learning opportunities for West Virginia educators.	
1306.46	Construct an appropriate individual professional development plan.	
1306.47	Determine the essential parts of a lesson plan.	
1306.48	Identify differences between formative and summative assessment.	

Environment		Complete
Content Skill Sets		Knowledge/ Performance
1306.49	Identify all terms associated with universal precautions and bloodborne pathogens.	
1306.50	Demonstrate the importance of providing personal safety training.	
1306.51	Define bullying and cyberbullying.	
1306.52	Design an example of a classroom that demonstrates personal safety flaws.	
1306.53	Explain the connection between creative lesson design and student engagement.	
1306.54	Investigate the elements of an inclusive learning environment.	

1306.55	Develop an understanding of culturally responsive instructional materials.	
1306.56	Participate in a panel discussion on the importance of structured classrooms.	
1306.57	Generate a list of topics that effect the social and emotional safety of students in schools.	
1306.58	Discuss the importance of establishing rules and procedures in the classroom.	
1306.59	Reflect on effective classroom management strategies.	
1306.60	Examine strategies for establishing classroom expectations, rules and procedures, and daily routines.	
1306.61	Demonstrate knowledge of effective classroom structure and transitions.	
1306.62	Demonstrate understanding of foundational practices when developing effective behavior management plans.	
1306.63	Demonstrate understanding of the importance of teacher proximity.	
1306.64	Determine through observation where a teacher focuses his/her attention	
1306.65	Connect classroom examples to the importance of having a student-centered vs. teacher-center classroom.	
1306.66	Illustrate knowledge of effective and equitable questioning.	
1306.67	Determine through video examples teacher proximity, focus on students, and question equity.	

Pedagogy		Complete
Content Skill Sets		Knowledge/ Performance
1306.68	Demonstrate knowledge of the term pedagogy using examples.	
1306.69	Compare a pedagogy to content knowledge.	
1306.70	Develop a list of necessary teaching tools.	
1306.71	Communicate examples of motivation strategies with the use of the ARCS Instructional Design.	
1306.72	Develop a student interest survey.	
1306.73	Provide evidence of student engagement.	
1306.74	Investigate engagement strategies and create a digital resource library.	
1306.75	Construct a mock classroom with descriptions of set-up, preferred culture and climate.	
1306.76	Hypothesize a first-year classroom plan addressing culture and student needs.	

Preparing for a Career		Complete
Content Skill Sets		Knowledge/ Performance
1306.77	Produce an initial resume including all required components.	
1306.78	Develop an initial cover letter in preparation for interviews.	
1306.79	Prepare for a mock interview.	
1306.80	Examine the application process for jobs in the education field.	
1306.81	Role play interviews acting as both the interviewee and interviewer.	

Course Description: Introduction to Child Development will provide students with insight on how a student learns at each developmental level. Future educators need to understand what and how children learn at each level of development to provide appropriate content and pedagogy. Students will be introduced to psychological, behavioral, and social learning theories and theorists. They will investigate the characteristics of learners and illustrate examples of the developmental levels at each stage. A clinical experience is required as part of the course completion.

Research and Theory of Child Development		Complete
Content Skill Sets		Knowledge/ Performance
1307.1	Examine requirements and guidelines for a successful field experience.	
1307.2	Demonstrate understanding of appropriate use of social media.	
1307.3	Describe examples of acceptable professional actions and norms.	
1307.4	Analyze field experience observation form.	
1307.5	Review resources for Praxis preparation.	
1307.6	Define child development.	
1307.7	Design a lesson based on specific domain and periods of child development.	
1307.8	Explain schema and schema theory using examples.	
1307.9	Compare assimilation and accommodation to the schema.	
1307.10	Investigate Freud's Psychoanalytical Theory and Erikson's Psychosocial Theory.	
1307.11	Explain Erikson's stages of Social/Emotional Development.	
1307.12	Research and present an overview of behavioral learning theories.	
1307.13	Research and present an overview of social learning theories.	
1307.14	Summarize Piaget's stages of Cognitive Development.	
1307.15	Connect Piaget's stages of Cognitive Development to classroom examples.	
1307.16	Illustrate knowledge of Vygotsky's Sociocultural Theory.	
1307.17	Apply knowledge of Bowlby's Attachment Theory to classroom scenarios.	
1307.18	Demonstrate knowledge of Bandura's Social Learning Theory.	
1307.19	Connect Bronfenbrenner's Ecological Systems Theory to real-life examples.	
1307.20	Examine Gardner's Multiple Intelligences and connect their beliefs	
1307.21	Develop knowledge of Sternberg's Theory of Intelligences.	
1307.22	Create a fictional student and determine the level of intelligence based on Sternberg and Gardner's levels.	
1307.23	Prove understanding of levels of intelligences with evidence of a review game.	
1307.24	Complete assessments to determine which of the four modalities in the VARK model.	
1307.25	Disseminate information about each of the theories addressed in Unit 1 with the use of a Socratic Discussion.	

Genetics and Environment		Complete
Content Skill Sets		Knowledge/ Performance
1307.26	Demonstrate an understanding of the differences between hereditary versus environmental factors on child development.	
1307.27	Simulate genetic transmission from parents to their offspring using a model.	
1307.28	Inventory their personal inherited traits and compare them to the traits of their classmates.	
1307.29	Connect heredity and environmental factors to their effect on student learning.	
1307.30	Communicate the definition of chromosomal disorders and describe the cause of some common disorders.	
1307.31	Categorize terms/questions about Environmental Contexts on Development.	
1307.32	Examine the influence of culture on the development of a child and connect	
1307.33	Create a fictional character based on Maslow's Hierarchy of Needs.	
1307.34	Connect their knowledge of heredity versus environmental factors to Maslow's Hierarchy of Needs.	
1307.35	Summarize Unit 2 learning by composing a paper discussing their personal hereditary and environmental factors.	

Infancy to Toddler Childhood Development		Complete
Content Skill Sets		Knowledge/ Performance
1307.36	Describe the physical changes that occur in a child from infancy to toddler.	
1307.37	Identify the cognitive characteristics of children from infancy to toddler.	
1307.38	Connect cognitive development in infancy to toddler to social learning theories.	
1307.39	Understand the expectations during each stage of language development within the infant to toddler period.	
1307.40	Discover the sequence of fine and gross motor development in infancy through toddler years.	
1307.41	Identify the five stages of perception connecting their learning to infants and toddlers.	
1307.42	Connect the social learning theories of Erikson and Bowlby to the period of infancy to toddlers.	
1307.43	Recognize social-emotional milestones from infancy to toddler development.	
1307.44	Describe supports to develop social-emotional skills during infancy to toddler development.	
1307.45	Create a formative assessment to showcase evidence of their understanding of infant to toddler development.	

Early Childhood Development		Complete
Content Skill Sets		Knowledge/ Performance
1307.46	Identify the cognitive characteristics of children in early childhood.	
1307.47	Connect the social learning theories of Piaget and Vygotsky to early childhood development.	
1307.48	Understand what to expect during each stage of language development in early childhood.	
1307.49	Understand the expectations during each stage of language development within the early childhood period.	
1307.50	Acknowledge the milestones of motor development in early childhood.	
1307.51	Distinguish the difference between fine and gross motor skills in early childhood.	

1307.52	Connect Bandura's Social Learning Theory to the period of early childhood.	
1307.53	Define perceptual-motor development in early childhood.	
1307.54	Identify how children respond to the sensory stimuli in their environment in early childhood.	
1307.55	Link Erikson's Psychosocial Stage of Initiatives vs. Guilt to social-emotional development in early childhood.	
1307.56	Cite factors that influence changes in understanding and expressing emotion during early childhood.	
1307.57	Describe peer relations and self-concept in early childhood.	
1307.58	Create a formative assessment to showcase evidence of their understanding of early childhood development.	

Middle Childhood Development		Complete
Content Skill Sets		Knowledge/ Performance
1307.59	Describe the physical changes that occur during middle childhood.	
1307.60	Illustrate the cognitive characteristics of children in the middle childhood stage of development.	
1307.61	Connect cognitive development in middle childhood to Piaget's Concrete Operational stage.	
1307.62	Provide examples of cognitive milestones in middle childhood development.	
1307.63	Articulate facts about middle childhood language development, milestones, and address language disorders.	
1307.64	Illustrate their knowledge of fine and gross motor skills during middle childhood.	
1307.65	Describe perceptual development and sensory processing during middle childhood.	
1307.66	Connect Erikson's fourth stage of Industry versus Inferiority to social/emotional development in middle childhood.	
1307.67	Create a formative assessment to showcase evidence of their understanding of middle childhood development.	

Adolescent to Early Adulthood Development		Complete
Content Skill Sets		Knowledge/ Performance
1307.68	Describe physical changes that occur during the period of adolescence to early adulthood.	
1307.69	Summarize the biological components in adolescence to young adulthood.	
1307.70	Present concerns associated with health issues that can occur in adolescence to young adulthood.	
1307.71	Connect Piaget's Formal Operational stage to the cognitive characteristics in adolescence to early adulthood.	
1307.72	Illustrate the stages of language development in adolescence to early adulthood.	
1307.73	Analyze motor development in adolescence to early adulthood.	
1307.74	Determine suggestions for interventions if motor development delays in adolescence are present.	
1307.75	Learn how information processing develops during the stage of adolescence through early adulthood.	
1307.76	Define executive functioning.	
1307.77	Examine deficits in executive functioning that will affect an adolescent's ability to process information.	
1307.78	Connect Erickson's fifth stage of Psychosocial Development Identity vs. Role Confusion in adolescence.	
1307.79	Create formative assessment using evidence of their understanding of adolescence to early adulthood development.	

Connecting Child Development to the Classroom		Complete
Content Skill Sets		Knowledge/ Performance
1307.80	Explain Kohlberg's Theory of Moral Development using examples.	
1307.81	Reflect on personal experiences when faced with a moral dilemma.	
1307.82	Provide evidence of a moral dilemma using the examples of the Heinz dilemma.	
1307.83	Debate issues related to moral dilemmas.	
1307.84	Define the Big 5 Personality Traits, including the three components of each.	
1307.85	Describe Kohlberg's Theory of Gender Development.	
1307.86	Reflect on how gender is portrayed in the media.	
1307.87	Build knowledge of nutritional risks and healthy eating habits for children at different levels of development.	
1307.88	Examine the importance of play and physical activity in all areas of development.	
1307.89	Identify activities that can be used to promote mindfulness does emotional well-being.	
1307.90	Create a mindfulness activity to be used in a classroom.	
1307.91	Research and describe exceptionalities and the connection to the emotional well-being of students with exceptionalities.	
1307.92	Examine common childhood illnesses and begin to formulate a plan for recognizing and responding to illness.	

Course Wrap-Up		Complete
Content Skill Sets		Knowledge/ Performance
1307.93	Analyze the field experience observation forms in preparation for a panel discussion.	
1307.94	Describe the observations from field experiences in a panel discussion.	
1307.95	Compose a final course reflection journal entry focused on new learning.	
1307.96	Discuss progress made throughout the semester on the Praxis preparation.	

Course Description: Introduction to Educational Psychology will provide students with a deeper understanding of learning theories that can be applied to teaching and learning. Topics include intelligence, individual differences in learning, how people retrain new information, instructional approaches, student engagement and motivation, and assessment.

Course Introduction		Complete
Content Skill Sets		Knowledge/ Performance
1308.1	Consider the importance of being a reflective practitioner.	
1308.2	Establish professional expectations for field experience.	
1308.3	Analyze field experience observation form.	
1308.4	Review resources for Praxis preparation	
1308.5	Investigate career paths and college choices through the CFWV website.	
1308.6	Begin preparing for the Underwood-Smith Scholarship application process.	
1308.7	Develop an individual and group definition of learning.	
1308.8	Deepen their understanding of the five main learning theories.	
1308.9	Communicate new knowledge about the brain and intelligence using key words and phrases.	
1308.10	Compile a list of learning terms with definitions.	

Introduction to Educational Psychology		Complete
Content Skill Sets		Knowledge/ Performance
1308.11	Define Educational Psychology.	
1308.12	Compare cognitive and behavioral perspectives of Educational Psychology.	
1308.13	Examine the connection between Child Development and Educational Psychology.	
1308.14	Present the background and theories associated with famous researchers of Educational Psychology.	
1308.15	Communicate the components and elements involved in scientific research methods.	
1308.16	Construct a small-scale research project based on field experience data.	
1308.17	Explore the relevance of Educational Psychology to teaching and learning.	
1308.18	Examine the role of the teacher as a facilitator of learning.	
1308.19	Connect cognitive, social, and physical development to effective instruction.	
1308.20	Investigate the reasons behind teaching decisions and instructional approaches to learning.	
1308.21	Design instructional tasks to meet student levels of development and learning needs.	
1308.22	Connect theory and practice of Educational Psychology to classroom design and management.	
1308.23	Define digital fatigue and explore ways to address in the classroom.	

Behavioral Theories of Learning

Complete

Content Skill Sets

Knowledge/
Performance

1308.24	Review the specifics of behavioral theories of learning.	
1308.25	Define behavioral theories of learning.	
1308.26	Identify the theories that were integral in researching and developing behavioral learning theories.	
1308.27	Illustrate classroom management techniques to facilitate inclusive student behavior conversations.	
1308.28	Create lesson plan examples with a focus on the behavioral learning needs of all students.	
1308.29	Describe the connection of behavioral learning theories to assessment and instructional scaffolding.	
1308.30	Examine the behavioral learning needs of students with exceptionalities.	
1308.31	Investigate a variety of classroom design ideas with an emphasis on behavior needs.	

Cognitive Theories of Learning

Complete

Content Skill Sets

Knowledge/
Performance

1308.32	Review the specifics of cognitive theories of learning.	
1308.33	Define cognitive theories of learning.	
1308.34	Identify the theorists that were integral in researching and developing cognitive learning theories.	
1308.35	Compare the difference in beliefs between Cognitivism and Constructivism.	
1308.36	Consider classroom scenarios with a focus on the cognitive learning needs of the students.	
1308.37	Define information processing and memory.	
1308.38	Distinguish between differences in information processing and memory.	
1308.39	Develop lesson examples to provide students with opportunities to solve problems and experiment.	
1308.40	Present effective teaching methods that promote cognitive learning.	
1308.41	Describe the importance of cognitive learning theories to assessment and instructional scaffolding.	

Social/Emotional Theories of Learning

Complete

Content Skill Sets

Knowledge/
Performance

1308.42	Create a definition of social and emotional theories of learning and review the specifics of each theory.	
1308.43	Identify the theorists that were integral in researching and developing social learning theories.	
1308.44	Identify examples of classroom scenarios where the teacher will focus on social learning needs.	
1308.45	Identify examples of classroom scenarios where the teacher will focus on emotional learning needs.	
1308.46	Define emotional intelligence.	
1308.47	Describe the connection between emotional intelligence and classroom behavior.	
1308.48	Explain the connection between culturally responsive SEL practices and resiliency and a growth mindset.	
1308.49	Define Motivational Theory and provide examples of effective classroom practices.	

1308.50	Create lesson plan examples with a focus on the social/emotional learning needs of all students.	
1308.51	Describe the four types of assessments used to determine social/emotional learning.	
1308.52	Describe the purpose of assessing social/emotional learning and the effect it has on school climate, culture, student engagement, and behavior.	
1308.53	Reflect on the theories of learning presented and begin to develop a definition connecting the learning theories and their beliefs.	

Course Wrap-Up		Complete
Content Skill Sets		Knowledge/ Performance
1308.54	Analyze data collected from the field experience observations.	
1308.55	Develop and present findings from the action research project.	
1308.56	Prepare for the application process for the Underwood-Smith Scholarship.	
1308.57	Discuss progress made in preparation for the Praxis CASE Exam.	
1308.58	Use small group discussions to provide insight into the review of the CFWV website.	
1308.59	Reflect on their knowledge gained and adjust/update the philosophy of teaching.	

Course Description: Introduction to Social, Emotional, and Behavioral Wellness prepares educators to examine the social and emotional needs of students and how to address the non-academic barriers to learning. They will be introduced to the effects of trauma, adverse childhood experiences, and provided with effective classroom strategies to create a positive classroom environment. Activities will include insight into how to collaborate with families, agencies, and the community to provide multi-tiered systems of support.

Course Introduction		Complete
Content Skill Sets		Knowledge/ Performance
1309.1	Consider the importance of being a reflective practitioner.	
1309.2	Establish professional expectations for field experience.	
1309.3	Analyze field experience observation form.	
1309.4	Develop a plan for the final project using data from field experience observations.	
1309.5	Review resources for Praxis preparation.	
1309.6	Investigate career paths and college choices through the CFVW website.	
1309.7	Review the application requirements for the Underwood-Smith Scholarship.	
1309.8	Define Social, Emotional, and Behavioral Wellness.	
1309.9	Examine the importance of creating an effective Social, Emotional, and Behavioral Wellness environment.	
1309.10	Construct an understanding of SEL and Behavioral Wellness as it relates to educators.	
1309.11	Construct an understanding of SEL and Behavioral Wellness as it relates to students.	
1309.12	Examine five high-leverage practices to be used to promote a balanced and safe environment.	
1309.13	Describe the CASEL SEL Framework.	
1309.14	Analyze research findings that support positive outcomes of SEL and Behavioral Wellness programs.	
1309.15	Examine the positive outcomes of student wellness and achievement when there is an established school-family-community partnership.	
1309.16	Present evidence of the impact SEL and Behavioral Wellness has on school and classroom equity.	

Trauma and ACEs		Complete
Content Skill Sets		Knowledge/ Performance
1309.17	Generate a working definition of trauma based on current knowledge.	
1309.18	Compare their working definition of trauma with that of experts in the field.	
1309.19	Review the findings of the ACEs study and connect them to the impact on classrooms.	
1309.20	Define Counter ACEs and compare them to ACEs.	
1309.21	Examine how ACEs and Counter ACEs affect adult health.	
1309.22	Identify the state of the brain during traumatic events.	

1309.23	Investigate targeted interventions for children in trauma.	
1309.24	Model the concepts of a student “flipping their lid.”	
1309.25	Demonstrate an understanding of “what,” “why,” and “how” students flip their lid.	
1309.26	Define Emotional Dysregulation.	
1309.27	Recognize the symptoms that are related to dysregulation.	
1309.28	Recognize symptoms of stress in students.	
1309.29	Generate a list of interventions to prevent the escalation of stress to toxic stress.	
1309.30	Describe the impact trauma has on the foundations of learning, including memory, organization, executive functions, and comprehension.	
1309.31	Explain the issues related to poverty that influence brain development.	

Trauma-Related Behavior		Complete
Content Skill Sets		Knowledge/ Performance
1309.32	Recognize the different stages of behavior development, comparing it to child development to create an understanding of expected behaviors at different developmental stages.	
1309.33	Review research findings showing the impact of environmental stimuli on thinking and behavior.	
1309.34	Describe the body’s physical response of fight, flight, or freeze to threatening situations.	
1309.35	Recognize the stages of behavior escalation.	
1309.36	Describe appropriate actions that should occur during each stage of behavior escalation.	
1309.37	Define misbehavior vs. stress behavior.	
1309.38	Recognize what process should be taken by an educator when a child exhibits unwelcomed behaviors.	
1309.39	Recognize the difference between a “won’t” vs. “can’t” approach to behavior.	
1309.40	Investigate ways to reframe behavior based on mindsets, experiences, and language.	
1309.41	Demonstrate classroom strategies that establish routines for expected behaviors.	
1309.42	Recognize examples of specific and meaningful feedback to student behavior using scenarios.	
1309.43	Identify differences between positive and negative reinforcers.	
1309.44	Develop a list of positive reinforcement strategies.	
1309.45	Define and provide examples of prosocial behaviors.	
1309.46	Define empathy and describe the important role empathy plays in establishing relationships.	
1309.47	Examine the concept of resiliency and generate ideas for building resilience in students.	
1309.48	Explain the importance of self-care for students.	
1309.49	Describe a plan for teaching self-care to students in elementary, middle, and high school.	

Trauma-Informed Schools		Complete
Content Skill Sets		Knowledge/ Performance
1309.50	Identify indicators of successful schoolwide SEL implementation.	

1309.51	Examine a holistic approach to behavior presentation in students.	
1309.52	Recognize appropriate supports to build skills responding to a variety of behavioral needs.	
1309.53	Develop appropriate responses to discipline in the classroom that support positive student behavior.	
1309.54	Compare the symptoms of ADHS vs. Trauma, identifying the differences and overlapping symptoms.	
1309.55	Investigate how specific family dynamics influence educational performances.	
1309.56	Describe strategies to improve communication between the school and all families, including grand families.	
1309.57	Identify a variety of difficult situations educators encounter in and out of the classroom.	
1309.58	Generate a list of ideas to resolve issues involving difficult people and situations.	
1309.59	Discover ways to teach interpersonal awareness and skills to develop a positive classroom culture.	
1309.60	Explore mental health first aid and examine ways to provide initial assistance when realizing a student is exhibiting signs of potential mental health issues.	
1309.61	Describe the Multi-Tiered System of Support (MTSS) framework and the role it plays in schools.	
1309.62	Clarify the key elements involved in the implementation of MTSS.	
1309.63	Illustrate what MTSS implementation looks like in early childhood.	
1309.64	Illustrate what MTSS implementation looks like at the elementary level.	
1309.65	Illustrate what MTSS implementation looks like in middle and high school.	
1309.66	Evaluate examples of data tracking measures at each tier of the MTSS framework.	

SEL and Behavior Best Practices		Complete
Content Skill Sets		Knowledge/ Performance
1309.67	Define zero tolerance and positive discipline and compare the research findings of each strategy.	
1309.68	Demonstrate strategies to teach self-regulation to students using classroom scenarios.	
1309.69	Demonstrate positive behavior and support strategies using vignettes.	
1309.70	Explain the strategy of Function-Based Thinking as an early intervention behavior strategy.	
1309.71	Discuss the differences between a formal Functional Behavior Assessment and the Function-Based Thinking strategy.	
1309.72	Investigate statistics regarding equity in discipline referrals and discuss alternatives to suspensions.	
1309.73	Generate a list of activities that teachers can use to create a safe and inclusive classroom environment.	
1309.74	Understand the importance of embedding engaging activities into instruction to promote SEL.	
1309.75	Examine the strategy of Optimistic Closure using intentional thinking about student work to make connections, identify next steps, and provide a sense of accomplishment.	
1309.76	Articulate ways to embed social-emotional language into everyday instruction and the classroom environment.	

Trauma and SEL Impact on the Educator		Complete
Content Skill Sets		Knowledge/ Performance
1309.77	Examine challenges teachers are faced with that cause stress inside and outside the classroom.	
1309.78	Examine the causes and signs of teacher burnout and describe the physical and emotional repercussions.	

1309.79	Examine the causes and signs of secondhand trauma and describe the physical and emotional responses.	
1309.80	Define and describe what causes toxic stress.	
1309.81	Develop a plan for a schoolwide approach to teacher wellness based on research and examples of successful implementation.	
1309.82	Recognize the benefits of collective teamwork when implementing SEL and MTSS.	
1309.83	Define teacher resilience and discuss ways to build the capacity in teachers.	
1309.84	Differentiate between empathy and sympathy and discuss ways to promote empathy throughout the teaching profession.	
1309.85	Demonstrate the importance of self-care for educators and produce a list of techniques used to foster well-being.	

College Preparation		Complete
Content Skill Sets		Knowledge/ Performance
1309.86	Organize and review all data collected during field experience observations.	
1309.87	Create a presentation based on the case study project determined at the beginning of the course.	
1309.88	Present the case study to their peers and complete a question-and-answer session following.	
1309.89	Complete a peer-review of the Underwood-Smith Scholarship application.	
1309.90	Discuss the progress made throughout the course in preparing for the Praxis CASE exam.	
1309.91	Complete a panel discussion to showcase progress in the CFVV website and share insights and ideas with their peers.	
1309.92	Revise their philosophy of teaching from their reflection journal and share the growth in their thinking about teaching.	

Course Description: This course is designed to focus on the various physical, cognitive, social, emotional, and moral development, environments and social institutions, family life, demographics, and culture influencing human growth and development. This course also provides information and activities for guiding behavior and meeting the needs of special age groups. This course includes organizational strategies and systems and use of appropriate resources and assessments to advance learning in a variety of organizational structures. Observation in an approved school setting is a part of this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the Educators Rising Career Technical Student Organization. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Health and Safety		Complete
Content Skill Sets		Knowledge/ Performance
1321.1	Identify safety hazards in and around the childcare setting.	
1321.2	Instruct children in personal safety awareness (e.g., stranger danger, fire safety).	
1321.3	Identify characteristics of common childhood illnesses.	
1321.4	Describe universal (standard) precautions and infection control.	
1321.5	Explain rest and relaxation techniques.	
1321.6	Plan, prepare, and explain the importance of nutritionally balanced meals and snacks.	
1321.7	Identify indicators and reporting procedures involving child abuse and neglect.	

Cognitive Development		Complete
Content Skill Sets		Knowledge/ Performance
1321.8	Explain cognitive development stages and how they correlate to social, emotional, and physical development.	
1321.9	Provide examples of cognitive development.	
1321.10	Describe equipment and activities that promote cognitive development.	
1321.11	Identify learning opportunities and conditions that develop creative and critical thinking.	
1321.12	Recognize the factors that impact brain development.	
1321.13	Identify important theories and research involving cognitive development.	

Language Development and Communication		Complete
Content Skill Sets		Knowledge/ Performance
1321.14	Describe the stages of language development.	
1321.15	Describe factors affecting language development.	

Physical Development		Complete
Content Skill Sets		Knowledge/ Performance
1321.16	Explain the stages of fine and gross motor development.	
1321.17	Recognize the factors that impact physical development.	
1321.18	Describe strategies and conditions that encourage physical development.	
1321.19	Select age-appropriate indoor and outdoor play equipment and activities for physical development.	
1321.20	Describe the effects of play on children's physical development.	
1321.21	Explain how physical development correlates to social, emotional, and cognitive development.	
1321.22	Construct purposeful play activities that support essential learning in an early childhood setting (WV Only).	

Social and Emotional Development		Complete
Content Skill Sets		Knowledge/ Performance
1321.23	Discuss teaching techniques that encourage the development of a positive self-concept.	
1321.24	Describe the stages of social and emotional development of children.	
1321.25	Recognize the factors that impact social and emotional development.	
1321.26	Discuss caregiving techniques that develop appropriate social skills.	
1321.27	Identify positive techniques for conflict resolution and mediation.	
1321.28	List strategies to promote self-help skills and autonomy.	

Positive Guidance Techniques and Reinforcement		Complete
Content Skill Sets		Knowledge/ Performance
1321.29	Demonstrate positive adult-child communication.	
1321.30	Describe positive classroom management.	
1321.31	Identify child guidance techniques.	

West Virginia Standards

Professional Practices		Complete
Content Skill Sets		Knowledge/ Performance
1321.32	Examine WVDE Policy 2520.15 and discuss curriculum requirements.	
1321.33	Discuss policies regarding employment in various child development settings, including WV public school systems, Head Start, and types of childcare centers/facilities/settings.	
1321.34	Analyze WV DHHR Legislative rules regulatory requirements for child day care centers, out-of-school time childcare	

	centers, family daycare facilities, and informal and relative family childcare home registration.	
1321.35	Describe components of WV ELSF Domain Areas.	
1321.36	Explain WV STARS.	
1321.37	Discuss the WV Infant and Toddler Professional Development Program for Caregivers.	
1321.38	Discuss WV Child Abuse and Neglect Laws, including WV Code 49-6A-2.	
1321.39	Examine the economic and other benefits of universal pre-k.	
1321.40	Review resources available regarding the care and education of children.	
1321.41	Discuss the child assessment system utilized in the pre-k or kindergarten class.	
1321.42	Utilize the knowledge gained from each domain of child development to describe a comprehensive approach to an early childhood program.	

Early Childhood Developmentally Appropriate Practices (DAP)		Complete
Content Skill Sets		Knowledge/ Performance
1321.43	Describe the fundamental principles of DAP as catalogued by the National Association for the Education of Young Children (NAYEC)	
1321.44	Encourage DAP independence in daily health and personal care routines	
1321.45	Describe developmentally appropriate safety practices such as danger symbols, rules for various settings and responses to potentially harmful situations	
1321.46	Communicate with children's parents or guardians about daily activities, behaviors, and related issues	
1321.47	Utilize the knowledge gained from each domain of child development to describe a comprehensive approach to an early childhood program	
1321.48	Correlate current West Virginia Content Standards and Objectives for preschool children to child development domains	
1321.49	Investigate work settings within Early Childhood Education and the application of DAP	

Learning Environments in an Early Childhood Setting		Complete
Content Skill Sets		Knowledge/ Performance
1321.50	Examine elements in program design such as décor, furnishings, visual cues, space, etc. in an early childhood setting	
1321.51	Describe the importance of aesthetics, flexibility, and organization to effective childhood settings	
1321.52	Describe visual cues that promote independence and decision making in early childhood	
1321.53	Examine recommendations for color, light, sound, ventilation, and temperature specific for early childhood	
1321.54	Analyze needs for safety, health and comfort and convenience in an early childhood setting	
1321.55	Develop activity center plans that address different developmental domains and accommodate varying numbers of children in early childhood	
1321.56	Identify warning signs for problematic physical environments in an early childhood setting	
1321.57	Observe for a minimum of five hours in an early childhood classroom.	

Course Description: This course is designed to focus on understanding how to facilitate activities that will promote learning within inclusive early childhood classrooms. The course provides information and activities on the the IEP Process, modifications, and accommodations for students with disabilities, school readiness, confidentiality, and family communications. Observation in an approved school setting is a part of this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the Educators Rising Career Technical Student Organization. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Community and Family Relationships		Complete
Content Skill Sets		Knowledge/ Performance
1322.1	Describe the importance of cooperative relationships with families.	
1322.2	Identify and plan methods of family and community involvement.	
1322.3	Describe the components of effective school and home communication.	
1322.4	Apply the definition of school readiness to authentic situations.	
1322.5	Evaluate the role of schools in supporting a comprehensive school readiness system.	

Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
1322.6	Identify career-related skills and employment opportunities.	
1322.7	Identify resources for professional development.	
1322.8	Recognize the need for self-assessment for continued professional growth.	
1322.9	Explain the role of a child advocate.	
1322.10	Identify the importance and legal mandates of confidentiality.	
1322.11	Exhibit appropriate characteristics in an educational team setting.	
1322.12	Identify research and current issues in the field of child development.	
1322.13	Apply the NAEYC Code of Ethical Conduct to professional practices.	

Classroom Organization and Arrangement		Complete
Content Skill Sets		Knowledge/ Performance
1322.14	Arrange an age-appropriate classroom environment.	
1322.15	Demonstrate awareness of licensing laws and regulations.	
1322.16	Observe for a minimum of five hours in an early childhood classroom. (WV Only)	

Diversity in the Classroom		Complete
Content Skill Sets		Knowledge/ Performance
1322.17	Identify components of a diverse, multicultural curriculum.	
1322.18	Display awareness of diversities in family structures.	
1322.19	Describe ways to incorporate children's home language and traditions.	

Inclusion of Children with Special Needs		Complete
Content Skill Sets		Knowledge/ Performance
1322.20	Identify characteristics of various types of exceptionalities.	
1322.21	Identify concerns and basic rights of children with special needs.	
1322.22	Differentiate the learning environment and curriculum to accommodate special needs.	

West Virginia Standards

Introduction to the IEP Process		Complete
Content Skill Sets		Knowledge/ Performance
1322.23	Consider multiple perspectives when planning for an Individualized Education Plan (IEP) meeting, during the IEP meeting, and while implementing the IEP.	
1322.24	Identify how inclusion can be supported through the IEP process with adaptations and modifications when needed.	

Course Description: This course is designed to focus on understanding how to facilitate developmentally appropriate activities that will promote an understanding of language and literacy learning for early childhood students in their classes. The course provides information and activities on language development, read aloud and storytelling, phonological awareness, and creating a functional print rich environment. Extensive observation and actual classroom teaching experience in an approved school setting is a part of this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the Educators Rising Career Technical Student Organization. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Language Development and Communication		Complete
Content Skill Sets		Knowledge/ Performance
1323.1	Describe strategies to encourage expressive and receptive language.	
1323.2	Identify materials that encourage and support literacy skills.	
1323.3	Demonstrate effective literacy strategies.	
1323.4	Describe various methods of story presentation.	

Observation, Documentation, and Assessment		Complete
Content Skill Sets		Knowledge/ Performance
1323.5	Identify observation purposes, techniques, and tools.	
1323.6	Observe and record children’s developmental learning.	
1323.7	Interpret, communicate, and apply observation results.	
1323.8	Identify various age-appropriate assessment methods.	
1323.9	Participate for a minimum of 70 field experience hours in an early childhood classroom. (WV Only)	

Classroom Organization and Arrangement		Complete
Content Skill Sets		Knowledge/ Performance
1323.10	Prepare and maintain materials and equipment storage.	
1323.11	Identify characteristics of a balanced daily schedule.	
1323.12	Implement developmentally appropriate activities.	
1323.13	Describe a variety of transition-time activities.	
1323.14	Identify recordkeeping and clerical functions in a childcare setting.	

Creativity		Complete
Content Skill Sets		Knowledge/ Performance
1323.15	Identify strategies for facilitating creative experiences.	
1323.16	Display or present creative products.	
1323.17	Identify appropriate materials and equipment that encourage creative development.	
1323.18	Explain sensory activities and supporting materials.	

West Virginia Standards

Science of Reading		Complete
Content Skill Sets		Knowledge/ Performance
1323.19	Describe the Science of Reading.	
1323.20	Explain the five pillars of reading.	
1320.21	Develop strategies to support the connection between reading, writing, and comprehension.	

Curriculum and Assessment for Early Childhood		Complete
Content Skill Sets		Knowledge/ Performance
1323.22	Construct purposeful play activities that support essential learning in an early childhood setting.	
1323.23	Discuss the child assessment system utilized in the pre-k or kindergarten class.	
1323.24	Describe how to develop an awareness of letters and words.	
1323.25	Outline the preschool learning to read and write processes.	

Read Aloud and Storytelling		Complete
Content Skill Sets		Knowledge/ Performance
1323.26	Demonstrate the handling and viewing of a book.	
1323.27	Apply knowledge of genres to book choice and presentation.	
1323.28	Collaborate with peers to develop strategies for presenting and exploring literature in early childhood.	
1323.29	Develop strategies for literacy performance, including oral reading and dramatic interpretation, and apply them to various genres.	
1323.30	Evaluate bias in children's literature and make decisions concerning book choice and presentation.	
1323.31	Identify literary elements in children's literature	

Early Learning Numeracy

Course #: 1324

Course Description: This course is designed to focus on understanding how to facilitate developmentally appropriate activities that will promote mathematical understandings for early childhood students in their classes. The course provides information and activities on counting and cardinality, shapes and space, and mathematical operations. This course also provides information on how to integrate mathematical habits of mind. Extensive observation and actual classroom teaching experience in an approved school setting is a part of this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the Educators Rising Career Technical Student Organization. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Observation, Documentation, and Assessment		Complete
Content Skill Sets		Knowledge/ Performance
1324.1	Identify observation purposes, techniques, and tools.	
1324.2	Observe and record children's developmental learning.	
1324.3	Interpret, communicate, and apply observation results.	
1324.4	Identify various age-appropriate assessment methods.	
1323.5	Participate for a minimum of 70 field experience hours in an early childhood classroom. (WV Only)	

Classroom Organization and Arrangement		Complete
Content Skill Sets		Knowledge/ Performance
1324.6	Prepare and maintain materials and equipment storage.	
1324.7	Identify characteristics of a balanced daily schedule.	
1324.8	Implement developmentally appropriate activities.	
1324.9	Describe a variety of transition-time activities.	
1324.10	Identify recordkeeping and clerical functions in a childcare setting.	

Curriculum and Assessment for Early Childhood		Complete
Content Skill Sets		Knowledge/ Performance
1324.11	Construct purposeful play activities that support essential learning in an early childhood setting.	
1324.12	Demonstrate the child assessment system utilized in the pre-k or kindergarten class.	

Basic Math Skills		Complete
Content Skill Sets		Knowledge/ Performance
1324.13	Develop number recognition techniques.	
1324.14	Explain the correlation of counting and cardinality.	
1324.15	Demonstrate basic math skills through play.	
1324.16	Identify strategies for recognizing and describing shapes and space.	
1324.17	Develop early learning addition and subtraction activities using objects.	
1324.18	Describe Mathematical Habits of Mind.	

Course Description: This course is designed to develop student understanding and skills in such areas as the basic principles, concepts, and practices of the accounting cycle. Journalizing, posting and analyzing of financial statements as well as banking and payroll procedures are included. The importance of ethics and confidentiality, as well as, an introduction to careers and types of business ownership are incorporated. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Basic Accounting Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1401.1	Exhibit understanding of terminology relating to accounting.	
1401.2	Exhibit understanding of careers in accounting.	
1401.3	Demonstrate ability to use calculator, 10-key, and compute.	
1401.4	Identify various business entities.	
1401.5	Determine classification of accounts and identify normal balances.	
1401.6	Generate and interpret spreadsheets, charts, and graphs.	

Journalizing		Complete
Content Skill Sets		Knowledge/ Performance
1401.7	Apply the accounting equation to journalize an opening entry.	
1401.8	Follow principles of double-entry bookkeeping in the journalizing process.	
1401.9	Analyze transactions involving owners' equity.	
1401.10	Apply the accounting equation to journalize an opening entry.	

Posting		Complete
Content Skill Sets		Knowledge/ Performance
1401.11	Post to general and subsidiary ledger accounts.	
1401.12	Demonstrate understanding of multicolumn ledger.	
1401.13	Demonstrate familiarity with computerized posting methods.	
1401.14	Use appropriate posting references.	
1401.15	Reconcile subsidiary to general ledgers.	

Cash and Banking Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1401.16	Demonstrate familiarity with online and electronic banking procedures.	
1401.17	Exhibit understanding of credit cards and/or debit cards.	
1401.18	Manage multiple bank accounts and transactions.	
1401.19	Reconcile and replenish petty cash funds.	

Identification and Application of Source Data		Complete
Content Skill Sets		Knowledge/ Performance
1401.20	Identify and locate appropriate business forms used in bookkeeping and/or accounting.	
1401.21	Apply procedures for using electronic data for various bookkeeping and/or accounting purposes.	
1401.22	Interpret and identify information contained in source documents.	

Completion of Accounting Cycle		Complete
Content Skill Sets		Knowledge/ Performance
1401.23	Prepare 8 or 10 column worksheets.	
1401.24	Prepare the financial statements from a completed worksheet.	
1401.25	Verify the financial statements against the worksheet for accuracy.	
1401.26	Record and post adjusting and closing entries.	
1401.27	Locate and correct accounting errors.	
1401.28	Prepare post-closing trial balance from general ledger.	
1401.29	Complete the accounting cycle, including the adjustment and closing processes for a sole proprietorship.	
1401.30	Complete the accounting cycle, including the adjustment and closing processes for a sole proprietorship.	
1401.31	Record transactions, and prepare and analyze the financial statements for a service business and a merchandising operation.	

Merchandise Inventory		Complete
Content Skill Sets		Knowledge/ Performance
1401.32	Demonstrate knowledge of a merchandise inventory account using perpetual and periodic methods.	
1401.33	Analyze effects on accounts by the purchase of goods.	
1401.34	Calculate the cost of goods sold.	

Payroll Preparation		Complete
Content Skill Sets		Knowledge/

	Performance
1401.35 Demonstrate familiarity with electronic payroll data entry.	
1401.36 Complete a payroll register.	
1401.37 Prepare a payroll check and check stub with appropriate information.	
1401.38 Record information found on W-4 forms in employee data section.	
1401.39 Calculate appropriate employee payroll taxes.	
1401.40 Calculate appropriate employer payroll tax liabilities.	
1401.41 Determine appropriate deposit dates, documentation, and prepare quarterly state and federal tax forms.	
1401.42 Journalize payroll entries at end of earnings period in appropriate journals.	

NOTES:

Course Description: This course is designed to develop student understanding and skills in such areas as advanced accounting procedures and techniques utilizing both manual and computer-based accounting. There is a strong emphasis on problem solving, analysis and financial decision-making. Students study the advanced principles, concepts and practices of the accounting cycle and partnerships, corporations, cost accounting, inventory and tax accounting. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Payroll Preparation		Complete
Content Skill Sets		Knowledge/ Performance
1403.1	Demonstrate familiarity with electronic payroll data entry.	
1403.2	Complete a payroll register.	
1403.3	Prepare a payroll check and check stub with appropriate information.	
1403.4	Record information found on W-4 forms in employee data section.	
1403.5	Calculate appropriate employee payroll taxes.	
1403.6	Calculate appropriate employer payroll tax liabilities.	
1403.7	Determine appropriate deposit dates, documentation, and prepare quarterly state and federal tax forms.	
1403.8	Journalize payroll entries at end of earnings period in appropriate journals.	

Identification and Application of Source Data		Complete
Content Skill Sets		Knowledge/ Performance
1403.9	Identify and locate appropriate business forms used in bookkeeping and/or accounting.	
1403.10	Apply procedures for using electronic data for various bookkeeping and/or accounting purposes.	
1403.11	Interpret and identify information contained in source documents.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1403.12	Exhibit familiarity with the internal controls for sensitive source documents.	
1403.13	Exhibit familiarity with the internal controls for e-commerce.	
1403.14	Exhibit familiarity with internal controls for the protection of company assets and property.	
1403.15	Exhibit familiarity with confidentiality and ethics.	

Merchandise Inventory**Complete****Content Skill Sets****Knowledge/
Performance**

1403.16 Demonstrate knowledge of a merchandise inventory account using perpetual and periodic methods.

1403.17 Analyze effects on accounts by the purchase of goods.

1403.18 Calculate the cost of goods sold.

1403.19 Prepare adjusting entries based on physical inventory.

1403.20 Calculate for obsolete or a shrinkage of inventory.

West Virginia Standards**Accounting Cycle****Complete****Content Skill Sets****Knowledge/
Performance**

1403.21 Complete the accounting cycle, including the adjustment and closing processes for a sole proprietorship.

1403.22 Record transactions, and prepare and analyze the financial statements for a service business and a merchandising operation.

1403.23 Complete inventory valuation using all of the GAAP approved methods.

1403.24 Ensure quality by implementing and enforcing Internal Controls.

1403.25 Calculate and record depreciation, depletion, and amortization using all of the GAAP approved methods.

1403.26 Record and manage accounts payable and accounts receivable.

1403.27 Record transactions and prepare and analyze financial statements for a partnership.

1403.28 Calculate and record depreciation, depletion, and amortization using all of the GAAP approved methods.

1403.29 Record and manage accounts payable and accounts receivable.

1403.30 Record transactions and prepare and analyze financial statements for a partnership.

1403.31 Complete the accounting cycle, including the adjustment and closing processes for a sole proprietorship.

Advanced Accounting Practices**Complete****Content Skill Sets****Knowledge/
Performance**

1403.32 Record transactions, and prepare and analyze the financial statements for a service business and a merchandising operation.

1403.33 Complete inventory valuation using all of the GAAP approved methods.

1403.34 Ensure quality by implementing and enforcing Internal Controls.

1403.35 Record transactions and prepare and analyze financial statements for a corporation.

1403.36 Exhibit understanding of cash or accrual accounting.

1403.37 Differentiate between proprietorship, partnership, corporation, and departmental accounting procedures.

1403.38 Record accounting entries for installment payment systems.

1403.39 Calculate the amount of uncollectable accounts through aging of accounts receivable.

1403.40	Record transactions for the issuance of common stock, preferred stock, and the announcement and payment of dividends, and the purchase and resale of treasury stock.	
1403.41	Calculate the present value of a bond and record all necessary transactions related to bonds.	
1403.42	Exhibit understanding of stocks, declarations, and payment of dividends.	
1403.43	Calculate and record depreciation and amortization.	
1403.44	Record the necessary transactions for both debt and equity investments..	
1403.45	Prepare and analyze a statement of cash flows.	
1403.46	Calculate and analyze financial ratios.	
1403.47	Prepare a master budget and perform budget analysis.	

NOTES:

Course Description: Designed to be the first computer science course for students who have never programmed before, ICS is an optional starting point for the PLTW Computer Science program. Students work in teams to create simple apps for mobile devices using MIT App Inventor®. Students explore the impact of computing in society and the application of computing across career paths and build skills and awareness in digital citizenship and cybersecurity. Students model, simulate, and analyze data about themselves and their interests. They also transfer the understanding of programming gained in App Inventor to learn introductory elements of text-based programming in Python® to create strategy games

Notes: These courses align with Project Lead the Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Professional Standards, Ethics, and Business Practices		Complete
Content Skill Sets		Knowledge/ Performance
1408.01	Identify professional standards and etiquette, including social media.	
1408.02	Demonstrate awareness of copyright laws, licensing, and intellectual freedoms and properties.	
1408.03	Identify characteristics of computer ethics (e.g., Internet, confidentiality, user policies, billing practices).	
1408.04	Demonstrate effective technical and professional communication skills.	

General Computer Knowledge and Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1408.05	Identify and convert between different number systems (e.g., binary, hexadecimal, decimal).	
1408.06	Identify basic computer terminology (e.g., software, hardware, networking, and security).	
1408.07	Identify basic concepts of computer programming (e.g., flow charts, general knowledge).	
1408.08	Demonstrate understanding of troubleshooting skills.	
1408.09	Identify and apply general safety procedures.	
1408.10	Demonstrate familiarity with basic task management, prioritization, and planning.	

PC Hardware Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1408.11	Identify various technologies (e.g., processors, memory, storage, interfaces, mobile devices).	
1408.12	Demonstrate understanding of different printing technologies.	
1408.13	Exhibit knowledge of input devices (e.g., cameras, scanners, keyboards, mice).	

1408.14	Exhibit knowledge of output devices (e.g., LCD, printers, tablets, external storage, entertainment devices).	
1408.15	Display knowledge of communication devices (e.g., modem, NIC, hub, switch, router).	

PC Software Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1408.16	Exhibit familiarity with operating systems.	
1408.17	Demonstrate familiarity with common software applications.	
1408.18	Exhibit knowledge of email software.	
1408.19	Demonstrate ability to install and maintain computer software.	
1408.20	Demonstrate proficiency with web browsing software (e.g., search engine items, HTML, Javascript, XML, plug-ins).	
1408.21	Demonstrate familiarity with utility software (e.g., defrag, chkdsk, system restore).	

Networking and Data Communications		Complete
Content Skill Sets		Knowledge/ Performance
1408.22	Recognize various network types and topologies.	
1408.23	Identify network protocols and LAN access methods.	
1408.24	Demonstrate familiarity with network services (e.g., VPN, video conferencing, printer sharing, DNS, DHCP, web services).	
1408.25	Identify data communications media (e.g., wired, wireless, and satellite).	
1408.26	Identify various Internet connectivity methods (e.g., cable modem, DSL, T1, dialup, WiFi).	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1408.27	Exhibit knowledge of information security, passwords, firewalls, and malicious software.	
1408.28	Demonstrate understanding of security concepts.	

Course Description: This course is designed to develop student understanding and skills in such areas as business communications. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1409.1	Apply reading skills in a business environment.	
1409.2	Apply writing skills in a business environment.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
1409.3	Exhibit ethical standards in conducting business negotiations and making business decisions.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
1409.4	Locate, organize, and reference written information from reliable sources to communicate with coworkers and clients.	
1409.5	Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	
1409.6	Apply listening skills and interpret verbal and nonverbal behaviors to enhance communication with coworkers and clients.	

Information Technology Applications		Complete
Content Skill Sets		Knowledge/ Performance
1409.7	Use software such as word processors and spreadsheets to perform common business applications.	
1409.8	Use social media and mobile technology appropriately.	

Leadership and Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
1409.9	Exhibit leadership practices to improve production and quality of the working environment.	
1409.10	Work effectively in a team environment to accomplish company goals and improve quality of the working environment.	

West Virginia Standards**Reading Strategies****Complete****Content Skill Sets****Knowledge/
Performance**

1409.11 Determine whether written material and electronic media provides factual information or opinion

1409.12 Exhibit integrity and relevance in printed or oral communications

1409.13 Collect information from business correspondence, professional articles, electronic sources, and supporting graphic material

1409.14 Select an appropriate reading method for a particular situation. (e.g., skimming, scanning, speed reading or in-depth reading)

1409.15 Determine the intent of printed propaganda and its impact on decision-making

Listening and Observation Skills**Complete****Content Skill Sets****Knowledge/
Performance**

1409.16 Explain the advantages for effective listening techniques

1409.17 Implement effective listening techniques to assess and respond to major points of a speaker's message

1409.18 Utilize information from multiple speakers within a group to obtain key facts and respond in an effective manner

1409.19 Determine methods to overcome major barriers to effective listening

1409.20 Collect, interpret and respond to different types of nonverbal messages and cues appropriately in various situations, including other cultures

1409.21 Demonstrate the ability to follow oral instructions in completing jobs

Oral Communication Skills**Complete****Content Skill Sets****Knowledge/
Performance**

1409.22 Establish the nature of effective verbal communications

1409.23 Construct relevant questions to elicit information in the exchange of ideas in a formal/informal setting

1409.24 Provide responses to inquiries

1409.25 Determine different types of nonverbal cues and discuss their impact on the communication process

1409.26 Develop thoughts in an organized manner to reflect logical thinking

1409.27 Use proper telephone techniques and etiquette to gather and record oral information

1409.28 Participate in group discussions

1409.29 Prepare effective oral presentations using tasks and techniques associated with special presentation situations

1409.30 Demonstrate an awareness and acceptance of international, regional, and multicultural speech

Written Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
1409.31	Determine the nature of effective written communication	
1409.32	Select and utilize appropriate formats for professional writing	
1409.33	Complete forms of business correspondence (e.g. formal requests, memorandum, promotion letters, invitations, reports, letter heads, etc.)	
1409.34	Edit written work to be consistent with professional standards	
1409.35	Identify factors affecting the readability for specific audiences	
1409.36	Prepare professional e-mails, business letters, informational messages, inquiries, persuasive messages, executive summaries, proposals and simple and complex written reports that are grammatically correct and use appropriate business style	
1409.37	Use a variety of references, resources and graphics for the purpose of writing business documents	
1409.38	Develop effective electronic-based messages. (e.g. Wiki, podcasting, blogs, etc.)	

Social Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
1409.39	Identify appropriate business for various business settings	
1409.40	Display a positive attitude in personal and professional settings	
1409.41	Set communication goals and demonstrate flexibility in adjusting those goals in response to feedback from others or changes in the business environment.	

Career Communications		Complete
Content Skill Sets		Knowledge/ Performance
1409.42	Complete a career and job analysis.	
1409.43	Compose formal letters of application.	
1409.44	Create an appropriate resume.	
1409.45		
1409.46	Compose follow-up letters for job opportunities.	
1409.47	Participate in mock interviews in various situations.	
1409.48	Demonstrate appropriate dress in an interview situation.	
1409.49	Discuss the significance of nonverbal communications in the interviewing process.	
1409.50	List qualities that employers expect in potential employees.	
1409.51	Use correct strategies for accepting or rejecting an employment offer.	

NOTES:

Business Computer Applications I

(Microsoft Outlook, PowerPoint, Word, Excel)

Course #: 1411

Course Description: This course is designed to develop student understanding and skills in such areas as Microsoft Outlook, PowerPoint, Word, and Excel. This course introduces and prepares students for certifications in Microsoft Office Specialist Exams. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of Career Technical Student Organizations.

Administrative Services		Complete
Content Skill Sets		Knowledge/ Performance
1411.1	Establish and follow procedures to manage records and confidential materials.	
1411.2	Select appropriate formats to prepare and send internal and external documents.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1411.3	Apply reading skills in a business environment.	
1411.4	Apply writing skills in a business environment.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
1411.5	Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	

Information Technology Applications		Complete
Content Skill Sets		Knowledge/ Performance
1411.6	Use software such as word processors and spreadsheets to perform common business applications.	
1411.7	Interpret and use tables and charts.	

Problem-Solving, Critical Thinking, and Decision-Making		Complete
Content Skill Sets		Knowledge/ Performance
1411.8	Use problem-solving and critical thinking skills to locate good sources of information about problems and determine appropriate methods for investigating causes.	

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
1411.9	Demonstrate employability skills related to a career in business.	

West Virginia Standards

Email/Calendar Manager Software – Manage Settings and Processes		Complete
Content Skill Sets		Knowledge/ Performance
1411.10	Customize settings and configure mail settings.	
1411.11	Perform search operations within mail and calendar manager software.	
1411.12	Print and save information.	
1411.13	Transfer information or documents to customers, using a compute, mail, etc.	
1411.14	Open, sort, organize, and route incoming mail, answer correspondence, and prepare outgoing mail.	
1411.15	Create and manage calendars	
1411.16	Create and organize appointments, meetings, and events.	
1411.17	Create and manage contact information (records, groups, SharePoint).	
1411.18	Create and manage tasks.	

Presentation Software – Manage Presentations		Complete
Content Skill Sets		Knowledge/ Performance
1411.19	Modify slide masters, handout masters, and note masters to configure and present slide shows.	
1411.20	Create a slideshow presentation.	
1411.21	Change presentation options and views and print settings.	
1441.22	Prepare presentations for collaboration.	
1411.23	Prepare reports, presentations, and other documents, using presentation software.	
1411.24	Insert, order, and group text and graphic elements in presentations (e.g., text, links, images, objects, etc.).	
1411.25	Insert tables, charts, SmartArt, 3-D models, and media into a presentation.	
1411.26	Apply and configure slide transitions.	
1411.27	Animate slide content.	
1411.28	Set timing for transitions.	

Word Processing – Manage Documents		Complete
Content Skill Sets		Knowledge/ Performance

1411.29	Format word processing documents (e.g., text, paragraphs, sections, styles, design, etc.).	
1411.30	Save and share documents.	
1411.31	Inspect documents for issues.	
1411.32	Review work done by others to check for correct spelling and grammar, ensure that company format policies are followed, and recommend revisions.	
1411.33	Compose, type, and distribute meeting notes, routine correspondence, and reports.	
1411.34	Type, format, proofread, and edit correspondence and other documents from notes or dictating machines using computers.	
1411.35	Create and modify tables.	
1411.36	Create and modify lists.	
1411.37	Create and manage reference elements and tables.	
1411.38	Insert and format graphic elements.	
1411.39	Add and manage comments.	
1411.40	Manage change tracking.	
1411.41	Prepare invoices, reports, memos, letters, and other documents using word processing software.	

Spreadsheets – Manage Worksheets and Workbooks		Complete
Content Skill Sets		Knowledge/ Performance
1411.42	Import data and manipulate data in workbooks.	
1411.43	Navigate within workbooks.	
1411.44	Format worksheets and workbooks.	
1411.45	Configure content for collaboration.	
1411.46	Prepare invoices, reports, financial statements, and other documents, using spreadsheet software.	
1411.47	Format and manage data in cells and ranges.	
1411.48	Manage tables and table data.	
1411.49	Perform operations by using formulas and functions.	
1411.50	Manage charts and tables.	

NOTES:

1413 Business Computer Applications II

(Microsoft Expert Level in Excel and Word)

Course #: 1413

Course Description: This course is designed to develop student understanding and skills in such areas as Microsoft Outlook, PowerPoint, Word, and Excel. This course prepares students for certifications in Microsoft Office Specialist Exams and Expert Level Microsoft Office Certifications. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of Career Technical Student Organizations.

Administrative Services		Complete
Content Skill Sets		Knowledge/ Performance
1413.1	Apply planning/time management principles to accomplish workplace objectives (e.g., schedule meetings, maintain supplies, prioritize activities).	
1413.2	Establish and follow procedures to manage records and confidential materials.	
1413.3	Select the appropriate format to prepare and send internal and external documents.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1413.4	Apply reading skills in a business environment.	
1413.5	Apply writing skills in a business environment.	
1413.6	Apply mathematical skills in a business environment.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
1413.7	Develop and deliver formal and informal presentations using the appropriate media to engage and inform audiences.	

Information Technology Applications		Complete
Content Skill Sets		Knowledge/ Performance
1413.8	Use software such as word processors and spreadsheets to perform common business applications.	
1413.9	Use software such as databases to track and maintain business information.	
1413.10	Interpret and use tables and charts.	

Problem-Solving, Critical Thinking, and Decision Making		Complete
--	--	-----------------

Content Skill Sets		Knowledge/ Performance
1413.11	Use problem-solving and critical thinking skills to determine the root causes of problems and suggest solutions.	

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
1413.12	Pursue career development skills to advance in business careers.	

Database Design – Manage Databases		Complete
Content Skill Sets		Knowledge/ Performance
1413.13	Modify database structure.	
1413.14	Manage table relationships and keys.	
1413.15	Print and export data.	
1413.16	Create and modify tables.	
1413.17	Create and modify fields.	
1413.18	Create and modify queries.	
1413.19	Modify forms in the layout view.	
1413.20	Configure and format reports.	

Spreadsheets – Manage Workbooks and Worksheets		Complete
Content Skill Sets		Knowledge/ Performance
1413.21	Manage workbook options and settings.	
1413.22	Prepare workbooks for collaboration.	
1413.23	Use and configure language options.	
1413.24	Prepare invoices, reports, financial statements, and other documents using spreadsheet software.	
1413.25	Fill, format, and validate data in cells.	
1413.26	Apply advanced conditional formatting and filtering.	
1413.27	Create advanced formulas and macros.	
1413.28	Create and modify advanced charts and tables.	
1413.29	Create and modify pivot tables.	

Word Processing – Manage Document Options and Settings		Complete
Content Skill Sets		Knowledge/ Performance

1413.30	Manage documents and templates.	
1413.31	Use and configure language options.	
1413.32	Use advanced editing and formatting features (e.g., paragraph layouts, manage styles, find/replace data, etc.).	
1413.33	Prepare invoices, reports, memos, letters, and other documents using word processing software.	
1413.34	Create and modify building blocks.	
1413.35	Create custom design elements.	
1413.36	Create and manage indexes.	
1413.37	Create and manage tables of figures.	
1413.38	Manage forms, fields, and controls.	
1413.39	Create and modify macros.	
1413.40	Perform mail merges.	

NOTES:

Course Description: The skillsets in this course are representative of the basic knowledge included in a Career and Technical Education/Business and Marketing concentration. Incorporated into this course are elements of introductory business law knowledge and skills necessary for a career in the business and marketing field. This course is recommended as an Elective in the Legal Office concentration. Teachers should provide each student with real-world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Business Management and Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1417.1	Define and differentiate among various types of businesses (e.g., corporation, limited liability, partnership).	
1417.2	Demonstrate understanding of doing business in a global environment.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
1417.3	Demonstrate understanding of the role of government and other regulatory bodies in business.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
1417.4	Apply business laws and regulations to business situations.	
1417.5	Exhibit ethical standards in conducting business negotiations and making business decisions.	

Problem Solving, Critical Thinking, and Decision Making		Complete
Content Skill Sets		Knowledge/ Performance
1417.6	Use problem-solving and critical thinking skills to locate good sources of information about problems and determine appropriate methods for investigating causes.	
1417.7	Use problem-solving and critical thinking skills to determine root causes of problems and suggest solutions.	

West Virginia Standards**Constitutional Rights****Complete****Content Skill Sets****Knowledge/
Performance**

1417.8 Explain the relationship between the founding documents.

1417.9 Discuss how the power to govern is divided.

1417.10 Research internet-related constitutional issues.

Court Systems, Criminal, Civil and Business Laws**Complete****Content Skill Sets****Knowledge/
Performance**

1417.11 Identify the different levels of courts and their power.

1417.12 Compare criminal and civil law.

1417.13 Characterize the types of crimes that affect business.

1417.14 Distinguish a crime form a tort.

1417.15 Identify the procedures used to try a civil case.

Contracts**Complete****Content Skill Sets****Knowledge/
Performance**

1417.16 Identify the elements of a contract.

1417.17 Determine the requirements of an offer and acceptance.

1417.18 Determine parties who lack contractual capacity.

1417.19 Explain why the statute of frauds is necessary.

1417.20 Describe the requirements and recognize the forms of consideration.

1417.21 Explain the transfer of contract rights and duties.

1417.22 Research remedies possible for breach of contract.

1417.23 Determine the contractual elements of premarital and marital relationships.

1417.24 Describe the various ways in which a marriage contract is ended.

Consumer Law**Complete****Content Skill Sets****Knowledge/
Performance**

1417.25 Distinguish special rules for sales contracts.

1417.26 Investigate what is required for transfer of ownership of goods.

1417.27 Explain consumer protection legislation.

Real and Personal Property Law**Complete****Content Skill Sets****Knowledge/
Performance**

1417.27 Distinguish between real and personal property.

1417.28 Determine ways in which bailments are created and ended.

1417.29 Interpret the rights and limitations associated with the forms of ownership of real property and how they are transferred.

1417.30 Explain the kinds of rental relationships that landlords and tenants may create.

1417.31 Identify the common types of insurance and when an insurable interest is present.

1417.32 Differentiate between dying testate and dying intestate.

Agency Employment Law**Complete****Content Skill Sets****Knowledge/
Performance**

1417.33 Distinguish the scope of agency authority.

1417.34 Discover the duties of an agent and principal.

1417.35 Research how employment contracts are made and terminated.

1417.36 Identify the employer and employee duties.

1417.37 Relate the development of labor law to how a union is formed.

Negotiable Instruments**Complete****Content Skill Sets****Knowledge/
Performance**

1417.38 Recognize the need for commercial paper.

1417.39 Distinguish negotiable from non-negotiable instruments.

1417.40 Distinguish financial transactions that are electronic funds transfers.

1417.41 Assess the importance of secured credit transactions.

1417.42 Explain debtor protection available under the law.

Course Description: SEC introduces the tools and concepts of cybersecurity and encourages students to create solutions that allow people to share computing resources while protecting privacy. Nationally, computational resources are vulnerable and frequently attacked; in SEC, students solve problems by understanding and closing these vulnerabilities. This course raises students' knowledge of and commitment to ethical computing behavior. It also aims to develop students' skills as consumers, friends, citizens, and employees who can effectively contribute to communities with a dependable cyber-infrastructure that moves and processes information safely. The course aligns with CSTA Level 3C Standards.

Notes: These courses align with Project Lead the Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

PC Hardware Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1420.01	Identify various technologies (e.g., processors, memory, storage, interfaces, mobile devices).	
1420.02	Demonstrate understanding of different printing technologies.	
1420.03	Exhibit knowledge of input devices (e.g., cameras, scanners, keyboards, mice).	
1420.04	Exhibit knowledge of output devices (e.g., LCD, printers, tablets, external storage, entertainment devices).	
1420.05	Display knowledge of communication devices (e.g., modem, NIC, hub, switch, router).	

Networking and Data Communications		Complete
Content Skill Sets		Knowledge/ Performance
1420.06	Recognize various network types and topologies.	
1420.07	Identify network protocols and LAN access methods.	
1420.08	Demonstrate familiarity with network services (e.g., VPN, video conferencing, printer sharing, DNS, DHCP, web services).	
1420.09	Identify data communications media (e.g., wired, wireless, and satellite).	
1420.10	Identify various Internet connectivity methods (e.g., cable modem, DSL, T1, dialup, WiFi).	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1420.11	Exhibit knowledge of information security, passwords, firewalls, and malicious software.	
1420.12	Exhibit knowledge of secure PKI, SSL, and Web communications.	
1420.13	Demonstrate understanding of security concepts.	

Course Description: This course is designed to develop student understanding and skills in such areas as the elements of business recordkeeping knowledge and skills necessary for a career in the business and marketing field. This course is recommended as an Elective in the Administrative Support Program of Study. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Identification and Application of Source Data		Complete
Content Skill Sets		Knowledge/ Performance
1421.1	Identify and locate appropriate business forms used in bookkeeping and/or accounting	
1421.2	Apply procedures for using electronic data for various bookkeeping and/or accounting purposes	

Merchandise Inventory		Complete
Content Skill Sets		Knowledge/ Performance
1421.3	Analyze effects on accounts by the purchase of goods	
1421.4	Calculate the cost of goods sold	
1421.5	Calculate for obsolete or a shrinkage of inventory	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1421.6	Exhibit familiarity with the internal controls for sensitive source documents	
1421.7	Exhibit familiarity with the internal controls for e-commerce	
1421.8	Exhibit familiarity with internal controls for the protection of company assets and property	
1421.9	Exhibit familiarity with confidentiality and ethics	

West Virginia Standards

Money Management		Complete
Content Skill Sets		Knowledge/ Performance
1421.10	Demonstrate giving correct change	
1421.11	Prepare a cash proof	

1421.12	Demonstrate banking transactions (endorsing checks, writing checks, preparing deposits, and maintaining a check register)	
1421.13	Reconcile a bank statement	
1421.14	Prepare, maintain, and replenish a petty cash fund	
1421.15	Develop and maintain a business budget	
1421.16	Maintain records of various forms of business credit (credit cards, installment loans, etc.)	

Payroll Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1421.17	Compute gross earnings, deductions, and net pay for an employee	
1421.18	Prepare payroll registers and individual earning records	
1421.19	Calculate various taxes for payroll deductions	
1421.20	Produce payroll deduction forms	

Recordkeeping		Complete
Content Skill Sets		Knowledge/ Performance
1421.21	Understand the importance of keeping records	
1421.22	Exhibit the importance of documentation of receipts, purchases, and expenses	
1421.23	Explain how having a system for financial record-keeping can make it easier to make financial decisions	
1421.24	Demonstrate how travel, transportation, entertainment, and gift expenses	
1421.25	Demonstrate how to employment tax records	
1421.26	Understand the period of limitations as it applies to records and tax returns	
1421.27	Differentiate between physical and electronic records	
1421.28	Understand the responsibility to prove entries, deductions, and statements made on financial documentation as the burden of proof.	

Accounting Forms		Complete
Content Skill Sets		Knowledge/ Performance
1421.29	Prepare sales slips	
1421.30	Prepare account statements and invoices	
1421.31	Prepare purchase requisitions and purchase orders	
1421.32	Journalize transactions in special journals (cash payments, cash receipts, purchases, sales, and general)	
1421.33	Post to accounts receivable and payable ledgers	

Course Description: This course is designed to develop student understanding and skills in such areas as journalistic principles in design and layout of print and Web publications including integration of text and graphics and use of sophisticated hardware and software to develop and create quality materials for business-related tasks. Students will analyze the information and the audience and combine appropriate text, graphics and design to communicate the desired message effectively. Planning and design principles are used to analyze and organize information, set up a design structure and to select or create appropriate visuals. Instructional strategies may include computer/technology applications, teacher demonstrations, collaborative instruction, interdisciplinary and/or culminating projects, problem-solving and critical thinking activities, simulations and project-based learning activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Design Techniques, Tools, Technical plans, and Drawings		Complete
Content Skill Sets		Knowledge/ Performance
1429.01	Demonstrate knowledge of standard copyright rules.	
1429.02	Comply with software licensing agreements associated with desktop publishing.	
1429.03	Create designs, concepts and sample layouts based on knowledge of layout principles and esthetic design concepts.	
1429.04	Position text and art elements from a variety of databases in a visually appealing way to design print or web pages, using knowledge of type styles and size and layout patterns.	
1429.05	Determine size and arrangement of illustrative material, copy and select style and size of type.	
1429.06	Study layout or other design instructions to determine work to be done and sequence of operations.	
1429.07	Select number of colors and determine color separations.	
1429.08	Edit graphics and photos using pixel or bitmap editing, airbrushing, masking or image retouching.	
1429.09	Develop graphics and layouts for product illustrations, company logos and Internet websites.	
1429.10	Enter data, such as coordinates of images and color specifications, into system to retouch and make color corrections.	
1429.11	Mark up, paste and assemble final layouts to prepare layouts for printer.	

Media Productions and Desktop Publishing Communications		Complete
Content Skill Sets		Knowledge/ Performance
1429.12	Draw and print charts, graphs, illustrations and other artwork, using computer.	
1429.13	Identify the purpose, audience and audience needs for preparing image(s) and video(s).	
1429.14	Confer with clients to discuss and determine layout design.	
1429.15	Collaborate with graphic artists, editors and writers to produce master copies according to design specifications.	
1429.16	Review final layouts and suggest improvements as needed.	

1429.17	Check preliminary and final proofs for errors and make necessary corrections.	
1429.18	Prepare illustrations or rough sketches of material, discussing them with clients or supervisors and making necessary changes.	
1429.19	Key information into computer equipment to create layouts for client or supervisor.	

Desktop Publishing Applications and Camera-Ready Photos		Complete
Content Skill Sets		Knowledge/ Performance
1429.20	Operate desktop publishing software and equipment to design, lay out and produce camera-ready copy.	
1429.21	Enter text into computer keyboard and select the size and style of type, column width and appropriate spacing for printed materials.	
1429.22	Convert various types of files for printing or for the Internet, using computer software.	
1429.23	Transmit, deliver or mail publication master to printer for production into film and plates.	
1429.24	Enter digitized data into electronic prepress system computer memory, using scanner, camera, keyboard or mouse.	
1429.25	View monitors for visual representation of work in progress and for instructions and feedback throughout process, making modifications as necessary.	
1429.26	Import text and art elements such as electronic clip-art or electronic files from photographs that have been scanned or produced with a digital camera, using computer software.	
1429.27	Prepare sample layouts for approval, using computer software.	
1429.28	Use computer software to generate new images.	
1429.29	Maintain archive of images, photos or previous work products.	

Course Description: This course is designed to develop student understanding and skills in such areas as the elements of digital imaging and multimedia knowledge and skills necessary for a career in the business and marketing field. This course is recommended as an Elective in the Microsoft Computer Applications (MCAS) and Certified Internet Webmaster (CI) Programs of Study. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Digital Safety & Current Copyright, Creative Commons, and Fair Use Laws		Complete
Content Skill Sets		Knowledge/ Performance
1431.01	Define the various types of create commons licenses.	
1431.02	Describe the purpose of copyright, creative commons, public domain, etc.	
1431.03	Adhere to copyright and creative commons laws.	
1431.04	Locate digital images and multimedia published under various copyright and creative commons licenses.	
1431.05	Maintain digital safety, including personal and computer safety.	

Digital Media Communication		Complete
Content Skill Sets		Knowledge/ Performance
1431.06	Identify the purpose, audience and audience needs for preparing image(s).	
1431.07	Communicate with others (such as peers and clients) about design plans.	
1431.08	Describe how the design plans are meeting the purpose, and target audience needs.	

Software Applications, Design Tools, and Techniques in Digital Imaging		Complete
Content Skill Sets		Knowledge/ Performance
1431.09	Utilize multiple platforms for creating and enhancing digital images.	
1431.10	Apply layout and design principles.	
1431.11	Create layouts for ease of readability and attractiveness.	
1431.12	Take pictures using various features on a digital camera.	
1431.13	Transfer images from a camera to computers or other electronic equipment.	
1431.14	Utilize filters, tools, and features within digital imaging software application to enhance photographs.	
1431.15	Produce images using layers and layer styles.	

1431.16	Demonstrate application of typography.	
1431.17	Import, export, organize and save images.	
1431.18	Choose correct file format for each project.	
1431.19	Differentiate between common image file types: jpeg, gif, bmp, png, etc.	
1431.20	Describe software specific image file types.	
1431.21	Use guides and rulers.	
1431.22	Demonstrate application of drawings and paintings.	
1431.33	Incorporate color techniques, including gradient, grayscale, opacity, blending, etc.	
1431.34	Utilize paths to modify objects, shapes, and text.	
1431.35	Design a digital imaging/multimedia project.	

Media Production Communications		Complete
Content Skill Sets		Knowledge/ Performance
1431.36	Create graphics for business professional use: logos, letterheads, business cards, brochures, posters, billboards, cards, etc.	
1431.37	Create basic designs, drawings and illustrations for multimedia use in commercials, animations, advertisements, infographics, etc.	
1431.38	Keep abreast of new imaging software and hardware technologies, and industry trends by reviewing current literature, talking with others, participating in educational programs, or participating in professional organizations, workshops or conferences.	
1431.39	Utilize multiple platforms for creating and enhancing digital multimedia projects.	
1431.40	Apply layout and design principles for attractiveness and readability.	
1431.41	Transfer video from a camera to computers or other electronic equipment.	
1431.42	Use digital video software to cut, edit, apply effects, add titles and transitions to video clips.	
1431.43	Create animations utilizing frames and keyframes on a timeline.	
1431.44	Create an animated walk cycle.	
1431.45	Integrate original audio digital elements (voice/sound clips, music) into a project.	
1431.46	Integrate audio digital elements (voice/sound clips, music) from the web into a project.	
1431.47	Enhance a voice/sound clip with lip sync.	
1431.48	Utilize tweening and symbols.	
1431.49	Describe publication procedures.	
1431.50	Keep abreast of new multimedia software and hardware technologies, and industry trends by reviewing current literature, talking with others, participating in educational programs, or participating in professional organizations, workshops or conferences.	

Course Description: This course is designed to develop student understanding and skills in such areas as imaging, drawing, animation, and video software which will be used to create advanced projects. These projects will involve advanced tools and techniques of each discipline. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Advanced Multimedia Design: Design Techniques, Tools, Technical Plans, and Drawings		Complete
Content Skill Sets		Knowledge/ Performance
1432.01	Comply with software licensing agreements associated with multimedia presentations.	
1432.02	Demonstrate knowledge of standard copyright rules for images and image use.	
1432.03	Demonstrate application of image resolution, image size and image file format for web, video, and print.	
1432.04	Create two-dimensional and three-dimensional images depicting objects in motion or illustrating a process, using computer animation or modeling programs.	
1432.05	Design complex graphics and animation, using independent judgment, creativity, and computer equipment.	
1432.06	Make objects or characters appear lifelike by manipulating light, color, texture, shadow and transparency, or manipulating static images to give the illusion of motion.	
1432.07	Work with selections and measurements.	
1432.08	Apply layers and masks.	
1432.09	Apply story development, directing, cinematography and editing to animation to create storyboards that show the flow of the animation and map out key scenes and characters.	
1432.10	Develop briefings, brochures, multimedia presentations, web pages, promotional products, technical illustrations and computer artwork for use in products, technical manuals, literature, newsletters and slide shows.	
1432.11	Script, plan and create animated narrative sequences under tight deadlines, using computer software and hand drawing techniques.	
1432.12	Produce an electronic portfolio.	
1432.13	Assemble, typeset, scan and produce digital camera-ready art.	

Advanced Multimedia Communications: Audience, Audience Needs, and Media Production		Complete
Content Skill Sets		Knowledge/ Performance
1432.14	Identify the purpose, audience and audience needs for preparing image(s).	
1432.15	Participate in design and production of multimedia campaigns, handling budgeting and scheduling and assisting with such	

	responsibilities as production coordination, background design and progress tracking.	
1432.16	Communicate with others (such as peers and clients) about design plans.	
1432.17	Prepare images for web, print and video.	

Course Description: This course is designed to develop student understanding and skills in such areas as business law, communication skills, customer relations, economics, emotional intelligence, financial analysis, human resources management, information management, marketing, operations, professional development, and strategic management. Students acquire knowledge of fundamental business activities and factors affecting business, develop verbal and written communication skills, use information literacy skills, utilize job-seeking strategies and participate in career planning. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Business Management and Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1439.1	Define and differentiate among various types of businesses (e.g., corporation, limited liability, partnership).	
1439.2	Apply marketing techniques to foster business growth.	
1439.3	Demonstrate understanding of doing business in a global environment.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1439.4	Apply reading skills in a business environment.	
1439.5	Apply writing skills in a business environment.	
1439.6	Apply mathematical skills in a business environment.	
1439.7	Manage projects, staff schedules, and departmental budgets.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
1439.8	Locate, organize, and reference written information from reliable sources to communicate with coworkers and clients.	
1439.9	Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	

Problem Solving, Critical Thinking, and Decision Making		Complete
Content Skill Sets		Knowledge/ Performance
1439.10	Use problem-solving and critical thinking skills to locate good sources of information about problems and determine appropriate	

methods for investigating causes.	
-----------------------------------	--

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
1439.11	Demonstrate employability skills related to a career in business.	
1439.12	Pursue career development skills to advance in business careers.	

West Virginia Standards

Economics		Complete
Content Skill Sets		Knowledge/ Performance
1439.13	Understand fundamental economic concepts to obtain a foundation for employment in business.	
1439.14	Understand the nature of business to show its contributions to society.	
1439.15	Understand economic systems to be able to recognize the environments in which businesses function.	

Market Planning		Complete
Content Skill Sets		Knowledge/ Performance
1439.16	Acquire foundational knowledge of marketing-information management to understand its nature and scope.	
1439.17	Explain the concept of marketing strategies.	
1439.18	Select target market appropriate for product/business to obtain the best return on marketing investment (ROMI).	
1439.19	Demonstrate an understanding of the concept of the marketing mix and segmentation.	
1439.20	Explain the role of situation analysis in the marketing planning process.	
1439.21	Set marketing goals and objectives.	
1439.22	Describe benefits of technology in retailing.	
1439.23	Describe digital pricing and inventory systems.	
1439.24	Describe various forms of digital retail technology (e.g., rewards programs, loyalty cards, etc.).	
1439.25	Compare advantages and disadvantages of "brick and mortar" versus online businesses.	
1439.26	Develop marketing strategies to guide marketing tactics.	
1439.27	Acquire product knowledge to communicate product benefits and to ensure appropriateness of product for the customer.	
1439.28	Understand sales processes and techniques to enhance customer.	
1439.29	Explain the concept and purpose of advertising and cooperative advertising.	
1439.30	List forms of advertising media and the advantages and disadvantages of each.	
1439.31	Employ sales processes and techniques to enhance customer relationships and to increase the likelihood of making sales.	
1439.32	Identify a sales conversion strategy.	

1439.33	Coordinate activities in the promotional mix.	
1439.34	Determine how to increase the lifetime value of customers.	
1439.35	Explain the types of digital marketing.	

Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
1439.36	State the advantages and disadvantages of small business ownership.	
1439.37	Explain franchising and other types of business ownership (e.g., partnership, corporation).	
1439.38	Display understanding of trademarks, patents, and copyrights.	
1439.39	Explain management's role in customer relations.	
1439.40	Assess the need to use external resources for concept development.	
1439.41	Identify and apply the components of the entrepreneurial mindset.	
1439.42	Identify and apply the design thinking process.	
1439.43	Determine feasibility of venture ideas.	

NOTES:

Course Description: This course is designed to develop student understanding and skills in such areas as the elements of introductory keyboarding techniques necessary for a career in the business and marketing field. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Work Habits		Complete
Content Skill Sets		Knowledge/ Performance
1441.1	Good work habits.	
1441.2	Implement oral and written instructions in the completion of assigned tasks and work efficiently to meet deadlines.	
1441.3	Display the attitudes and work habits necessary for good interpersonal and employee/employer relations in the workforce.	
1441.4	Prepare and keep the area in and around the workstation organized by properly assembling supplies and information necessary to complete assigned tasks.	
1441.5	Demonstrate desirable work ethics.	

Operational Keyboarding Skills		Complete
Content Skill Sets		Knowledge/ Performance
1441.6	Operational keyboarding skills.	
1441.7	Master operation of the alphabet, punctuation, number and symbol keys by touch.	
1441.8	Develop proofreading skills by visually and manually checking for errors utilizing computer proofreading tools. (i.e., spell check, grammar check and thesaurus).	
1441.9	Increase keyboarding speed and accuracy.	

Keyboarding Production Skills		Complete
Content Skill Sets		Knowledge/ Performance
1441.10	Production keyboarding skills.	
1441.11	Apply information processing concepts.	
1441.12	Develop language arts skills such as using correct grammar, capitalization, punctuation, number expression and word usage through composition of business communications.	
1441.13	Demonstrate production, formatting and editing skills in keyboarding. (i.e. Enumeration, outlines and formatting copy for short reports, memorandums, personal/business communications from arranged, rough-draft, handwritten, incomplete or unedited copy).	

1441.14	Identify and correctly use proofreaders' marks.	
1441.15	Maintain a minimum speed of 35 words per minute with 3 or fewer errors on a 3-minute timed writing.	
1441.16	Prepare envelopes using USPS style and insert correctly folded letters.	
1441.17	Key bound and unbound reports with and without special features. (i.e., endnotes, internal citations, title page and reference page).	

Computer Skills		Complete
Content Skill Sets		Knowledge/ Performance
1441.18	Basic computer skills.	
1441.19	Identify hardware components.	
1441.20	Demonstrate the proper care and use of hardware and software.	
1441.21	Use application processing terminology.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Education/Business and Marketing concentration. Incorporated into this course are elements of management and entrepreneurship knowledge and skills necessary for a career in the business and marketing field. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets

Business Management and Technical Skills		Completed
Content Skill Sets		Knowledge/ Performance
1445.1	Use planning tools to guide and manage an organization’s business activities.	
1445.2	Plan and evaluate the use of financial resources to effectively manage a business.	

General Management		Completed
Content Skill Sets		Knowledge/ Performance
1445.3	Supervise, direct, motivate, and evaluate employees.	
1445.4	Develop, implement, and monitor tactical/strategic plans to manage growth, meet goals, and organizational needs.	
1445.5	Facilitate change and implement improvement processes to optimize organizational effectiveness.	
1445.6	Manage projects, staff schedules, and departmental budgets.	

Systems		Completed
Content Skill Sets		Knowledge/ Performance
1445.7	Demonstrate understanding of company hierarchies and roles within company structures.	

Communications		Completed
Content Skill Sets		Knowledge/ Performance
1445.8	Locate, organize, and reference written information from reliable sources to communicate with coworkers and clients.	
1445.9	Apply listening skills and interpret verbal and nonverbal behaviors to enhance communication with coworkers and clients.	

Problem-Solving, Critical Thinking, and Decision-Making		Completed
Content Skill Sets		Knowledge/ Performance
1445.10	Use problem-solving and critical thinking skills to determine root causes of problems and suggest solutions.	

Leadership Teamwork		Completed
Content Skill Sets		Knowledge/ Performance
1445.11	Exhibit leadership practices to improve productivity and quality of the working environment.	

Safety, Health, and Environmental		Completed
Content Skill Sets		Knowledge/ Performance
1445.12	Identify and practice appropriate health and safety procedures for business occupations.	
1445.13	Apply appropriate emergency procedures for business occupations.	

Employability and Career Development		Completed
Content Skill Sets		Knowledge/ Performance
1445.14	Demonstrate employability skills related to a career in business.	
1445.15	Pursue career development skills to advance in business careers.	

West Virginia Standards

Entrepreneurship		Completed
Content Skill Sets		Knowledge/ Performance
1445.16	Assess global trends and opportunities for business ventures.	
1445.17	Discuss entrepreneurial discovery processes.	
1445.18	Explain the need for entrepreneurial discovery.	
1445.19	Adapt to changes in the business environment.	
1445.20	Create processes for ongoing opportunity recognition.	
1445.21	Assess the need to use external resources for concept development.	
1445.22	Identify and apply the components of the entrepreneurial mindset.	
1445.23	Identify and apply the design thinking process.	
1445.24	Determine feasibility of venture ideas.	

Business Plan Development		Completed
Content Skill Sets		Knowledge/ Performance
1445.25	Outline the sections of a business plan.	
1445.26	Explain why customer discovery is vital to a successful product or service.	
1445.27	Create a prototype.	
1445.28	Understand the reasoning behind going broad to narrow.	
1445.29	Understand how to make a storyboard.	
1445.30	Determine cost structures and resource substitutions.	
1445.31	Research options for a business start-up, including franchising, purchasing an existing business, and starting a business from scratch.	
1445.32	Determine revenue streams with customer segments.	
1445.33	Create a pitch presentation.	
1445.34	Understand customer relations.	
1445.35	Classify types of business ownership.	
1445.36	Write a business plan.	
1445.37	Create a business plan pitch presentation.	

Channels and Distribution		Completed
Content Skill Sets		Knowledge/ Performance
1445.38	Explain the nature of channels of distribution.	
1445.39	Create a distribution strategy.	
1445.40	Understand the different types of retailers.	
1445.41	Explain factors affecting pricing decisions.	
1445.42	Select the business location.	

Course Description: This course is designed to develop student understanding and skills in such areas as developing personal and employability skills, managing records, processing mail, communicating duties, keeping financial records, applying computing, accounting, and data skills, processing business correspondence, operating office equipment, using management skills and completing office support activities. This course is recommended as an Elective in the Accounting Program of Study. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Business Management Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1449.1	Define and differentiate among various types of businesses (e.g., corporation, limited liability, partnership).	
1449.2	Use planning tools to guide and manage an organization’s business activities.	
1449.3	Apply marketing techniques to foster business growth.	
1449.4	Plan and evaluate the use of financial resources to effectively manage a business.	
1449.5	Demonstrate understanding of doing business in a global environment.	

Administrative Services		Complete
Content Skill Sets		Knowledge/ Performance
1449.6	Apply planning/time management principles to accomplish workplace objectives (e.g., schedule meetings, maintain supplies, prioritize activities).	
1449.7	Establish and follow procedures to manage records and confidential material.	
1449.8	Select appropriate formats to prepare and send internal and external documents.	
1449.9	Interact with employees and customers effectively and professionally.	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1449.10	Apply reading skills in a business environment.	
1449.11	Apply writing skills in a business environment.	
1449.12	Apply mathematical skills in a business environment.	
1449.13	Apply economic skills in a business environment.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
1449.14	Demonstrate understanding of the role of government and other regulatory bodies in business.	
1449.15	Demonstrate understanding of company hierarchies and roles within company structures.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
1449.16	Apply business laws and regulations to business situations.	
1449.17	Exhibit ethical standards in conducting business negotiations and making business decisions.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
1409.11	Locate, organize, and reference written information from reliable sources to communicate with coworkers and clients.	
1409.12	Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.	
1409.13	Apply listening skills and interpret verbal and nonverbal behaviors to enhance communication with coworkers and clients.	

Leadership and Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
1449.20	Exhibit leadership practices to improve production and quality of the working environment.	
1449.21	Work effectively in a team environment to accomplish company goals and improve quality of the working environment.	

Safety, Health, and Environmental		Complete
Content Skill Sets		Knowledge/ Performance
1449.22	Identify and practice appropriate health and safety procedures for business occupations.	
1449.23	Apply appropriate emergency procedures for business occupations.	

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
1449.24	Demonstrate employability skills related to a career in business.	
1449.25	Pursue career development skills to advance in business careers.	

West Virginia Standards

Office Tasks		Complete
Content Skill Sets		Knowledge/ Performance
1449.26	Operate office equipment such as fax machines, copiers, and phone systems, and use computers for spreadsheet, word processing, database management, and other applications.	
1449.27	Transmit information or documents to customers, using computer, mail, or facsimile machine.	
1449.29	Prepare invoices, reports, memos, letters, financial statements, and other documents, using word processing, spreadsheet, database, or presentation software.	
1449.30	Set up and maintain paper and electronic filing systems for records, correspondence, and other material.	
1449.31	Locate and attach appropriate files to incoming correspondence requiring replies.	
1449.32	Open, sort and route incoming mail, answer correspondence, and prepare outgoing mail.	
1449.34	Make copies of correspondence or other printed material.	
1449.37	Sort or classify information according to guidelines, such as content, purpose, user criteria, or chronological, alphabetical, or numerical order.	
1449.38	Review work done by others to check for correct spelling and grammar, ensure that company format policies are followed, and recommend revisions.	
1449.39	Compose, type, and distribute meeting notes, routine correspondence, and reports.	
1449.41	Operate new office technologies as they are developed and implemented.	
1449.43	Read and analyze incoming memos, submissions, and reports to determine their significance and plan their distribution.	
1449.44	Attend meetings to record minutes.	

Course Description: This course is designed to develop student understanding and skills in such areas such as money management, budgeting, financial goal attainment, credit, insurance, investments and consumer rights and responsibilities. The course culminates in a personal financial literacy workshop requiring students to share their knowledge with others. This course features a variety of activities, assessments (including multiple-choice test items) and resource lists for instructional use. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Cash and Banking Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1451.1	Complete check stubs and checks	
1451.2	Enter appropriate data on a deposit slip	
1451.3	Reconcile a bank statement	
1451.4	Demonstrate familiarity with online and electronic banking procedures	
1451.5	Exhibit understanding of credit cards and/or debit cards	
1451.6	Manage multiple bank accounts and transactions	
1451.7	Reconcile and replenish petty cash funds	

West Virginia Standards

Checking		Complete
Content Skill Sets		Knowledge/ Performance
1451.8	Explain forms of financial exchange (cash, credit, debit, electronic funds transfer, etc.)	
1451.9	Identify types of currency (e.g., coins, paper money, banknotes, etc.)	
1451.10	Describe functions of money (medium of exchange, unit of measure, store of value, incentive)	
1451.11	Explain the time value of money	
1451.12	Investigate account management services that financial institutions provide	
1451.13	Compare the costs of cashing a check with various third parties, such as a bank or credit union, check-cashing services and retail outlets	
1451.14	Investigate account management services that financial institutions provide	
1451.15	Compare the features and costs of personal checking accounts offered by different financial institutions	
1451.16	Demonstrate how to schedule and manage bill payments	
1451.17	Explain how to verify printed and online account statements for accuracy	

1451.18	Summarize the risks and protections of checks, stored value cards, debit cards, and online and mobile payment systems	
1451.19	Compare the features and costs of online and mobile bill payment services offered by different institutions	
1451.20	Develop a personal budget	
1451.21	Describe sources of income (wages/salaries, interest, rent, dividends, transfer payments, gift funds, inheritances, etc.)	
1451.22	Prepare bank account documents (e.g., checks, deposit/withdrawal slips, endorsements, etc.)	
1451.23	Maintain financial records	
1451.24	Reconcile bank statements	

Savings		Complete
Content Skill Sets		Knowledge/ Performance
1451.25	Explain how the saving strategy “pay yourself first” can help people achieve their saving goals	
1451.26	Explain how having a system for financial record-keeping can make it easier to make financial decisions	
1451.27	Describe how saving and investing are different	
1451.28	Recognize the impact of inflation on savings	
1451.29	Understand why it is important to maintain an emergency fund	
1451.30	Explain how external influences (e.g. peers, family, or social media) can impact personal savings decisions	
1451.31	Identify strategies to manage psychological and emotional obstacles to saving	
1451.32	Discuss strategies for avoiding personal triggers that result in deviating from a savings plan	
1451.33	Explain the difference between a checking and savings account	
1451.34	Compare the features of regular savings accounts, money market accounts, and CDs	
1451.35	Select a preferred location for a savings account based on comparison of interest rates and fees at different types of financial institutions	

Economics		Complete
Content Skill Sets		Knowledge/ Performance
1451.36	Describe consequences associated with decision-making	
1451.37	Discuss how people react to incentives	
1451.38	Explain the impact of limited resources on wealth management	
1451.39	Describe the role of institutions in helping individuals and groups accomplish their goals	
1451.40	Discuss the impact of inflation on personal finance (SP)	
1451.41	Discuss how people react to incentives	
1451.42	Explain the impact of limited resources on wealth management	
1451.43	Describe the role of institutions in helping individuals and groups accomplish their goals	
1451.44	Discuss the impact of inflation on personal finance	

Credit		Complete
---------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
1451.45 Give examples of unsecured and secured loans	
1451.46 Describe the different sources of funding for postsecondary education	
1451.47 Compare federal and private student loans based on interest rates, repayment rules, and other characteristics	
1451.48 Describe the different sources of funding for postsecondary education	
1451.49 Predict the potential consequences of deferred payment of student loans	
1451.50 Discuss the costs and benefits of using alternative financial services relative to traditional banking	
1451.51 Explain how using payday loans can cause a cycle of debt	
1451.52 Explain how credit card grace periods, methods of interest calculation and fees affect borrowing costs	
1451.53 Compare what happens if a borrower fails to make required payments on a secured loan, such as an auto loan or a home mortgage, versus failing to pay a credit card account	
1451.54 Describe how failing to repay a loan can negatively impact a person's finances and life	
1451.55 Explain how a borrower's credit score can impact their cost of credit and their ability to get credit	
1451.56 Create a plan for a person who is having difficulty repaying debt	
1451.57 Demonstrate how to use comparison shopping skills to buy and finance a car	
1451.58 Demonstrate how to negotiate the sales price of a major purchase such as a car or a motorcycle	
1451.59 Calculate how much an auto loan will cost given special offers as well as standard factors such as down payment, APR, and term	
1451.60 Identify the primary organizations that maintain and provide consumer credit reports	
1451.61 Enumerate the components of a credit report and how long each data type is retained	
1451.62 Understand which people or organizations may review your credit report and why	
1451.63 Explain key components of the Fair Credit Reporting Act and how it impacts lenders and borrowers	
1451.64 Understand the importance of reviewing one's credit report and the steps to take to find and dispute errors	
1451.65 Describe how credit score impacts the ability to borrow money and at what rate	
1451.66 Summarize the rules contained in the Equal Credit Opportunity Act	

Taxes		Complete
Content Skill Sets		Knowledge/ Performance
1451.67 Explain where income taxes are collected from and how they provide revenue for public expenses		
1451.68 Read a pay stub and describe the different deductions		
1451.69 Identify what types of income are taxed		
1451.70 Explain the difference between earned and unearned income		
1451.71 Evaluate the benefits and costs of gig employment, such as driving for a cab or delivery service		
1451.72 Discuss the pros and cons of small business ownership as their primary source of income		
1451.73 Differentiate between gross, net, and taxable income		
1451.74 Complete IRS Form W-4		

1451.75	Identify which level(s) of government typically receive(s) the tax revenue for income taxes, payroll taxes, property taxes, and sales taxes	
1451.76	Explain why some income is reported on an IRS Form W-2 and some is reported on an IRS Form 1099, and how that could affect their taxes	
1451.77	Complete a 1040 form to file their tax returns	

Course Description: This course is designed to develop student understanding and skills in such areas as Web page design, including using Web page development software, creating page layouts, adding images and frames, creating elements and components, creating tables, managing files, publishing to the Internet, creating hyperlinks, organizing tasks and using codes (markup languages). Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Coding Procedures and Commands to Develop Webpages		Complete
Content Skill Sets		Knowledge/ Performance
1455.01	Use flowcharts, storyboards, wireframes, site maps, and color logs to plan web pages.	
1455.02	Write, design, and edit web page content.	
1455.03	Utilize HTML to define the content of a web page.	
1455.04	Utilize CSS to define the layout of a web page.	
1455.05	Utilize JavaScript to define the behavior of a web page.	
1455.06	Code a fully functional website, including multiple web pages from a blank document.	
1455.07	Insert text onto a web page.	
1455.08	Insert hyperlinks to external and internal pages.	
1455.09	Demonstrate an understanding of semantic markup (e.g., header, footer, and navigation).	
1455.10	Insert a data table.	
1455.11	Define properties of the data table using coding languages.	
1455.12	Add tooltips and alternate text onto images.	
1455.13	Insert multimedia, including videos, sound clips, and animation, onto the web page.	
1455.14	Insert bulleted and numbered lists.	
1455.15	Differentiate between relative and absolute links.	
1455.16	Link web pages together to form a website.	
1455.17	Link the HTML page to JavaScript and CSS documents.	
1455.18	Evaluate code to ensure that it is valid and properly structured.	
1455.19	Utilize web page development software programs to design web page content and features.	
1455.20	Utilize web page development software programs to publish live web pages.	
1455.21	Create and use interactive forms.	
1455.22	Define how data is represented using XML and JSON	

Backend Webpage Setup and Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1455.23	Run test routines and schedules to ensure that the website is supported on external interfaces and all browser and device types.	
1455.24	Review or update web page content or links in a timely manner, using appropriate tools.	
1455.25	Develop databases that support web applications and websites.	
1455.26	Utilize a server to host web pages on an internal LAN.	
1455.27	Explore domain registrations.	
1455.28	Identify tools required for web publishing and backups, including content management tools.	
1455.29	Describe basic website security concerns and techniques.	

Webpage Development Principals, Procedures, and Best Practices		Complete
Content Skill Sets		Knowledge/ Performance
1455.30	Comply with current copyright, creative commons, fair use and patent laws.	
1455.31	Describe web page publishing best practices concerning layout, delivery of content, and functional behaviors of a web page.	
1455.32	Make website development decisions based on analysis and interpretation of design specifications.	
1455.33	Incorporate technical considerations into website design plans, such as budgets, equipment, performance requirements, or legal issues, including accessibility and privacy.	
1455.34	Differentiate between search engine optimization and search engine marketing techniques.	

Aesthetics and Usability of the Web Page GUI		Complete
Content Skill Sets		Knowledge/ Performance
1455.35	Analyze user needs (client and audience end) to determine design specifications.	
1455.36	Analyze, critique, and evaluate existing web pages for design principles, attractiveness, usability, and functionality.	
1455.37	Maintain an understanding of current web technologies or programming practices through continuing.	
1455.38	Education, reading, or participation in professional conferences, workshops, or groups.	

Evolution of the Internet and Web Sites		Complete
Content Skill Sets		Knowledge/ Performance
1455.39	Describe the history of the Internet.	
1455.40	Identify the creator of the Internet.	
1455.41	Explain the purpose of the Internet.	
1455.42	Demonstrate how the Internet and Web Pages have evolved as technology (software and hardware) has advanced.	

World Wide Web Consortium		Complete
Content Skill Sets		Knowledge/ Performance
1455.43	Describe the purpose of the World Wide Web Consortium.	
1455.44	Identify World Wide Web Consortium resources.	

Course Description: This course is designed to develop student knowledge and skills in programming and designing game and app ideas paper prototyping and other planning techniques. Using various design platforms, programming languages, drawing and animation techniques, students create an interactive demonstration of the games and apps.

Analyze Programming Problems and Flowcharts Solutions		Complete
Content Skill Sets		Knowledge/ Performance
1456.01	Analyze user requirements for a given outcome.	
1456.02	Determine input and output formats for a program.	
1456.03	Determine the flow of data through network.	
1456.04	Identify and describe a data flow diagram.	
1456.05	Identify and describe a process logic diagram.	
1456.06	Describe the system development cycle (i.e., code management, ongoing revisions).	

Skillset Name		Complete
Content Skill Sets		Knowledge/ Performance
1456.07	Determine where data is to be accessed/stored.	
1456.08	Design data storage and layout.	
1456.09	Apply principles of quality, efficient programming.	
1456.10	Explain the importance of a design review.	
1456.11	Apply implementation plans for a new system.	
1456.12	Assess ongoing impact of existing systems	

Code Programs		Complete
Content Skill Sets		Knowledge/ Performance
1456.13	Determine the variables and data types for a program.	
1456.14	Prepare and code routines using structured logic.	
1456.15	Identify various programming languages.	
1456.16	Apply appropriate computer language syntax.	
1456.17	Explain unit testing requirements.	
1456.18	Document appropriate comments and programmer notes.	

Test Programs		Complete
Content Skill Sets		Knowledge/ Performance
1456.19	Explain system testing requirements.	
1456.20	Design and analyze test plan for use in program testing.	
1456.21	Test programs and evaluate results for accuracy.	
1456.22	Correct programming errors discovered during testing.	
1456.23	Identify appropriate debugging tools.	

Maintain Programs		Complete
Content Skill Sets		Knowledge/ Performance
1456.24	Change existing programs when requirements change.	
1456.25	Correct existing program errors.	
1456.26	Update documentation for existing programs.	
1456.27	Provide user instructions on program modifications.	

Complete User Documentation and Technical Writing		Complete
Content Skill Sets		Knowledge/ Performance
1456.28	Develop documentation narrative.	
1456.29	Define data use and storage.	
1456.30	Develop online help for users.	

General Information and Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1456.31	Apply general design and programming concepts.	
1456.32	Identify various hardware platforms and run-time environments.	
1456.33	Identify human aspects in information systems.	
1456.34	Identify general information technology (IT) definitions and terms.	
1456.35	Adhere to best programming practices and methodologies.	
1456.36	Exhibit understanding of data hierarchy, access methods, and manipulation.	

Course Description: This course is designed to develop student knowledge and skills in developing apps and games using more advanced coding and graphic design including both 2D and 3D elements. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts.

Understanding Core Programming		Complete
Content Skill Sets		Knowledge/ Performance
1457.01	Understand computer storage and data types.	
1457.02	Understand computer decision structures.	
1457.03	Identify the appropriate method for handling repetition.	
1457.04	Understand error handling.	

Understanding Object Oriented Programming		Complete
Content Skill Sets		Knowledge/ Performance
1457.05	Understanding Object Oriented Programming.	
1457.06	Understand inheritance.	
1457.07	Understand polymorphism.	
1457.08	Understand encapsulation.	

Understanding General Software Development		Complete
Content Skill Sets		Knowledge/ Performance
1457.09	Understand application life-cycle management.	
1457.10	Understand application life-cycle management.	
1457.11	Understand application life-cycle management.	

Understanding Web Applications		Complete
Content Skill Sets		Knowledge/ Performance
1457.12	Understanding Web Applications.	
1457.13	Understand Microsoft ASP.NET Web application development.	

1457.14	Understand Web hosting.	
1457.15	Understand Web services.	

Understanding Desktop Applications		Complete
Content Skill Sets		Knowledge/ Performance
1457.16	Understanding Desktop Applications.	
1457.17	Understand Windows services.	
1457.18	Update documentation for existing programs.	
1457.19	Provide user instructions on program modifications.	

General Information and Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1457.20	Apply general design and programming concepts.	
1457.21	Identify various hardware platforms and run-time environments.	
1457.22	Identify human aspects in information systems.	
1457.23	Identify general information technology (IT) definitions and terms.	
1457.24	Adhere to best programming practices and methodologies.	
1457.25	Exhibit understanding of data hierarchy, access methods, and manipulation.	

Course Description: The skill sets in this course are representative of the basic knowledge included in a CTE/Business Management and Administrative Cluster. Incorporated into this course are elements of financial knowledge and skills necessary for a career in the E-commerce field, including the buying and selling of goods and services in an alternative setting or location. This course is one of the specialized courses for the Principles of Business program of study. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of student organizations, DECA or FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

West Virginia Standards

E-Commerce		Complete
Content Skill Sets		Knowledge/ Performance
1464.1	Describe the influence of economic, technological, competitive, and global environments on business and industry.	
1464.2	Compare the various forms of business ownership and discuss why individuals accept the risk of entrepreneurship.	
1464.3	Examine the functions of management in business organizations including organizational structure, human resources, and leadership.	
1464.4	Explain the marketing function of business including product development, promotion, pricing, and distribution.	
1464.5	Describe the function of accounting and financial management in an organization and explain the role money and financial institutions play in maintaining a successful business and economic environment.	
1464.6	Distinguish between ecommerce and traditional commerce.	
1464.7	Define and examine the business components and applications of ecommerce, including technology, sales, and marketing.	
1464.8	Examine the importance of business-to-consumer applications, “e-tailing”, and consumer behavior in an online environment.	
1464.9	Understand and apply best practices in ecommerce advertising and marketing strategies.	
1464.10	Examine the legal, ethical, and security implications related to ecommerce.	
1464.11	Develop e-commerce marketing goals and evaluate electronic communications.	

Cash and Banking Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1464.12	Complete check stubs and checks.	
1464.13	Enter appropriate data on a deposit slip.	
1464.14	Reconcile a bank statement.	
1464.15	Demonstrate familiarity with online and electronic banking procedures.	
1464.16	Exhibit understanding of credit cards and/or debit cards.	
1464.17	Manage multiple bank accounts and transactions.	

Financial Information		Complete
Content Skill Sets		Knowledge/ Performance
1464.18	Explain forms of financial exchange (e.g., cash, credit, debit, electronic funds transfer, etc.).	
1464.19	Explain the types of financial markets (e.g. money market, capital market, insurance market, commodities markets, etc.).	
1464.20	Explain the nature and scope of financial globalization.	
1464.21	Describe the techniques used to analyze customer financial information.	
1464.22	Describe budgeting applications.	
1464.23	Demonstrate financial analysis applications.	
1464.24	Identify the factors that impact governance structures.	
1464.25	Discuss the nature of enterprise risk management.	
1464.26	Describe the need for financial information.	
1464.27	Explain the role of finance in business.	
1464.28	Discuss the role of government and semi-government financial institutions (e.g., Small Business Administration, Federal National Mortgage Association, Federal Housing Administration, etc.).	
1464.29	Explain types of financial markets (e.g., money market, capital market, insurance market, commodities markets, etc.).	
1464.30	Describe the foreign exchange market.	
1464.31	Describe types of financial-services providers.	
1464.32	Discuss employment opportunities in the finance industry.	
1464.33	Explain the nature of operating budgets.	
1464.34	Forecast sales.	
1464.35	Develop company's/department's budget.	
1464.36	Identify laws impacting corporate finance activities (e.g., Securities Act of 1933, Securities Exchange Act of 1934, Sarbanes-Oxley Act of 2002, etc.).	
1464.37	Explain different aspects of working capital/cash flow management (i.e., cash management, credit management, accounts receivable management, inventory management, and accounts payable management).	
1464.38	Develop a payroll with payroll expenses (e.g., Social Security tax, Medicare tax, FUTA, SUTA, workers' compensation, etc.).	
1464.39	Explain methods used to value inventory (e.g., FIFO, LIFO, average cost, etc.).	
1464.40	Describe the nature of cost-benefit analysis.	
1464.41	Identify types of ownership investments, e.g., stocks, mutual funds, collectibles, and real estate.	
1464.42	Explain the risks and returns associated with ownership investments.	
1464.43	Describe the relationship between economic conditions and financial markets.	
1464.44	Explain how organizations adapt to today's markets.	

Merchandise Inventory		Complete
Content Skill Sets		Knowledge/ Performance
1464.45	Demonstrate knowledge of a merchandise inventory account using perpetual and periodic methods.	

1464.46	Analyze effects on accounts by the purchase of goods.	
1464.47	Calculate the cost of goods sold.	
1464.48	Prepare adjusting entries based on physical inventory.	
1464.49	Calculate for obsolete or shrinkage of inventory.	

Entrepreneurship Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1464.50	Identify unique characteristics of an entrepreneur.	
1464.51	Point out entrepreneurial opportunities.	
1464.52	Evaluate the risks and rewards of an entrepreneur.	

Course Description:

Analyze Programming Problems and Flowcharts Solutions		Complete
Content Skill Sets		Knowledge/ Performance
1465.01	Analyze user requirements for a given outcome.	
1465.02	Determine input and output formats for a program.	
1465.03	Determine the flow of data through network.	
1465.04	Identify and describe a data flow diagram.	
1465.05	Identify and describe a process logic diagram.	
1465.06	Describe the system development cycle (i.e., code management, ongoing revisions).	

Skillset Name		Complete
Content Skill Sets		Knowledge/ Performance
1465.07	Determine where data is to be accessed/stored.	
1465.08	Design data storage and layout.	
1465.09	Apply principles of quality, efficient programming.	
1465.10	Explain the importance of a design review.	
1465.11	Apply implementation plans for a new system.	
1465.12	Assess ongoing impact of existing systems.	

Code Programs		Complete
Content Skill Sets		Knowledge/ Performance
1465.13	Determine the variables and data types for a program.	
1465.14	Prepare and code routines using structured logic.	
1465.15	Identify various programming languages.	
1465.16	Apply appropriate computer language syntax.	
1465.17	Explain unit testing requirements.	
1465.18	Document appropriate comments and programmer notes.	

Test Programs		Complete
----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1465.19	Explain system testing requirements.	
1465.20	Design and analyze test plan for use in program testing.	
1465.21	Test programs and evaluate results for accuracy.	
1465.22	Correct programming errors discovered during testing.	
1465.23	Identify appropriate debugging tools.	

Maintain Programs		Complete
Content Skill Sets		Knowledge/ Performance
1465.24	Change existing programs when requirements change.	
1465.25	Correct existing program errors.	
1465.26	Update documentation for existing programs.	
1465.27	Provide user instructions on program modifications.	

Complete User Documentation and Technical Writing		Complete
Content Skill Sets		Knowledge/ Performance
1465.28	Develop documentation narrative.	
1465.29	Define data use and storage.	
1465.30	Develop online help for users.	

General Information and Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1465.31	Apply general design and programming concepts.	
1465.32	Identify various hardware platforms and run-time environments.	
1465.33	Identify human aspects in information systems.	
1465.34	Identify general information technology (IT) definitions and terms.	
1465.35	Adhere to best programming practices and methodologies.	
1465.36	Exhibit understanding of data hierarchy, access methods, and manipulation.	

Course Description:

Understanding Core Programming		Complete
Content Skill Sets		Knowledge/ Performance
1466.01	Understand computer storage and data types.	
1466.02	Understand computer decision structures.	
1466.03	Identify the appropriate method for handling repetition.	
1466.04	Understand error handling.	

Understanding Object Oriented Programming		Complete
Content Skill Sets		Knowledge/ Performance
1466.05	Understanding Object Oriented Programming.	
1466.06	Understand inheritance.	
1466.07	Understand polymorphism.	
1466.08	Understand encapsulation.	

Understanding General Software Development		Complete
Content Skill Sets		Knowledge/ Performance
1466.09	Understand application life-cycle management.	
1466.10	Understand application life-cycle management.	
1466.11	Understand application life-cycle management.	

Understanding Web Applications		Complete
Content Skill Sets		Knowledge/ Performance
1466.12	Understanding Web Applications.	
1466.13	Understand Microsoft ASP.NET Web application development.	
1466.14	Understand Web hosting.	
1466.15	Understand Web services.	

Understanding Desktop Applications**Complete****Content Skill Sets****Knowledge/
Performance**

1466.16 Understanding Desktop Applications.

1466.17 Understand Windows services.

1466.18 Update documentation for existing programs.

1466.19 Provide user instructions on program modifications.

General Information and Concepts**Complete****Content Skill Sets****Knowledge/
Performance**

1466.20 Apply general design and programming concepts.

1466.21 Identify various hardware platforms and run-time environments.

1466.22 Identify human aspects in information systems.

1466.23 Identify general information technology (IT) definitions and terms.

1466.24 Adhere to best programming practices and methodologies.

1466.25 Exhibit understanding of data hierarchy, access methods, and manipulation.

Course Description: This course is designed to develop student understanding and skills essential to become a financially capable consumer. Emphasis is placed on Career Exploration of Finance Careers and skill development necessary for those careers. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of student organizations, DECA or FBLA. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and content standards and objectives.

Cash and Banking Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1470.1	Complete check stubs and checks.	
1470.2	Enter appropriate data on a deposit slip.	
1470.3	Reconcile a bank statement.	
1470.4	Demonstrate familiarity with online and electronic banking procedures.	
1470.5	Exhibit understanding of credit cards and/or debit cards.	
1470.6	Manage multiple bank accounts and transactions.	

Basic Accounting Knowledge and Skills		Complete
Content Skill Sets		Knowledge/ Performance
1470.7	Exhibit understanding of terminology relating to accounting.	
1470.8	Exhibit understanding of careers in accounting.	
1470.9	Exhibit understanding of regulatory bodies.	
1470.10	Demonstrate ability to use calculator, 10-key, and computer.	
1470.11	Identify various business entities.	
1470.12	Determine classification of accounts and identify normal balances.	
1470.13	Generate and interpret spreadsheets, charts, and graphs.	
1470.14	Distinguish between accounting and finance.	
1470.15	Acquire a foundational knowledge of accounting to understand its nature and scope.	

Financial Information		Complete
------------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1470.16	Calculate the time value of Money.	
1470.17	Explain forms of financial exchange (e.g., cash, credit, debit, electronic funds transfer, etc.).	
1470.18	Explain the types of financial markets (e.g. money market, capital market, insurance market, commodities markets, etc).	
1470.19	Discuss the nature of convergence/ consolidation in the finance industry.	
1470.20	Explain the nature and scope of financial globalization .	
1470.21	Describe the techniques used to analyze customer financial information.	
1470.22	Describe budgeting applications.	
1470.23	Demonstrate financial analysis applications.	
1470.24	Discuss opportunities for building professional relationship in finance.	
1470.25	Identify the factors that impact governance structures.	
1470.26	Discuss the nature of risk control (internal and external).	
1470.27	Discuss the nature of enterprise risk management.	
1470.28	History of money.	
1470.29	Foreign money.	
1470.30	Describe the need for financial information.	
1470.31	Explain the role of finance in business.	
1470.32	Discuss the role of government and semi-government financial institutions (e.g., Small Business Administration, Federal National Mortgage Association, Federal Housing Administration, etc.).	
1470.33	Explain types of financial markets (e.g., money market, capital market, insurance market, commodities markets, etc.).	
1470.34	Describe the foreign exchange market.	
1470.35	Describe types of financial-services providers.	
1470.36	Discuss employment opportunities in the finance industry.	
1470.37	Explain the nature of risk management.	

Personal Finance		Complete
Content Skill Sets		Knowledge/ Performance
1470.38	Understand the fundamental principles of money needed to make financial exchanges).	
1470.39	Describe the sources of income (e.g., wages/salaries, interest, rent, dividends, transfer payments, gift funds, inheritances).	
1470.40	Read a pay stub and describe the different deductions.	
1470.41	Differentiate between gross, net, and taxable income.	
1470.42	Explain forms of Financial exchange (cash, credit, debit, electronic funds transfer, etc.).	
1470.43	Analyze financial needs and goals to determine financial requirements.	
1470.44	Manage personal finances to achieve financial goals.	
1470.45	Understand the use of financial-services providers to aid in financial-goal achievement.	
1470.46	Discuss non-traditional uses for financial information (e.g., lean, sustainability reporting, activity-based costing, etc.).	

1470.47	Explain types of investments.	
1470.48	Explain the need to save and invest.	
1470.49	Explain the purposes and importance of credit.	
1470.50	Explain how credit card grace periods, methods of interest calculation and fees affect borrowing costs.	
1470.51	Compare what happens if a borrower fails to make required payments on a secured loan, such as an auto loan or a home mortgage, versus failing to pay a credit card account.	
1470.52	Explain how a borrower's credit score can impact their cost of credit and their ability to get credit.	
1470.53	Discuss types of loans.	
1470.54	Discuss the nature of retirement planning.	
1470.55	Describe sources of securities information.	
1470.56	Explain the nature of estate planning.	
1470.57	Determine the personal net worth.	
1470.58	Develop a personal budget.	
1470.59	Explain where income taxes are collected from and how they provide revenue for public expenses.	
1470.60	Complete IRS Form W-4.	
1470.61	Complete a 1040 form to file their tax returns.	

Excel		Complete
Content Skill Sets		Knowledge/ Performance
1470.62	Generate and interpret spreadsheets, charts, and graphs.	
1470.63	Create and manage worksheets and workbooks.	
1470.64	Manage data cells and ranges.	
1470.65	Create tables, charts, and objects.	
1470.66	Perform operations with formulas and functions.	
1470.67	Apply custom data formats and layouts.	
1470.68	Create formulas.	

NOTES:

Course Description: This course is designed to develop student understanding and skills in controlling and monitoring the procurement of funds and their utilization in business. Emphasis is placed on the analysis and purchase of securities and investments, as well as the need for effective customer relationship management and information management in finance. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. The West Virginia Standards for Global 21 Learning include the following components: Global 21 Content, Literacy and Numeracy, Entrepreneurship, and Technology Standards. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Merchandise Inventory		Complete
Content Skill Sets		Knowledge/ Performance
1471.1	Demonstrate knowledge of a merchandise inventory account using perpetual and periodic methods.	
1471.2	Analyze effects on accounts by the purchase of goods.	
1471.3	Calculate the cost of goods sold.	
1471.4	Prepare adjusting entries based on physical inventory.	
1471.5	Calculate for obsolete or a shrinkage of inventory.	

Security		Complete
Content Skill Sets		C
1471.6	Exhibit familiarity with the internal controls for sensitive source documents.	
1471.7	Exhibit familiarity with the internal controls for e-commerce.	
1471.8	Exhibit familiarity with internal controls for the protection of company assets and property.	
1471.9	Exhibit familiarity with confidentiality and ethics.	

Accounting		Complete
Content Skill Sets		Knowledge/ Performance
1471.10	Exhibit an in-depth understanding of the concept of accounting (e.g., accounting system, cash accounting method, accrual accounting method, cost accounting, and managerial accounting).	
1471.11	Explain why understanding the accounting cycle is necessary for preparing financial statements and annual reports.	
1471.12	Demonstrate the effects of transactions on the accounting equation.	
1471.13	Explain how following internal accounting control procedures can benefit a business.	
1471.14	Prepare income statements.	

1471.15	Explain the nature of statements of changes in equity.	
1471.16	Prepare balance sheets.	
1471.17	Prepare cash flow statements.	

West Virginia Standards

Managerial Accounting		Complete
Content Skill Sets		Knowledge/ Performance
1471.18	Explain the nature of managerial accounting.	
1471.19	Describe types of costs used in managerial accounting (e.g., direct cost, indirect cost, sunk cost, differential cost, etc.).	
1471.20	Describe marginal analysis techniques and applications.	
1471.21	Discuss the use of variance analysis in managerial accounting.	
1471.22	Discuss the use of cost-volume-profit analysis.	
1471.23	Determine relationships among total revenue, marginal revenue, output, and profit.	
1471.24	Describe types of financial statement analysis (e.g., ratio analysis, trend analysis, etc.).	
1471.25	Describe types of retail/business banking products and services.	

Advanced Financials		Complete
Content Skill Sets		Knowledge/ Performance
1471.26	Calculate financial ratios.	
1471.27	Discuss the use of benchmarks when analyzing ratios.	
1471.28	Interpret financial statements.	
1471.29	Explain the nature of operating budgets.	
1471.30	Forecast sales.	
1471.31	Develop company's/department's budget.	
1471.32	Identify laws impacting corporate finance activities (e.g., Securities Act of 1933, Securities Exchange Act of 1934, Sarbanes-Oxley Act of 2002, etc.).	
1471.33	Explain different aspects of working capital/cash flow management (i.e., cash management, credit management, accounts receivable management, inventory management, and accounts payable management).	
1471.34	Exhibit managing accounts payable.	
1471.35	Analyze the impact of accounts payable schedules on working capital.	
1471.36	Exhibit managing accounts receivable.	

1471.37	Develop a payroll with payroll expenses (e.g., Social Security tax, Medicare tax, FUTA, SUTA, workers' compensation, etc.).	
1471.38	Explain methods used to value inventory (e.g., FIFO, LIFO, average cost, etc.).	
1471.39	Describe the nature of cost-benefit analysis.	
1471.40	Identify types of ownership investments, e.g., stocks, mutual funds, collectibles, and real estate.	
1471.41	Explain the risks and returns associated with ownership investments.	
1471.42	Describe the relationship between economic conditions and financial markets.	
1471.43	Explain how organizations adapt to today's markets.	
1471.44	Describe sources of securities information.	
1471.45	Discuss the nature of convergence/consolidation in the finance industry.	
1471.46	Explain the nature and scope of financial globalization.	

Legal Considerations		Complete
Content Skill Sets		Knowledge/ Performance
1471.47	Explain the purpose of having ethical guidelines in accounting.	
1471.48	Discuss the relationship between an accountant's independence and conflicts of interests.	
1471.49	Discuss the role of confidentiality in accounting.	
1471.50	Exhibit understanding with the technology used in accounting.	
1471.51	Explain legal considerations for accounting.	
1471.52	Discuss the roles and responsibilities of accounting-standards-setting bodies (i.e., SEC, FASB, IASB, GASB).	
1471.53	Discuss elements of fraud that must be in place for fraud to occur (i.e., pressure, opportunity, and rationalization).	

NOTES:

Course Description:

Supervision and Management Careers		Complete
Content Skill Sets		Knowledge/ Performance
1472.01	Identify the characteristics of a manager.	
1472.02	Predict the major demographic and societal trends that will affect supervisors/managers in the future.	
1472.03	Determine the difficulties supervisors/managers face in fulfilling managerial roles.	

Management Functions		Complete
Content Skill Sets		Knowledge/ Performance
1472.04	Identify the functions utilized in management.	
1472.05	Analyze mission and vision statements.	
1472.06	Distinguish amongst strategic, tactical, and operational plans.	

Communication Skills		Complete
Content Skill Sets		Knowledge/ Performance
1472.07	Diagram the communication process.	
1472.08	Compare the formal, informal, horizontal, and vertical channels of communication.	
1472.09	Demonstrate effective communication skills including overcoming barriers to communication.	

Employee Motivation Techniques		Complete
Content Skill Sets		Knowledge/ Performance
1472.10*9639+-	Compare various motivational theories.	
1472.11	Apply Theory X and Theory Y.	
1472.12	Examine motivational factors according to Maslow's Hierarchy of Needs.	
1472.13	Contrast job rotation, job enlargement, and job enrichment.	
1472.14	Research the significance of Total Quality Management (TQM).	
1472.15	Determine the concepts of authority, delegation, responsibility, accountability and power in management.	
1472.16	Differentiate amongst delegation, responsibility, and accountability.	

Entrepreneurship Concepts

Complete

Content Skill SetsKnowledge/
Performance

1472.17	Identify unique characteristics of an entrepreneur.
1472.18	Point out entrepreneurial opportunities.
1472.19	Evaluate the risks and rewards of an entrepreneur.

Business Plan Development

Complete

Content Skill SetsKnowledge/
Performance

1472.20	Outline the sections of a business plan.
1472.21	Write a business plan.
1472.22	Present a business plan.
1472.23	Classify types of business ownership.
1472.24	Research options for business startup including franchising, purchasing an existing business and starting a business from scratch.
1472.25	Explore business opportunities including domestic and international business.
1472.26	Contrast economic systems and measurements.
1472.27	Explain the rights of a free enterprise system.

Marketing Plan

Complete

Content Skill SetsKnowledge/
Performance

1472.28	Develop a demographic study to determine a market.
1472.29	Determine market potential.
1472.30	Classify direct and indirect competition.
1472.31	Distinguish between competitive strengths and weaknesses.
1472.32	Select a proper business location.
1472.33	Contrast the different types of goods and services.
1472.34	Implement the marketing concept.
1472.35	Determine market segmentation and target marketing.
1472.36	Articulate the components of the marketing mix.
1472.37	Identify factors that affect price.
1472.38	Demonstrate different pricing strategies.
1472.39	Compute price.

Financial Plan		Complete
Content Skill Sets		Knowledge/ Performance
1472.40	Outline sections of a financial plan.	
1472.41	Compute capital needs.	
1472.42	Prepare financial statements. (e.g., income statement, balance sheet, cash flow statement).	
1472.43	Examine financial statements to ascertain financial health of a business.	
1472.44	Examine parts of an accounting system.	
1472.45	Compute personal net worth.	
1472.46	Assess personal financial assets available.	
1472.47	Outline potential sources of debt and equity capital.	

Management Plan		Complete
Content Skill Sets		Knowledge/ Performance
1472.48	Develop an organizational chart illustrating a chain of command.	
1472.49	Implement effective small business recruiting.	
1472.50	Prioritize staffing needs.	
1472.51	Debate employment laws.	
1472.52	Diagram results of revenue.	
1472.53	Predict the impact of revenue on inventory, personnel, insurance, and promotion.	
1472.54	Develop inventory procedures.	
1472.55	Explore resources available for small business assistance.	
1472.56	Identify government regulations.	
1472.57	Research business risks and prevention control.	
1472.58	Assess components of a legally enforceable contract.	
1472.59	Debate business ethics and social responsibility.	

Course Description: *ESHIP 1 – Introduction to Entrepreneurship.* This course serves as an introduction into the nature of entrepreneurship, entrepreneurial mindsets, problem framing (identifying, clarifying, and contextualizing problems), and the design thinking process. Attention will be focused on the local community context with a core theme of the discovery of entrepreneurial opportunities. The course will equip students with an overview of entrepreneurship, help assess and develop their entrepreneurial mindset, and provide a foundation of problem framing and customer discovery through the design thinking process. The goal is to provide students with a thorough understanding of the entrepreneurial discovery process and how to apply iterative processes to the development of new ventures.

Economics		Complete
Content Skill Sets		Knowledge/ Performance
1474.1	Identify the impact of small business/entrepreneurship on market economics.	

Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
1474.2	Assess global trends and opportunities for business ventures.	
1474.3	Discuss entrepreneurial discovery processes.	
1474.4	Explain the need for entrepreneurial discovery.	
1474.5	Adapt to changes in the business environment.	
1474.6	Create processes for ongoing opportunity recognition.	
1474.7	Assess the need to use external resources for concept development.	
1474.8	Determine feasibility of venture ideas.	

West Virginia Standards

Introduction to Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
1474.9	Identify entrepreneurship and its impact on the economy.	
1474.10	Create effective written and verbal communication methods.	
1474.11	Identify creative thinking and how entrepreneurs solve problems.	
1474.12	Recognize opportunities in society where creative thinking can solve problems.	
1474.13	Apply business elements to effective problem solving in society.	
1474.14	Display effective presentation skills.	

Entrepreneurial Mindset		Complete
Content Skill Sets		Knowledge/ Performance
1474.15	Define entrepreneurial mindset.	
1474.16	Identify and apply the components of entrepreneurial mindset.	
1474.17	Define deliberate practice.	
1474.18	Apply and develop entrepreneurial mindset through deliberate practice.	
1474.19	Understand the importance of failure and reframing failure within the context of entrepreneurial development.	
1474.20	Describe crucial elements of a quality culture.	

Introduction to Design Thinking		Complete
Content Skill Sets		Knowledge/ Performance
1474.21	Explain the design thinking process.	
1474.22	Discuss problem framing.	
1474.23	Introduce and conduct root cause analyses of an entrepreneurial problem.	
1474.24	Apply the design thinking process.	
1474.25	Assess risks associated with a venture.	
1474.26	Discuss entrepreneurial discovery process.	
1474.27	Create processes for ongoing opportunity recognition.	
1474.28	Evaluate risk-taking opportunities.	

Entrepreneurial Discovery		Complete
Content Skill Sets		Knowledge/ Performance
1474.29	Assess local trends and opportunities for business ventures.	
1474.30	Differentiate between needs and wants.	
1474.31	Discuss the influence of problem framing on venture development.	
1474.32	Deploy problem framing tools and strategies in the entrepreneurial discovery process.	

Design Thinking		Complete
Content Skill Sets		Knowledge/ Performance
1474.33	Explain the design thinking process.	
1474.34	Discuss problem framing.	
1474.35	Introduce and conduct root cause. analyses of an entrepreneurial problem.	

1474.36	Apply the design thinking process..	
1474.37	Assess the need to use external resources for concept development.	
1474.38	Determine feasibility of venture ideas.	
1474.39	Explain the design thinking process.	
1474.40	Discuss problem framing.	
1474.41	Introduce and conduct root cause. analyses of an entrepreneurial problem.	
1474.42	Apply the design thinking process.	

NOTES:

Course Description: *ESHIP 2 – Designing a Desirable Venture.* This course helps students create a business customers *desire* by helping students identify who their customers are, what their unique needs and wants are, and how to build a business that meets them where they are. The course introduces students to the Business Model Canvas (BMC), a tool used to map a business idea. The course will equip students with the ability to target different customers through creative marketing approaches and the development of a value proposition to describe why customers should purchase their product or service. From this, students will build their marketing, branding, and sales strategies for their venture. The course will conclude with an overview of distribution and channels, or how to get the product to customers, as a segway to the continued development of their BMC in ESHIP 3.

Business Law		Complete
Content Skill Sets		Knowledge/ Performance
1475.1	Describe the legal issues affecting businesses.	
1475.2	Select form of business ownership.	

Channel Management		Complete
Content Skill Sets		Knowledge/ Performance
1475.3	Explain the nature of channels of distribution.	

Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
1475.4	Evaluate risk-taking opportunities.	
1475.5	Explain tools used by entrepreneurs for venture planning.	
1475.6	Explain the need for entrepreneurial discovery.	
1475.7	Assess the need to use external resources for concept development.	

Human Resources Management		Complete
Content Skill Sets		Knowledge/ Performance
1475.8	Explain the nature of leadership in organizations.	

Innovation Management		Complete
------------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
1475.9 Determine feasibility of innovation.	
1475.10 Discuss the nature of product development.	

Knowledge Management		Complete
Content Skill Sets	Knowledge/ Performance	
1475.11 Identify techniques that can be used to capture and transfer knowledge in an organization.		

Market Planning		Complete
Content Skill Sets	Knowledge/ Performance	
1475.12 Explain the concept of marketing strategies.		
1475.13 Explain the concept of market and market identification.		
1475.14 Select target market.		
1475.15 Explain the role of situation analysis in the marketing planning process.		
1475.16 Conduct market analysis (market size, area, potential, etc.).		
1475.17 Set marketing goals and objectives.		
1475.18 Develop marketing plan.		

Market-Information Management		Complete
Content Skill Sets	Knowledge/ Performance	
1475.19 Analyze market needs and opportunities.		

West Virginia Standards

Introduction to Business Model Canvas		Complete
Content Skill Sets	Knowledge/ Performance	
1475.20 Understand the business model canvas.		
1475.21 Understand what customer discovery is.		
1475.22 Identify methods of customer discovery.		
1475.23 Explain why customer discovery is vital to a successful product or service.		
1475.24 Understand what a prototype is.		

1475.25	Create a prototype.	
1475.26	Understand the reasoning behind going broad to narrow.	
1475.27	Understand how to make a storyboard.	
1475.28	Identify and types of costs.	
1475.29	Determine cost structures and resource substitutions.	
1475.30	Identify types of revenue.	
1475.31	Determine revenue streams with customer segments.	
1475.32	Create a Pitch Presentation.	
1475.33	Communicate with an audience of stakeholders.	
1475.34	Understand Customer Relations.	

Value Proposition		Complete
Content Skill Sets		Knowledge/ Performance
1475.35	Identify value creation.	
1475.36	Identify customer segments.	
1475.37	Match value proposition with appropriate customer segments.	
1475.38	Identify types of intellectual property.	
1475.39	Define Intellectual Property.	
1475.40	Discuss the importance of Intellectual Property.	
1475.41	Know what pivoting an idea means.	
1475.42	Why is being strategic when pivoting important.	
1475.43	Understand why we fall in love with the problem, not the solution.	
1475.44	Reflect on pivoting and how it contributes to the development of a business, product, or service.	

Customer Segmentation & Relationships		Complete
Content Skill Sets		Knowledge/ Performance
1475.45	Analyze market needs and opportunities.	
1475.46	Identify market segments.	
1475.47	Explain the concept of market and market identification.	
1475.48	Select target market.	
1475.49	Create a brand positioned in mind of customer segment.	
1475.50	Create a product/brand plan.	
1475.51	Describe factors used by marketers to position products/services.	
1475.52	Conduct market analysis (market size, area, potential, etc.).	

Marketing, Branding, & Sales**Complete****Content Skill Sets****Knowledge/
Performance**

1475.53 Identify target markets.

1475.54 Explain management's role in customer relations.

1475.55 Set marketing goals and objectives.

1475.56 Identify a sales conversion strategy.

1475.57 Coordinate activities in the promotional mix.

1475.58 Determine how to increase the lifetime value of customers.

1475.60 Explain the types of digital marketing.

Channels & Distribution**Complete****Content Skill Sets****Knowledge/
Performance**

1475.61 Explain the nature of channels of distribution.

1475.62 Create a distribution strategy.

1475.63 Understand the different types of retailers.

1475.64 Explain factors affecting pricing decisions.

1475.65 Select business location.

1475.66 Create an E-Commerce storefront.

NOTES:

Course Description: *ESHIP 3 – Creating a Business Foundation.* This course emphasizes business feasibility and viability (Is it possible and will it work?) through a focus on how to set up your business using the Business Model Canvas (BMC). The course also introduces entrepreneurial finance as a core component of determining whether a business will be successful. The course will equip students with the required knowledge and skills to identify and secure key resources and partners for a successful launch. An in-depth approach to entrepreneurial finance will prepare students to develop a competitive revenue model and cost structure for their venture with an understanding of start-up, fixed, and ongoing costs. Students will exit the course with a functional financial model and a strong understanding of accounting and finance tools, such as Inuit Quickbooks, that are essential to small business functions. By the conclusion of ESHIP 3, students will have a completed BMC, financial model, and marketing plan for their venture.

Channels Management		Complete
Content Skill Sets		Knowledge/ Performance
1476.1	Explain the nature of channels of distribution.	

Financial Analysis		Complete
Content Skill Sets		Knowledge/ Performance
1476.2	Complete loan package.	
1476.3	Forecast sales.	
1476.4	Calculate financial ratios.	
1476.5	Develop company's/department's budget.	
1476.6	Describe the concept of insurance.	
1476.7	Interpret financial statements.	
1476.8	Explain the purposes and importance of obtaining business credit.	
1476.9	Make critical decisions regarding acceptance of bank cards.	

Economics		Complete
Content Skill Sets		Knowledge/ Performance
1476.10	Explain the organizational design of businesses.	
1476.11	Determine the impact of business cycles on business activities.	
1476.12	Identify the impact of small business/entrepreneurship on market economics.	

Entrepreneurship		Complete
-------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1476.13	Describe considerations in selecting capital resources.	
1476.14	Adapt to changes in a business environment.	
1476.15	Create processes for ongoing opportunity recognition.	
1476.16	Evaluate risk-taking opportunities.	
1476.17	Explain methods/processes for organizing workflow.	
1476.18	Select sources to finance venture creation/start-up.	
1476.19	Explain the complexity of business operations.	
1476.20	Explain tools used by entrepreneurs for venture planning.	
1476.21	Determine feasibility of venture ideas.	

West Virginia Standards

Key Activities		Complete
Content Skill Sets		Knowledge/ Performance
1476.22	Demonstrate understanding of key activities.	
1476.23	Identify methods of evaluation of ideas.	
1476.24	Discuss the process of implementation.	
1476.25	Identify methods of testing key activities.	
1476.26	Identify methods of prototyping.	
1476.27	Explain why prototyping is important.	
1476.28	Discuss evaluation utilizing a SWOT analysis.	
1476.29	Define SWOT analysis.	

Key Resources		Complete
Content Skill Sets		Knowledge/ Performance
1476.30	Explain key resources involved in a business model.	
1476.31	Explain costs associated with key resources.	
1476.32	Explain organization structures and human resources.	
1476.33	Applying for funding.	

Key Partners		Complete
Content Skill Sets		Knowledge/ Performance

1476.34	Explain types of key partners.	
1476.35	Explain supply chain.	
1476.36	Explain supply chain components.	
1476.37	Test effectiveness of supply chain.	

Introduction to Entrepreneurial Finance		Complete
Content Skill Sets		Knowledge/ Performance
1476.38	Develop a P7L statement.	
1476.39	Discuss the importance of market share for entrepreneurial finance.	
1476.40	Conduct a market share analysis.	
1476.41	Explain the difference between a revenue model and a business mode.	
1476.42	Identify different drivers of a business's revenue and costs.	

NOTES:

Course Description: *ESHIP 4 – Launching a Successful Venture.* The final course of the entrepreneurship pathway prepares and supports students in the required steps to officially launch their business in the real world. Students will be familiarized with the technical aspect of the launch, including required business licenses, the best business structure to support their idea, intellectual property to protect their ideas, and who they can connect with to support the growth of their business. The course will also help students gain an understanding of how to manage a new business, including essential functions of business operations, human resources, team development, employee relations, and product/service management. By the conclusion of the pathway, student ventures will be developed to a point where they are capable of being fully launched and funded by external sources.

Business Law		Complete
Content Skill Sets		Knowledge/ Performance
1477.1	Describe the legal issues affecting businesses.	
1477.2	Explain the nature of human resources regulations.	
1477.3	Select form of business ownership.	

Human Recourses Management		Complete
Content Skill Sets		Knowledge/ Performance
1477.4	Coordinate efforts of cross-functional teams to achieve project/company goals.	
1477.5	Explain the nature of remedial action.	
1477.6	Assist employees with prioritizing work responsibilities.	
1477.7	Orient new employees (management’s role).	
1477.8	Explain the nature of leadership in organizations.	
1477.9	Assess employee performance.	
1477.10	Select and hire new employees.	
1477.11	Make critical decisions regarding the acceptance of bank cards.	
1477.12	Determine hiring needs.	
1477.13	Screen job applications/resume.	

Entrepreneurship		Complete
Content Skill Sets		Knowledge/ Performance
1477.14	Describe the use of operating procedures.	
1477.15	Assess global trends and opportunities for business ventures.	
1477.16	Assess risks associated with the venture.	

1477.17	Discuss entrepreneurial discovery processes.	
1477.18	Describe considerations in selecting capital resources.	
1477.19	Adapt to changes in a business environment.	
1477.20	Create processes for ongoing opportunity recognition.	
1477.21	Evaluate risk-taking opportunities.	
1477.22	Explain methods/processes for organizing workflow.	
1477.23	Select sources to finance venture creation/start-up.	
1477.24	Explain the complexity of business operations.	
1477.25	Explain factors to consider in determining a venture's human resources needs.	
1477.26	Explain tools used by entrepreneurs for venture planning.	
1477.27	Explain the need for entrepreneurial discovery.	
1477.28	Assess the need to use external resources for concept development.	
1477.29	Determine feasibility of venture ideas.	

Innovation Management		Complete
Content Skill Sets		Knowledge/ Performance
1477.30	Determine the feasibility of the innovation.	
	Discuss the nature of product development.	

Knowledge Management		Complete
Content Skill Sets		Knowledge/ Performance
1477.31	Identify techniques that can be used to capture and transfer knowledge in an organization.	

Market Planning		Complete
Content Skill Sets		Knowledge/ Performance
1477.32	Explain the concept of marketing strategies.	
1477.33	Explain the concept of market and market identification.	
1477.34	Select target market.	
1477.35	Explain the role of situation analysis in the marketing planning process.	
1477.36	Conduct market analysis (market size, area, potential, etc.).	
1477.37	Set marketing goals and objectives.	
1477.38	Develop a marketing plan.	

Market-Information Management		Complete
--------------------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
1477.39 Analyze market needs and opportunities.	

West Virginia Standards

In Pilot Phase 3 and Currently Under Development		Complete
Content Skill Sets		Knowledge/ Performance
TBD		
TBD		
TBD		

NOTES:

Course Description: This course introduces the student to the skills required for visual communication in the 21st Century. Students will use digital cameras and professional software tools to create publications for print and the web. Units of Study: Page Layout, Desktop Publishing, Digital Publishing.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1514.01	Apply appropriate office safety practices.	
1514.02	Apply appropriate electrical safety practices.	
1514.03	Apply appropriate chemical safety practices.	

Career Overview		Complete
Content Skill Sets		Knowledge/ Performance
1514.04	Identify and describe career options/emerging trends in visual communication and interactive media.	
1514.05	Identify the educational requirements for various visual communications and interactive media design careers.	
1514.06	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1514.07	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1514.08	Demonstrate knowledge of computer terminology.	
1514.09	Identify issues of cyber-safety and personal/professional online confidentiality.	
1514.10	Apply understanding of different platforms and cross-application design.	
1514.11	Identify and operate peripherals.	
1514.12	Demonstrate appropriate knowledge and use of industry-standard software.	
1514.13	Apply basic troubleshooting and maintenance skills.	
1514.14	Demonstrate file management skills.	
1514.15	Identify and explain various formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1514.16	Describe procedures involved with importing and exporting.	
1514.17	Identify legal and ethical responsibilities.	

Interactive Media		Complete
--------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1514.18	Dene interactive media terminology, includingweb-based, video, and audio.	
1514.19	Identify ways that social media marketing impacts the industry.	
1514.20	Identify various types of interactive mediaapplications, including emerging technology.	
1514.21	Correctly use and present various types of interactive media.	
1514.22	Demonstrate awareness of governmental and industrial regulations.	
1514.23	Investigate ways to promote a new website.	

Visual Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1514.24	Define and use the elements of design (e.g.,line, space, shape, texture, form, value, and color).	
1514.25	Apply elements of a successful layout, including communication, organization,and attractiveness.	
1514.26	Evaluate/critique the effectiveness of visualcommunications and interactive media design.	

Color Theory		Complete
Content Skill Sets		Knowledge/ Performance
1514.27	Apply basic principles of color, includingprimary, secondary, and tertiary colors.	
1514.28	Explain and apply additive and subtractive color principles.	

Materials and Tools		Complete
Content Skill Sets		Knowledge/ Performance
1514.29	Identify and properly use manual tools.	
1514.30	Identify and properly use electronic tools (e.g.,hardware).	
1514.31	Identify and properly use presentation materials.	

Course Description: This course introduces the student to the skills required to produce professional quality photographs. Students will use DSLR cameras, various accessories such as filters and tripods, photo editing software, and an inkjet printer. Emphasis will be placed on photojournalism and advertising photography. Units of Study: Camera Basics, Photo Editing, Photo Printing.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1515.01	Apply appropriate office safety practices.	
1515.02	Apply appropriate electrical safety practices.	
1515.03	Apply appropriate chemical safety practices.	

Career Overview		Complete
Content Skill Sets		Knowledge/ Performance
1515.04	Identify and describe career options/emerging trends in visual communication and interactive media.	
1515.05	Identify the educational requirements for various visual communications and interactive media design careers.	
1515.06	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1515.07	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1515.08	Demonstrate knowledge of computer terminology.	
1515.09	Demonstrate appropriate knowledge and use of industry-standard software.	
1515.10	Apply basic troubleshooting and maintenance skills.	
1515.11	Demonstrate file management skills.	
1515.12	Identify and explain various file formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1515.13	Describe procedures involved with importing and exporting.	
1515.14	Identify legal and ethical responsibilities.	
1515.15	Demonstrate appropriate knowledge and use of industry-standard software.	
1515.16	Apply basic troubleshooting and maintenance skills.	
1515.17	Demonstrate file management skills.	

Interactive Media		Complete
--------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1515.18	Dene interactive media terminology, includingweb-based, video, and audio.	
1515.19	Identify ways that social media marketing impacts the industry.	
1515.20	Identify various types of interactive mediaapplications, including emerging technology.	
1515.21	Correctly use and present various types of interactive media.	
1515.22	Demonstrate awareness of governmental and industrial regulations.	
1515.23	Investigate ways to promote a new website.	

Visual Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1515.24	Define and use the elements of design (e.g.,line, space, shape, texture, form, value, and color).	
1515.25	Define and use the principles of design (e.g.,unity, emphasis, balance, and rhythm).	
1515.26	Evaluate/critique the effectiveness of visualcommunications and interactive media design.	

Color Theory		Complete
Content Skill Sets		Knowledge/ Performance
1515.27	Apply basic principles of color, includingprimary, secondary, and tertiary colors.	
1515.28	Explain and apply additive and subtractive color principles.	

Materials and Tools		Complete
Content Skill Sets		Knowledge/ Performance
1515.29	Identify and properly use manual tools.	
1515.30	Identify and properly use electronic tools (e.g.,hardware).	
1515.31	Identify and properly use presentation materials.	

Course Description: This course introduces the student to the skills required for multimedia production. Students will utilize digital camcorders as well as video editing, and sound recording software to create multimedia projects. Areas of study include video and sound editing, and motion graphics and effects. Units of Study: Videography Basics, Video Editing, Motion Graphics.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1516.01	Apply appropriate office safety practices.	
1516.02	Apply appropriate electrical safety practices.	
1516.03	Apply appropriate chemical safety practices.	

Career Overview		Complete
Content Skill Sets		Knowledge/ Performance
1516.04	Identify and describe career options/emerging trends in visual communication and interactive media.	
1516.05	Identify the educational requirements for various visual communications and interactive media design careers.	
1516.06	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1516.07	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1516.08	Demonstrate knowledge of computer terminology.	
1516.09	Demonstrate appropriate knowledge and use of industry-standard software.	
1516.10	Apply basic troubleshooting and maintenance skills.	
1516.11	Demonstrate management skills.	
1516.12	Identify and explain various formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1516.13	Describe procedures involved with importing and exporting.	
1516.14	Identify legal and ethical responsibilities.	
1516.15	Demonstrate appropriate knowledge and use of industry-standard software.	
1516.16	Apply basic troubleshooting and maintenance skills.	
1516.17	Demonstrate management skills.	

Interactive Media		Complete
Content Skill Sets		Knowledge/ Performance
1516.18	Demonstrate interactive media terminology, including web-based, video, and audio.	
1516.19	Identify ways that social media marketing impacts the industry.	
1516.20	Identify various types of interactive media applications, including emerging technology.	
1516.21	Correctly use and present various types of interactive media.	
1516.22	Demonstrate awareness of governmental and industrial regulations.	
1516.23	Investigate ways to promote a new website.	

Visual Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1516.24	Define and use the elements of design (e.g., line, space, shape, texture, form, value, and color).	
1516.25	Define and use the principles of design (e.g., unity, emphasis, balance, and rhythm).	
1516.26	Evaluate/critique the effectiveness of visual communications and interactive media design.	

Color Theory		Complete
Content Skill Sets		Knowledge/ Performance
1516.27	Apply basic principles of color, including primary, secondary, and tertiary colors.	
1516.28	Explain and apply additive and subtractive color principles.	

Materials and Tools		Complete
Content Skill Sets		Knowledge/ Performance
1516.29	Identify and properly use manual tools.	
1516.30	Identify and properly use electronic tools (e.g., hardware).	
1516.31	Identify and properly use presentation materials.	

Course Description: This course introduces students to the emerging field of cross-media publishing. Students will explore the use of blogging, video sharing, and social media services as journalism and marketing tools. Students will research, write, and produce multimedia content to be disseminated across various platforms (print, video, and digital publishing). Units of Study: 21st Century Publishing, Marketing across Media, Content Marketing

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1517.01	Apply appropriate office safety practices.	
1517.02	Apply appropriate electrical safety practices.	
1517.03	Apply appropriate chemical safety practices.	

Career Overview		Complete
Content Skill Sets		Knowledge/ Performance
1517.04	Identify and describe career options/emerging trends in visual communication and interactive media.	
1517.05	Identify the educational requirements for various visual communications and interactive media design careers.	
1517.06	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1517.07	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1517.08	Demonstrate knowledge of computer terminology.	
1517.09	Identify and operate peripherals.	
1517.10	Demonstrate appropriate knowledge and use of industry-standard software.	
1517.11	Apply basic troubleshooting and maintenance skills.	
1517.12	Identify and explain various file formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1517.13	Describe procedures involved with importing and exporting.	
1517.14	Identify legal and ethical responsibilities.	
1517.15	Demonstrate appropriate knowledge and use of industry-standard software.	
1517.16	Apply basic troubleshooting and maintenance skills.	
1517.17	Demonstrate file management skills.	

Interactive Media		Complete
Content Skill Sets		Knowledge/ Performance
1517.18	Dene interactive media terminology, includingweb-based, video, and audio.	
1517.19	Identify ways that social media marketing impacts the industry.	
1517.20	Identify various types of interactive mediaapplications, including emerging technology.	
1517.21	Correctly use and present various types of interactive media.	
1517.22	Demonstrate basic principles of web design,including fundamental coding.	
1517.23	Demonstrate basic principles of animation.	

Visual Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1517.24	Apply elements of a successful layout, including communication, organization,and attractiveness.	
1517.25	Define and use the principles of design (e.g.,unity, emphasis, balance, and rhythm).	
1517.26	Evaluate/critique the effectiveness of visualcommunications and interactive media design.	

Color Theory		Complete
Content Skill Sets		Knowledge/ Performance
1517.27	Apply basic principles of color, includingprimary, secondary, and tertiary colors.	
1517.28	Explain and apply additive and subtractive color principles.	
1517.29	Apply correct usage of RGB, CMYK, HEX, and spot color.	
1517.30	Identify characteristics of color (e.g., tint, hue, saturation, shade, and value)	

Typography		Complete
Content Skill Sets		Knowledge/ Performance
1517.31	Demonstrate knowledge of typographic terminology.	
1517.32	Explain the anatomy of type.	
1517.33	Identify characteristics of type styles and families.	
1517.34	Explain and appropriately use various types of measurements and tools.	
1517.35	Identify and use proofreader's marks.	
1517.36	Diagnose typography design problems (e.g.,kerning, tracking, leading).	
1517.37	Choose and apply appropriate typeface per various jobs.	

Materials and Tools

Complete

Content Skill Sets

**Knowledge/
Performance**

1517.38 Identify and properly use manual tools.

1517.39 Identify and properly use electronic tools (e.g., hardware).

1517.40 Identify and properly use presentation materials.

Course Description: This course introduces the student to the fundamentals of storytelling for Multimedia Publishing. Students will explore various methods of researching stories, identifying their audience, and writing for specific audiences. Students will also identify and discuss various ethical and legal issues related to media production including freedom of the press, censorship, ethical standards and journalistic responsibilities. Units of Study: Research Methods, Media Writing, Media Ethics and Legal Issues

Research Methods		Complete
Content Skill Sets		Knowledge/ Performance
1518.01	Demonstrate knowledge of finding stories, collecting information, and verifying information.	
1518.02	Identify online and local resources to find story ideas.	
1518.03	Collaborate to brainstorm story ideas.	
1518.04	Maintain a notebook of story ideas.	
1518.05	Analyze story ideas to determine if they are newsworthy.	
1518.06	Utilize note-taking software such as Microsoft OneNote or Evernote to organize information, ideas, and clippings.	
1518.07	Conduct interviews to gather material.	
1518.08	Utilize a voice recorder, cell phone, or similar device to assist note-taking during interviews.	
1518.09	Transcribe voice recordings.	
1518.10	Consult secondary sources for corroboration and fact-checking.	

Media Writing**Complete****Content Skill Sets****Knowledge/
Performance**

1518.11	Demonstrate knowledge of types of media stories (news, human interest, how-to, special interest, opinion, entertainment, advertising, etc.), writing for different audiences, the differences between writing scripts for audio/visual and text for articles, and the principles of journalism writing (accuracy, completeness, efficiency, and precision).	
1518.12	Analyze various media stories to determine the type of each story.	
1518.13	Describe the audience for each story.	
1518.14	Analyze story ideas to determine if they are newsworthy.	
1518.15	Write scripts for video recordings that include time restraints and directions for video cuts, graphics, music, effects, etc.	
1518.16	Write text articles that demonstrate accurate spelling and grammar.	
1518.17	Convert stories to appropriate formats for different media.	
1518.18	Write stories and modify them to suit different media.	
1518.19	Write headlines and advertising copy to promote stories.	
1518.20	Use professional word processing software.	
1518.21	Demonstrate keyboard typing proficiency.	
1518.22	Use a digital dictionary and spell checker.	
1518.23	Proofread and make corrections to stories.	

Media, Ethics, and Legal Issues**Complete****Content Skill Sets****Knowledge/
Performance**

1518.24	Demonstrate knowledge of the journalistic integrity, rights and responsibilities of the media, legal and ethical issues related to the media, and professional organizations such as the Society of Professional Journalists.	
1518.25	Examine what constitutes journalistic integrity.	
1518.26	Investigate issues related to freedom of the press granted by the First Amendment.	
1518.27	Examine intellectual property and copyright law.	
1518.28	Identify examples of Fair Use.	
1518.29	Investigate professional organizations related to media jobs.	

Safety**Complete****Content Skill Sets****Knowledge/
Performance**

1518.30	Apply appropriate office safety practices.	
1518.31	Apply appropriate electrical safety practices.	
1518.32	Apply appropriate chemical safety practices.	

Career Overview**Complete****Content Skill Sets****Knowledge/
Performance**

1518.33	Identify and describe career options/emerging trends in visual communication and interactive media.	
1518.34	Identify the educational requirements for various visual communications and interactive media design careers.	
1518.35	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1518.36	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy**Complete****Content Skill Sets****Knowledge/
Performance**

1518.27	Demonstrate knowledge of computer terminology.	
1518.28	Identify and operate peripherals.	
1518.28	Demonstrate appropriate knowledge and use of industry-standard software.	
1518.30	Apply basic troubleshooting and maintenance skills.	
1518.31	Identify and explain various file formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1518.32	Describe procedures involved with importing and exporting.	
1518.33	Identify legal and ethical responsibilities.	
1518.34	Demonstrate appropriate knowledge and use of industry-standard software.	
1518.35	Apply basic troubleshooting and maintenance skills.	
1518.36	Demonstrate file management skills.	

Course Description: This course will introduce the student to the multimedia designer’s role in the information age. Students will collect data and analyze that information to determine how to communicate it visually. Students will create various types of forms and infographics. Units of Study: Form Layout, Data Visualization, Infographic Layout

Form Layout		Complete
Content Skill Sets		Knowledge/ Performance
1519.01	Identify form layout best practices, the differences between input types, and the use of tables for layout structure.	
1519.02	Compare input types and determine how each is used.	
1519.03	Organize information to group related questions.	
1519.04	Determine input type for each question.	
1519.05	Use tables to organize and align the layouts of forms.	
1519.06	Apply interactive form fields in a page layout program such as InDesign.	
1519.07	Output an interactive form a PDF (Portable Document Format) file.	
1519.08	Use an online editing tool to create a web form.	
1519.09	Save data collected from a form into a spreadsheet.	

Data Visualization		Complete
Content Skill Sets		Knowledge/ Performance
1519.10	Demonstrate knowledge of the various forms of displaying information graphically, and the importance of communicating analytics graphically.	
1519.11	Investigate common examples of data visualization such as charts, graphs, weather forecasts, data maps, etc.	
1519.12	Determine an appropriate type of graphic representation (pie chart, bar graph, etc.) for a given set of data.	
1519.13	Use illustration, word processing, or spreadsheet software to convert data into a graphical format.	
1519.14	Format the graphic for both print and digital output.	

Infographic Layout		Complete
Content Skill Sets		Knowledge/ Performance
1519.15	Demonstrate knowledge of the major types of infographics and static, animated, and interactive infographic formats.	
1519.16	Investigate the major types of infographics.	
1519.17	Use illustration software to create various types of infographics for print.	
1519.18	Use animation software to create an animated infographic for video.	
1519.19	Convert infographics for the web and mobile devices.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1519.20	Apply appropriate office safety practices.	
1519.21	Apply appropriate electrical safety practices.	
1519.22	Apply appropriate chemical safety practices.	

Career Overview		Complete
Content Skill Sets		Knowledge/ Performance
1519.23	Identify and describe career options/emerging trends in visual communication and interactive media.	
1519.24	Identify the educational requirements for various visual communications and interactive media design careers.	
1519.25	Identify elements of a professional portfolio for the visual communications and interactive media design field.	
1519.26	Identify ways in which visual communication and interactive media design can be used in business.	

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1519.27	Demonstrate knowledge of computer terminology.	
1519.28	Identify and operate peripherals.	
1519.29	Demonstrate appropriate knowledge and use of industry-standard software.	
1519.30	Apply basic troubleshooting and maintenance skills.	
1519.31	Identify and explain various file formats (e.g., .pdf, .jpg, .gif, .eps, .png).	
1519.32	Describe procedures involved with importing and exporting.	
1519.33	Identify legal and ethical responsibilities.	
1519.34	Demonstrate appropriate knowledge and use of industry-standard software.	
1519.35	Apply basic troubleshooting and maintenance skills.	
1519.36	Demonstrate file management skills.	

Course Description: A one-credit course designed to prepare students for careers and further study in aerospace technologies and related industries. Students apply fundamental concepts and principles of atmospheric flight to authentic situations. Emphasis is placed on propulsion systems, ballistic projectiles, and airplane wing design.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1540	AC Aerospace Engineering I
1541	AC Aerospace Engineering II
1542	AC Aerospace Engineering III
1543	AC Aerospace Engineering IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1540.01	Use social media appropriately and effectively, in personal and professional situations.	
1540.02	Exhibit flexibility and adaptability.	
1540.03	Demonstrate leadership skills.	
1540.04	Recognize others for their contributions.	
1540.05	Demonstrate group process techniques.	
1540.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1540.07	Exhibit professional practices.	
1540.08	Apply for employment.	
1540.09	Demonstrate employability skills needed to keep a job.	
1540.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1540.11	Exhibit responsibility.	
1540.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1540.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1540.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1540.15	Ensure healthful working conditions.	
1540.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1540.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1540.18	Exhibit interest in making the organization more effective and productive.	
1540.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1540.20	Explain the necessity and benefits/disadvantages of organizational change.	
1540.21	Identify ways to reduce or prevent injuries and illness.	
1540.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1540.23	Ensure safe working conditions.	
1540.24	Demonstrate safe use of tools and equipment.	
1540.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1540.26	Participate in group or team discussions.	
1540.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1540.28	Explain the importance of teamwork to the overall operation of the business.	

1540.29	Perform work tasks in a team.	
1540.30	Look for ways to help others.	
1540.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1540.32	Perform math operations using whole numbers, fractions, and percentages.	
1540.33	Gather information.	
1540.34	Provide clear documentation of assignments, goals, and timelines.	
1540.35	Define the problem.	
1540.36	Analyze the problem and identify the solution.	
1540.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1540.38	Identify the company's mission and the individual employee's contribution to that mission.	
1540.39	Interpret organizational policies and procedures.	
1540.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
1540.41	Engage in conversations with coworkers, supervisors, and clients.	
1540.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1540.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1540.44	Interpret and comprehend technical and general interest in written material.	
1540.45	Identify how the company functions within the broad world of business, industry, and service.	
1540.46	Identify ways in which the individual employee represents the organization.	
1540.47	Apply industry quality standards and practices.	

Accountability**Complete****Content Skill Sets****Knowledge/
Performance**

1540.48	Identify aspects of owning or starting up a small business.	
1540.49	Share information using a range of appropriate communications technologies.	
1540.50	Explain the importance of using data to improve company productivity.	

Course Description: A one-credit course designed to deepen students' preparation for careers and further study in aerospace technologies and related industries. Students apply advanced principles and theories of flight to authentic projects related to atmospheric and space flight. Emphasis is placed on pneumatic projectiles, aerodynamic forces, and quality management.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1540	AC Aerospace Engineering I
1541	AC Aerospace Engineering II
1542	AC Aerospace Engineering III
1543	AC Aerospace Engineering IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, go to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1541.01	Use social media appropriately and effectively, in personal and professional situations.	
1541.02	Exhibit flexibility and adaptability.	
1541.03	Demonstrate leadership skills.	
1541.04	Recognize others for their contributions.	
1541.05	Demonstrate group process techniques.	
1541.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1541.07	Exhibit professional practices.	
1541.08	Apply for employment.	
1541.09	Demonstrate employability skills needed to keep a job.	
1541.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System	Complete

Content Skill Sets		Knowledge/ Performance
1541.11	Exhibit responsibility.	
1541.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1541.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1541.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1541.15	Ensure healthful working conditions.	
1541.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1541.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1541.18	Exhibit interest in making the organization more effective and productive.	
1541.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1541.20	Explain the necessity and benefits/disadvantages of organizational change.	
1541.21	Identify ways to reduce or prevent injuries and illness.	
1541.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1541.23	Ensure safe working conditions.	
1541.24	Demonstrate safe use of tools and equipment.	
1541.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1541.26	Participate in group or team discussions.	
1541.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1541.28	Explain the importance of teamwork to the overall operation of the business.	
1541.29	Perform work tasks in a team.	

1541.30	Look for ways to help others.	
1541.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1541.32	Perform math operations using whole numbers, fractions, and percentages.	
1541.33	Gather information.	
1541.34	Provide clear documentation of assignments, goals, and timelines.	
1541.35	Define the problem.	
1541.36	Analyze the problem and identify the solution.	
1541.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1541.38	Identify the company's mission and the individual employee's contribution to that mission.	
1541.39	Interpret organizational policies and procedures.	
1541.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
1541.41	Engage in conversations with coworkers, supervisors, and clients.	
1541.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1541.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1541.44	Interpret and comprehend technical and general interest in written material.	
1541.45	Identify how the company functions within the broad world of business, industry, and service.	
1541.46	Identify ways in which the individual employee represents the organization.	
1541.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1541.48	Identify aspects of owning or starting up a small business.	
1541.49	Share information using a range of appropriate communications technologies.	
1541.50	Explain the importance of using data to improve company productivity.	

Course Description: A one-credit course that allows students to further enhance their knowledge of space through a series of projects that include in-depth research, concept application, and prototype development. Students will develop a capstone project, complete a prototype and defend its development before a selected audience.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1540	AC Aerospace Engineering I
1541	AC Aerospace Engineering II
1542	AC Aerospace Engineering III
1543	AC Aerospace Engineering IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1542.01	Use social media appropriately and effectively, in personal and professional situations.	
1542.02	Exhibit flexibility and adaptability.	
1542.03	Demonstrate leadership skills.	
1542.04	Recognize others for their contributions.	
1542.05	Demonstrate group process techniques.	
1542.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1542.07	Exhibit professional practices.	
1542.08	Apply for employment.	
1542.09	Demonstrate employability skills needed to keep a job.	
1542.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1542.11	Exhibit responsibility.	
1542.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1542.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1542.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1542.15	Ensure healthful working conditions.	
1542.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1542.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1542.18	Exhibit interest in making the organization more effective and productive.	
1542.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1542.20	Explain the necessity and benefits/disadvantages of organizational change.	
1542.21	Identify ways to reduce or prevent injuries and illness.	
1542.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1542.23	Ensure safe working conditions.	
1542.24	Demonstrate safe use of tools and equipment.	
1542.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1542.26	Participate in group or team discussions.	
1542.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1542.28	Explain the importance of teamwork to the overall operation of the business.	

1542.29	Perform work tasks in a team.	
1542.30	Look for ways to help others.	
1542.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1542.32	Perform math operations using whole numbers, fractions, and percentages.	
1542.33	Gather information.	
1542.34	Provide clear documentation of assignments, goals, and timelines.	
1542.35	Define the problem.	
1542.36	Analyze the problem and identify the solution.	
1542.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1542.38	Identify the company's mission and the individual employee's contribution to that mission.	
1542.39	Interpret organizational policies and procedures.	
1542.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
1542.41	Engage in conversations with coworkers, supervisors, and clients.	
1542.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1542.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1542.44	Interpret and comprehend technical and general interest in written material.	
1542.45	Identify how the company functions within the broad world of business, industry, and service.	
1542.46	Identify ways in which the individual employee represents the organization.	
1542.47	Apply industry quality standards and practices.	

Accountability**Complete****Content Skill Sets****Knowledge/
Performance**

1542.48	Identify aspects of owning or starting up a small business.	
1542.49	Share information using a range of appropriate communications technologies.	
1542.50	Explain the importance of using data to improve company productivity.	

Course Description: A one-credit course designed to enhance students' knowledge of flight. Students will be engaged in projects that require extensive research, concept application, and prototype development. The capstone project will be presented and defended before a select panel of reviewers.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1540	AC Aerospace Engineering I
1541	AC Aerospace Engineering II
1542	AC Aerospace Engineering III
1543	AC Aerospace Engineering IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1543.01	Use social media appropriately and effectively, in personal and professional situations.	
1543.02	Exhibit flexibility and adaptability.	
1543.03	Demonstrate leadership skills.	
1543.04	Recognize others for their contributions.	
1543.05	Demonstrate group process techniques.	
1543.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1543.07	Exhibit professional practices.	
1543.08	Apply for employment.	
1543.09	Demonstrate employability skills needed to keep a job.	
1543.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System**Complete****Content Skill Sets****Knowledge/
Performance**

1543.11	Exhibit responsibility.	
1543.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1543.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone**Complete****Content Skill Sets****Knowledge/
Performance**

1543.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1543.15	Ensure healthful working conditions.	
1543.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment**Complete****Content Skill Sets****Knowledge/
Performance**

1543.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1543.18	Exhibit interest in making the organization more effective and productive.	
1543.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas**Complete****Content Skill Sets****Knowledge/
Performance**

1543.20	Explain the necessity and benefits/disadvantages of organizational change.	
1543.21	Identify ways to reduce or prevent injuries and illness.	
1543.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1543.23	Ensure safe working conditions.	
1543.24	Demonstrate safe use of tools and equipment.	
1543.25	Practice environmental conservation and safety.	

Work Place Teams**Complete****Content Skill Sets****Knowledge/
Performance**

1543.26	Participate in group or team discussions.	
1543.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1543.28	Explain the importance of teamwork to the overall operation of the business.	

1543.29	Perform work tasks in a team.	
1543.30	Look for ways to help others.	
1543.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1543.32	Perform math operations using whole numbers, fractions, and percentages.	
1543.33	Gather information.	
1543.34	Provide clear documentation of assignments, goals, and timelines.	
1543.35	Define the problem.	
1543.36	Analyze the problem and identify the solution.	
1543.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1543.38	Identify the company's mission and the individual employee's contribution to that mission.	
1543.39	Interpret organizational policies and procedures.	
1543.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
1543.41	Engage in conversations with coworkers, supervisors, and clients.	
1543.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1543.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1543.44	Interpret and comprehend technical and general interest in written material.	
1543.45	Identify how the company functions within the broad world of business, industry, and service.	
1543.46	Identify ways in which the individual employee represents the organization.	
1543.47	Apply industry quality standards and practices.	

Accountability

Complete

Content Skill Sets

**Knowledge/
Performance**

1543.48	Identify aspects of owning or starting up a small business.	
1543.49	Share information using a range of appropriate communications technologies.	
1543.50	Explain the importance of using data to improve company productivity.	

Course Description: This course is designed to develop student knowledge and skills and engage students who are curious about systems that acquire, store and communicate data for a variety of career fields and how it relates to their world. In this project-based course, students will learn how to work collaboratively in teams to problem solve, think critically, be creative and communicate with each other and business partners. Students will participate in real-world experiences such as computer forensics, global businesses, animation and identity theft. The content covered will include the following topics: methods used in computer forensics, online business collaboration, social media, and digital citizenship. This is the first course in the Informatics pathway and focuses on providing students with foundational knowledge and skills needed to connect in the digital world. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1550	AC Informatics I
1551	AC Informatics II
1552	AC Informatics III
1553	AC Informatics IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1550.01	Use social media appropriately and effectively, in personal and professional situations.	
1550.02	Exhibit flexibility and adaptability.	
1550.03	Demonstrate leadership skills.	
1550.04	Recognize others for their contributions.	
1550.05	Demonstrate group process techniques.	
1550.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1550.07	Exhibit professional practices.	
1550.08	Apply for employment.	
1550.09	Demonstrate employability skills needed to keep a job.	
1550.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1550.11	Exhibit responsibility.	
1550.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1550.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1550.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1550.15	Ensure healthful working conditions.	
1550.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1550.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1550.18	Exhibit interest in making the organization more effective and productive.	
1550.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1550.20	Explain the necessity and benefits/disadvantages of organizational change.	
1550.21	Identify ways to reduce or prevent injuries and illness.	
1550.22	Identify efficient, effective, and ethical uses of technology in the workplace.	

1550.23	Ensure safe working conditions.	
1550.24	Demonstrate safe use of tools and equipment.	
1550.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1550.26	Participate in group or team discussions.	
1550.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1550.28	Explain the importance of teamwork to the overall operation of the business.	
1550.29	Perform work tasks in a team.	
1550.30	Look for ways to help others.	
1550.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1550.32	Perform math operations using whole numbers, fractions, and percentages.	
1550.33	Gather information.	
1550.34	Provide clear documentation of assignments, goals, and timelines.	
1550.35	Define the problem.	
1550.36	Analyze the problem and identify the solution.	
1550.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1550.38	Identify the company's mission and the individual employee's contribution to that mission.	
1550.39	Interpret organizational policies and procedures.	
1550.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1550.41	Engage in conversations with coworkers, supervisors, and clients.	
1550.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	

1550.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	
---------	---	--

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1550.44	Interpret and comprehend technical and general interest in written material.	
1550.45	Identify how the company functions within the broad world of business, industry, and service.	
1550.46	Identify ways in which the individual employee represents the organization.	
1550.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1550.48	Identify aspects of owning or starting up a small business.	
1550.49	Share information using a range of appropriate communications technologies.	
1550.50	Explain the importance of using data to improve company productivity.	

Course Description: This course is designed to develop student knowledge and skills and engage students who are interested in working collaboratively in teams on real world challenges such as designing, implementing, and testing programming languages, mobile devices, gaming and digital simulations, instructional technologies, mobile applications, health informatics solutions and applications of GPS/GIS technologies. In this project-based course, students will demonstrate their learned knowledge and skills by presenting their new and innovative ideas, techniques and solutions to business and industry partners. This is the second course in the Informatics pathway and focuses on providing students with foundational knowledge and skills they need to design in the digital world. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1550	AC Informatics I
1551	AC Informatics II
1552	AC Informatics III
1553	AC Informatics IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1551.01	Use social media appropriately and effectively, in personal and professional situations.	
1551.02	Exhibit flexibility and adaptability.	
1551.03	Demonstrate leadership skills.	
1551.04	Recognize others for their contributions.	
1551.05	Demonstrate group process techniques.	
1551.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1551.07	Exhibit professional practices.	

1551.08	Apply for employment.	
1551.09	Demonstrate employability skills needed to keep a job.	
1551.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1551.11	Exhibit responsibility.	
1551.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1551.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1551.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1551.15	Ensure healthful working conditions.	
1551.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1551.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1551.18	Exhibit interest in making the organization more effective and productive.	
1551.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1551.20	Explain the necessity and benefits/disadvantages of organizational change.	
1551.21	Identify ways to reduce or prevent injuries and illness.	
1551.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1551.23	Ensure safe working conditions.	
1551.24	Demonstrate safe use of tools and equipment.	
1551.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1551.26	Participate in group or team discussions.	
1551.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1551.28	Explain the importance of teamwork to the overall operation of the business.	
1551.29	Perform work tasks in a team.	
1551.30	Look for ways to help others.	
1551.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1551.32	Perform math operations using whole numbers, fractions, and percentages.	
1551.33	Gather information.	
1551.34	Provide clear documentation of assignments, goals, and timelines.	
1551.35	Define the problem.	
1551.36	Analyze the problem and identify the solution.	
1551.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1551.38	Identify the company's mission and the individual employee's contribution to that mission.	
1551.39	Interpret organizational policies and procedures.	
1551.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1551.41	Engage in conversations with coworkers, supervisors, and clients.	
1551.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1551.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1551.44	Interpret and comprehend technical and general interest in written material.	
1551.45	Identify how the company functions within the broad world of business, industry, and service.	
1551.46	Identify ways in which the individual employee represents the organization.	
1551.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1551.48	Identify aspects of owning or starting up a small business.	
1551.49	Share information using a range of appropriate communications technologies.	
1551.50	Explain the importance of using data to improve company productivity.	

Course Description: This course is designed to develop student knowledge and skills and engage students who are interested in more complex challenges that business and industry face. This project-based learning course is for the more advanced students. Students at this level take more responsibility for their own learning, problem-solving, and thinking outside of the box. Real-world challenges require higher levels of research, building and testing, analyzing and improving systems such as voice and video infrastructures, network security systems, programming, robotics, green technology, computer and networks forensics, and GIS. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skillsets.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1550	AC Informatics I
1551	AC Informatics II
1552	AC Informatics III
1553	AC Informatics IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1552.01	Use social media appropriately and effectively, in personal and professional situations.	
1552.02	Exhibit flexibility and adaptability.	
1552.03	Demonstrate leadership skills.	
1552.04	Recognize others for their contributions.	
1552.05	Demonstrate group process techniques.	
1552.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1552.07	Exhibit professional practices.	
1552.08	Apply for employment.	

1552.09	Demonstrate employability skills needed to keep a job.	
1552.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1552.11	Exhibit responsibility.	
1552.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1552.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1552.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1552.15	Ensure healthful working conditions.	
1552.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1552.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1552.18	Exhibit interest in making the organization more effective and productive.	
1552.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1552.20	Explain the necessity and benefits/disadvantages of organizational change.	
1552.21	Identify ways to reduce or prevent injuries and illness.	
1552.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1552.23	Ensure safe working conditions.	
1552.24	Demonstrate safe use of tools and equipment.	
1552.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1552.26	Participate in group or team discussions.	
1552.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1552.28	Explain the importance of teamwork to the overall operation of the business.	
1552.29	Perform work tasks in a team.	
1552.30	Look for ways to help others.	
1552.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1552.32	Perform math operations using whole numbers, fractions, and percentages.	
1552.33	Gather information.	
1552.34	Provide clear documentation of assignments, goals, and timelines.	
1552.35	Define the problem.	
1552.36	Analyze the problem and identify the solution.	
1552.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1552.38	Identify the company's mission and the individual employee's contribution to that mission.	
1552.39	Interpret organizational policies and procedures.	
1552.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1552.41	Engage in conversations with coworkers, supervisors, and clients.	
1552.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1552.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1552.44	Interpret and comprehend technical and general interest in written material.	
1552.45	Identify how the company functions within the broad world of business, industry, and service.	
1552.46	Identify ways in which the individual employee represents the organization.	
1552.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1552.48	Identify aspects of owning or starting up a small business.	
1552.49	Share information using a range of appropriate communications technologies.	
1552.50	Explain the importance of using data to improve company productivity.	

Course Description: This course is designed to develop student knowledge and skills and engage students in a capstone endeavor as they select a business partner and develop an Informatics system that will apply the concepts from the three prior courses to design, build and test an Informatics system to meet the needs of the business partner. The student will work collaboratively with the business partner to develop a proposal for the project with evaluation criteria. Once the proposal is accepted by the business partner, the student will implement the proposal by designing, planning, and building the system then testing, and revising the system to successfully meet the needs of the business. Dual credit and/or articulation agreements will be available to students who successfully complete this course. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FBLA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1550	AC Informatics I
1551	AC Informatics II
1552	AC Informatics III
1553	AC Informatics IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/Performance
1553.01	Use social media appropriately and effectively, in personal and professional situations.	
1553.02	Exhibit flexibility and adaptability.	
1553.03	Demonstrate leadership skills.	
1553.04	Recognize others for their contributions.	
1553.05	Demonstrate group process techniques.	
1553.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1553.07	Exhibit professional practices.	
1553.08	Apply for employment.	
1553.09	Demonstrate employability skills needed to keep a job.	
1553.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1553.11	Exhibit responsibility.	
1553.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1553.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1553.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1553.15	Ensure healthful working conditions.	
1553.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1553.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1553.18	Exhibit interest in making the organization more effective and productive.	
1553.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1553.20	Explain the necessity and benefits/disadvantages of organizational change.	
1553.21	Identify ways to reduce or prevent injuries and illness.	
1553.22	Identify efficient, effective, and ethical uses of technology in the workplace.	

1553.23	Ensure safe working conditions.	
1553.24	Demonstrate safe use of tools and equipment.	
1553.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1553.26	Participate in group or team discussions.	
1553.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1553.28	Explain the importance of teamwork to the overall operation of the business.	
1553.29	Perform work tasks in a team.	
1553.30	Look for ways to help others.	
1553.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1553.32	Perform math operations using whole numbers, fractions, and percentages.	
1553.33	Gather information.	
1553.34	Provide clear documentation of assignments, goals, and timelines.	
1553.35	Define the problem.	
1553.36	Analyze the problem and identify the solution.	
1553.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1553.38	Identify the company's mission and the individual employee's contribution to that mission.	
1553.39	Interpret organizational policies and procedures.	
1553.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1553.41	Engage in conversations with coworkers, supervisors, and clients.	
1553.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	

1553.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	
---------	---	--

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1553.44	Interpret and comprehend technical and general interest in written material.	
1553.45	Identify how the company functions within the broad world of business, industry, and service.	
1553.46	Identify ways in which the individual employee represents the organization.	
1553.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1553.48	Identify aspects of owning or starting up a small business.	
1553.49	Share information using a range of appropriate communications technologies.	
1553.50	Explain the importance of using data to improve company productivity.	

Course Description: A course focused on the fundamental concepts and roles of logistics, activities, systems and costs. Also addresses the relation between logistics and supply and customer demand management.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1555	AC Global Logistics and Supply Chain Management I
1556	AC Global Logistics and Supply Chain Management II
1557	AC Global Logistics and Supply Chain Management III
1558	AC Global Logistics and Supply Chain Management IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1555.01	Use social media appropriately and effectively, in personal and professional situations.	
1555.02	Exhibit flexibility and adaptability.	
1555.03	Demonstrate leadership skills.	
1555.04	Recognize others for their contributions.	
1555.05	Demonstrate group process techniques.	
1555.06	Organize work.	

Application/ Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1555.07	Exhibit professional practices.	
1555.08	Apply for employment.	
1555.09	Demonstrate employability skills needed to keep a job.	
1555.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1555.11	Exhibit responsibility.	

1555.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1555.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1555.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1555.15	Ensure healthful working conditions.	
1555.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1555.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1555.18	Exhibit interest in making the organization more effective and productive.	
1555.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1555.20	Explain the necessity and benefits/disadvantages of organizational change.	
1555.21	Identify ways to reduce or prevent injuries and illness.	
1555.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1555.23	Ensure safe working conditions.	
1555.24	Demonstrate safe use of tools and equipment.	
1555.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1555.26	Participate in group or team discussions.	
1555.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1555.28	Explain the importance of teamwork to the overall operation of the business.	
1555.29	Perform work tasks in a team.	
1555.30	Look for ways to help others.	
1555.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1555.32	Perform math operations using whole numbers, fractions, and percentages.	
1555.33	Gather information.	
1555.34	Provide clear documentation of assignments, goals, and timelines.	
1555.35	Define the problem.	
1555.36	Analyze the problem and identify the solution.	
1555.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1555.38	Identify the company's mission and the individual employee's contribution to that mission.	
1555.39	Interpret organizational policies and procedures.	
1555.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1555.41	Engage in conversations with coworkers, supervisors, and clients.	
1555.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1555.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1555.44	Interpret and comprehend technical and general interest in written material.	
1555.45	Identify how the company functions within the broad world of business, industry, and service.	
1555.46	Identify ways in which the individual employee represents the organization.	
1555.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1555.48	Identify aspects of owning or starting up a small business.	
1555.49	Share information using a range of appropriate communications technologies.	

1555.50	Explain the importance of using data to improve company productivity.	
---------	---	--

Course Description: A course providing the knowledge and skills needed to manage various functional areas in logistics. These functional areas include: inventory management, warehouse management, transportation system management.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1555	AC Global Logistics and Supply Chain Management I
1556	AC Global Logistics and Supply Chain Management II
1557	AC Global Logistics and Supply Chain Management III
1558	AC Global Logistics and Supply Chain Management IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1556.01	Use social media appropriately and effectively, in personal and professional situations.	
1556.02	Exhibit flexibility and adaptability.	
1556.03	Demonstrate leadership skills.	
1556.04	Recognize others for their contributions.	
1556.05	Demonstrate group process techniques.	
1556.06	Organize work.	

Application/ Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1556.07	Exhibit professional practices.	
1556.08	Apply for employment.	
1556.09	Demonstrate employability skills needed to keep a job.	
1556.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1556.11	Exhibit responsibility.	
1556.12	Explain the importance of satisfactory attendance to the overall operation of the business.	

1556.13	Call in to notify the supervisor of unanticipated absences.	
---------	---	--

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1556.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1556.15	Ensure healthful working conditions.	
1556.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1556.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1556.18	Exhibit interest in making the organization more effective and productive.	
1556.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1556.20	Explain the necessity and benefits/disadvantages of organizational change.	
1556.21	Identify ways to reduce or prevent injuries and illness.	
1556.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1556.23	Ensure safe working conditions.	
1556.24	Demonstrate safe use of tools and equipment.	
1556.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1556.26	Participate in group or team discussions.	
1556.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1556.28	Explain the importance of teamwork to the overall operation of the business.	
1556.29	Perform work tasks in a team.	
1556.30	Look for ways to help others.	
1556.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
--	--	-----------------

Content Skill Sets		Knowledge/ Performance
1556.32	Perform math operations using whole numbers, fractions, and percentages.	
1556.33	Gather information.	
1556.34	Provide clear documentation of assignments, goals, and timelines.	
1556.35	Define the problem.	
1556.36	Analyze the problem and identify the solution.	
1556.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1556.38	Identify the company's mission and the individual employee's contribution to that mission.	
1556.39	Interpret organizational policies and procedures.	
1556.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1556.41	Engage in conversations with coworkers, supervisors, and clients.	
1556.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1556.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1556.44	Interpret and comprehend technical and general interest in written material.	
1556.45	Identify how the company functions within the broad world of business, industry, and service.	
1556.46	Identify ways in which the individual employee represents the organization.	
1556.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1556.48	Identify aspects of owning or starting up a small business.	
1556.49	Share information using a range of appropriate communications technologies.	
1556.50	Explain the importance of using data to improve company productivity.	

Course Description: This course focuses on logistics management in a global context. Important topics include: logistics relationship management, third-part logistics, issues in global logistics management, and logistics information technology.

Notes: Required Courses (No Sequence Required).

WVEIS CODE	Course
1555	AC Global Logistics and Supply Chain Management I
1556	AC Global Logistics and Supply Chain Management II
1557	AC Global Logistics and Supply Chain Management III
1558	AC Global Logistics and Supply Chain Management IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1557.01	Use social media appropriately and effectively, in personal and professional situations.	
1557.02	Exhibit flexibility and adaptability.	
1557.03	Demonstrate leadership skills.	
1557.04	Recognize others for their contributions.	
1557.05	Demonstrate group process techniques.	
1557.06	Organize work.	

Application/ Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1557.07	Exhibit professional practices.	
1557.08	Apply for employment.	
1557.09	Demonstrate employability skills needed to keep a job.	
1557.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1557.11	Exhibit responsibility.	
1557.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1557.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1557.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1557.15	Ensure healthful working conditions.	
1557.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1557.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1557.18	Exhibit interest in making the organization more effective and productive.	
1557.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1557.20	Explain the necessity and benefits/disadvantages of organizational change.	
1557.21	Identify ways to reduce or prevent injuries and illness.	
1557.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1557.23	Ensure safe working conditions.	
1557.24	Demonstrate safe use of tools and equipment.	
1557.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1557.26	Participate in group or team discussions.	
1557.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1557.28	Explain the importance of teamwork to the overall operation of the business.	

1557.29	Perform work tasks in a team.	
1557.30	Look for ways to help others.	
1557.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1557.32	Perform math operations using whole numbers, fractions, and percentages.	
1557.33	Gather information.	
1557.34	Provide clear documentation of assignments, goals, and timelines.	
1557.35	Define the problem.	
1557.36	Analyze the problem and identify the solution.	
1557.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1557.38	Identify the company's mission and the individual employee's contribution to that mission.	
1557.39	Interpret organizational policies and procedures.	
1557.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1557.41	Engage in conversations with coworkers, supervisors, and clients.	
1557.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1557.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1557.44	Interpret and comprehend technical and general interest in written material.	
1557.45	Identify how the company functions within the broad world of business, industry, and service.	
1557.46	Identify ways in which the individual employee represents the organization.	
1557.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1557.48	Identify aspects of owning or starting up a small business.	
1557.49	Share information using a range of appropriate communications technologies.	
1557.50	Explain the importance of using data to improve company productivity.	

Course Description: This course is the advanced level course that provides concepts, knowledge and skill in supply chain management. Students will learn the concept and importance of supply chain management, globalization, logistics function in the supply chain, supply chain network design, and future challenges in supply chain and logistics management. Attention will be given to the relation and integration of global logistics and supply chain management.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1555	AC Global Logistics and Supply Chain Management I
1556	AC Global Logistics and Supply Chain Management II
1557	AC Global Logistics and Supply Chain Management III
1558	AC Global Logistics and Supply Chain Management IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1558.01	Use social media appropriately and effectively, in personal and professional situations.	
1558.02	Exhibit flexibility and adaptability.	
1558.03	Demonstrate leadership skills.	
1558.04	Recognize others for their contributions.	
1558.05	Demonstrate group process techniques.	
1558.06	Organize work.	

Application/ Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1558.07	Exhibit professional practices.	
1558.08	Apply for employment.	
1558.09	Demonstrate employability skills needed to keep a job.	
1558.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1558.11	Exhibit responsibility.	
1558.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1558.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1558.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1558.15	Ensure healthful working conditions.	
1558.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1558.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1558.18	Exhibit interest in making the organization more effective and productive.	
1558.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1558.20	Explain the necessity and benefits/disadvantages of organizational change.	
1558.21	Identify ways to reduce or prevent injuries and illness.	
1558.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1558.23	Ensure safe working conditions.	
1558.24	Demonstrate safe use of tools and equipment.	
1558.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1558.26	Participate in group or team discussions.	
1558.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1558.28	Explain the importance of teamwork to the overall operation of the business.	

1558.29	Perform work tasks in a team.	
1558.30	Look for ways to help others.	
1558.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1558.32	Perform math operations using whole numbers, fractions, and percentages.	
1558.33	Gather information.	
1558.34	Provide clear documentation of assignments, goals, and timelines.	
1558.35	Define the problem.	
1558.36	Analyze the problem and identify the solution.	
1558.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1558.38	Identify the company's mission and the individual employee's contribution to that mission.	
1558.39	Interpret organizational policies and procedures.	
1558.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1558.41	Engage in conversations with coworkers, supervisors, and clients.	
1558.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1558.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1558.44	Interpret and comprehend technical and general interest in written material.	
1558.45	Identify how the company functions within the broad world of business, industry, and service.	
1558.46	Identify ways in which the individual employee represents the organization.	
1558.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1558.48	Identify aspects of owning or starting up a small business.	
1558.49	Share information using a range of appropriate communications technologies.	
1558.50	Explain the importance of using data to improve company productivity.	

Course Description: A project-based course that introduces students to manufacturing’s role in our society. In addition to concentrating on design and problem solving the course introduces the students to several other concepts as well including an introduction to control system technology, automated manufacturing systems and robotics.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1575	AC Advanced Manufacturing I
1576	AC Advanced Manufacturing II
1577	AC Advanced Manufacturing III
1578	AC Advanced Manufacturing IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1575.01	Use social media appropriately and effectively, in personal and professional situations.	
1575.02	Exhibit flexibility and adaptability.	
1575.03	Demonstrate leadership skills.	
1575.04	Recognize others for their contributions.	
1575.05	Demonstrate group process techniques.	
1575.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1575.07	Exhibit professional practices.	
1575.08	Apply for employment.	
1575.09	Demonstrate employability skills needed to keep a job.	
1575.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance

1575.11	Exhibit responsibility.	
1575.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1575.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1575.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1575.15	Ensure healthful working conditions.	
1575.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1575.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1575.18	Exhibit interest in making the organization more effective and productive.	
1575.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1575.20	Explain the necessity and benefits/disadvantages of organizational change.	
1575.21	Identify ways to reduce or prevent injuries and illness.	
1575.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1575.23	Ensure safe working conditions.	
1575.24	Demonstrate safe use of tools and equipment.	
1575.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1575.26	Participate in group or team discussions.	
1575.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1575.28	Explain the importance of teamwork to the overall operation of the business.	
1575.29	Perform work tasks in a team.	
1575.30	Look for ways to help others.	
1575.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1575.32	Perform math operations using whole numbers, fractions, and percentages.	
1575.33	Gather information.	
1575.34	Provide clear documentation of assignments, goals, and timelines.	
1575.35	Define the problem.	
1575.36	Analyze the problem and identify the solution.	
1575.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1575.38	Identify the company's mission and the individual employee's contribution to that mission.	
1575.39	Interpret organizational policies and procedures.	
1575.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1575.41	Engage in conversations with coworkers, supervisors, and clients.	
1575.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1575.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1575.44	Interpret and comprehend technical and general interest in written material.	
1575.45	Identify how the company functions within the broad world of business, industry, and service.	
1575.46	Identify ways in which the individual employee represents the organization.	
1575.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance

1575.48	Identify aspects of owning or starting up a small business.	
1575.49	Share information using a range of appropriate communications technologies.	
1575.50	Explain the importance of using data to improve company productivity.	

Course Description: This course applies the learning from the first course. This course involves projects related to the systems that are found in factories. Students learn about effective and energy efficient use of motors, drive systems, pumping systems, conveyors, piping and control systems. Students focus on properties of materials and materials testing creating documentation examining the properties and justifying selections based on the properties. Students learn that some products manufactured become the raw materials for more complex products. Students explore the technologies utilized in manufacturing.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1575	AC Advanced Manufacturing I
1576	AC Advanced Manufacturing II
1577	AC Advanced Manufacturing III
1578	AC Advanced Manufacturing IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1576.01	Use social media appropriately and effectively, in personal and professional situations.	
1576.02	Exhibit flexibility and adaptability.	
1576.03	Demonstrate leadership skills.	
1576.04	Recognize others for their contributions.	
1576.05	Demonstrate group process techniques.	
1576.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1576.07	Exhibit professional practices.	
1576.08	Apply for employment.	
1576.09	Demonstrate employability skills needed to keep a job.	
1576.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1576.11	Exhibit responsibility.	
1576.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1576.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1576.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1576.15	Ensure healthful working conditions.	
1576.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1576.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1576.18	Exhibit interest in making the organization more effective and productive.	
1576.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1576.20	Explain the necessity and benefits/disadvantages of organizational change.	
1576.21	Identify ways to reduce or prevent injuries and illness.	
1576.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1576.23	Ensure safe working conditions.	
1576.24	Demonstrate safe use of tools and equipment.	
1576.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1576.26	Participate in group or team discussions.	
1576.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1576.28	Explain the importance of teamwork to the overall operation of the business.	

1576.29	Perform work tasks in a team.	
1576.30	Look for ways to help others.	
1576.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1576.32	Perform math operations using whole numbers, fractions, and percentages.	
1576.33	Gather information.	
1576.34	Provide clear documentation of assignments, goals, and timelines.	
1576.35	Define the problem.	
1576.36	Analyze the problem and identify the solution.	
1576.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1576.38	Identify the company's mission and the individual employee's contribution to that mission.	
1576.39	Interpret organizational policies and procedures.	
1576.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1576.41	Engage in conversations with coworkers, supervisors, and clients.	
1576.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1576.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1576.44	Interpret and comprehend technical and general interest in written material.	
1576.45	Identify how the company functions within the broad world of business, industry, and service.	
1576.46	Identify ways in which the individual employee represents the organization.	
1576.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1576.48	Identify aspects of owning or starting up a small business.	
1576.49	Share information using a range of appropriate communications technologies.	
1576.50	Explain the importance of using data to improve company productivity.	

Course Description: This is the third course in the four-course sequence and focuses on industrial control and automation systems as they apply to the advanced manufacturing equipment. This equipment depends on the use and coordination of information, automation, computation, software, sensing, and networking. Students will design and create mechatronic systems to accomplish advanced manufacturing tasks. Students will also create sophisticated technical reports similar to ones generated by engineers in this industry.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1575	AC Advanced Manufacturing I
1576	AC Advanced Manufacturing II
1577	AC Advanced Manufacturing III
1578	AC Advanced Manufacturing IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1577.01	Use social media appropriately and effectively, in personal and professional situations.	
1577.02	Exhibit flexibility and adaptability.	
1577.03	Demonstrate leadership skills.	
1577.04	Recognize others for their contributions.	
1577.05	Demonstrate group process techniques.	
1577.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1577.07	Exhibit professional practices.	
1577.08	Apply for employment.	
1577.09	Demonstrate employability skills needed to keep a job.	
1577.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
---------------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1577.11	Exhibit responsibility.	
1577.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1577.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1577.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1577.15	Ensure healthful working conditions.	
1577.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1577.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1577.18	Exhibit interest in making the organization more effective and productive.	
1577.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1577.20	Explain the necessity and benefits/disadvantages of organizational change.	
1577.21	Identify ways to reduce or prevent injuries and illness.	
1577.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1577.23	Ensure safe working conditions.	
1577.24	Demonstrate safe use of tools and equipment.	
1577.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1577.26	Participate in group or team discussions.	
1577.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1577.28	Explain the importance of teamwork to the overall operation of the business.	
1577.29	Perform work tasks in a team.	

1577.30	Look for ways to help others.	
1577.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1577.32	Perform math operations using whole numbers, fractions, and percentages.	
1577.33	Gather information.	
1577.34	Provide clear documentation of assignments, goals, and timelines.	
1577.35	Define the problem.	
1577.36	Analyze the problem and identify the solution.	
1577.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1577.38	Identify the company's mission and the individual employee's contribution to that mission.	
1577.39	Interpret organizational policies and procedures.	
1577.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1577.41	Engage in conversations with coworkers, supervisors, and clients.	
1577.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1577.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1577.44	Interpret and comprehend technical and general interest in written material.	
1577.45	Identify how the company functions within the broad world of business, industry, and service.	
1577.46	Identify ways in which the individual employee represents the organization.	
1577.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1577.48	Identify aspects of owning or starting up a small business.	
1577.49	Share information using a range of appropriate communications technologies.	
1577.50	Explain the importance of using data to improve company productivity.	

Course Description: This course allows students to apply knowledge of materials to the design for manufacturing necessary to bring a product to market. Students explore the business of manufacturing while creating work cells to process materials into products. Students design a prototype and then redesign with the goal of manufacturing the product. Students analyze and evaluate all aspects of the design and production process with an emphasis on lean, green manufacturing. Students pay special attention to the control systems integration, data acquisition, and quality control processes necessary for Six Sigma production.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
1575	AC Advanced Manufacturing I
1576	AC Advanced Manufacturing II
1577	AC Advanced Manufacturing III
1578	AC Advanced Manufacturing IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1578.01	Use social media appropriately and effectively, in personal and professional situations.	
1578.02	Exhibit flexibility and adaptability.	
1578.03	Demonstrate leadership skills.	
1578.04	Recognize others for their contributions.	
1578.05	Demonstrate group process techniques.	
1578.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1578.07	Exhibit professional practices.	
1578.08	Apply for employment.	
1578.09	Demonstrate employability skills needed to keep a job.	
1578.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System**Complete****Content Skill Sets****Knowledge/
Performance**

1578.11	Exhibit responsibility.	
1578.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1578.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone**Complete****Content Skill Sets****Knowledge/
Performance**

1578.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1578.15	Ensure healthful working conditions.	
1578.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment**Complete****Content Skill Sets****Knowledge/
Performance**

1578.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1578.18	Exhibit interest in making the organization more effective and productive.	
1578.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas**Complete****Content Skill Sets****Knowledge/
Performance**

1578.20	Explain the necessity and benefits/disadvantages of organizational change.	
1578.21	Identify ways to reduce or prevent injuries and illness.	
1578.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1578.23	Ensure safe working conditions.	
1578.24	Demonstrate safe use of tools and equipment.	
1578.25	Practice environmental conservation and safety.	

Work Place Teams**Complete****Content Skill Sets****Knowledge/
Performance**

1578.26	Participate in group or team discussions.	
---------	---	--

1578.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1578.28	Explain the importance of teamwork to the overall operation of the business.	
1578.29	Perform work tasks in a team.	
1578.30	Look for ways to help others.	
1578.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1578.32	Perform math operations using whole numbers, fractions, and percentages.	
1578.33	Gather information.	
1578.34	Provide clear documentation of assignments, goals, and timelines.	
1578.35	Define the problem.	
1578.36	Analyze the problem and identify the solution.	
1578.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1578.38	Identify the company's mission and the individual employee's contribution to that mission.	
1578.39	Interpret organizational policies and procedures.	
1578.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1578.41	Engage in conversations with coworkers, supervisors, and clients.	
1578.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1578.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1578.44	Interpret and comprehend technical and general interest in written material.	
1578.45	Identify how the company functions within the broad world of business, industry, and service.	
1578.46	Identify ways in which the individual employee represents the organization.	
1578.47	Apply industry quality standards and practices.	

Accountability**Complete****Content Skill Sets****Knowledge/
Performance**

1578.48	Identify aspects of owning or starting up a small business.	
1578.49	Share information using a range of appropriate communications technologies.	
1578.50	Explain the importance of using data to improve company productivity.	

Class Description: 1598 INTRODUCTION TO NETWORK CABLING FIBER-OPTIC BASED SYSTEMS

Overview:

Welcome to the world of fiber optics! In this class, we will delve into the fundamental principles, applications, and technologies surrounding fiber optic communication. As one of the most critical components of modern telecommunication and networking systems, fiber optics has revolutionized the way we transmit data, voice, and video over long distances at high speeds.

Course Objectives:

Understanding Fiber Optic Basics: Gain a solid foundation in the principles of light transmission through optical fibers, including the concepts of total internal reflection, dispersion, and attenuation.

Fiber Optic Components: Explore the various components that make up a fiber optic system, such as optical fibers, connectors, splices, couplers, and amplifiers.

Fiber Optic Communication Systems: Learn about the different types of fiber optic communication systems, including point-to-point, passive optical networks (PON), and wavelength-division multiplexing (WDM).

Installation and Maintenance: Discover the best practices for installing, testing, and maintaining fiber optic networks to ensure optimal performance and reliability.

Optical Signal Modulation: Study the methods used to encode information onto light signals, including amplitude modulation, frequency modulation, and phase modulation.

Optical Networking: Explore the principles of optical networking, including SONET/SDH, Ethernet over fiber, and optical transport networks (OTN).

Fiber Optic Sensing: Delve into the emerging field of fiber optic sensing and its applications in various industries, such as structural health monitoring, temperature sensing, and intrusion detection.

Advanced Fiber Optics: Introduce advanced topics, such as specialty fibers, nonlinear effects, and the latest developments in fiber optic technology.

Class Format:

This class will combine theoretical lectures with hands-on practical sessions to reinforce the concepts discussed. Students will have access to cutting-edge fiber optic equipment and tools to gain real-world experience in working with fiber optic systems.

Assessment:

Student understanding will be evaluated through a combination of assignments, quizzes, practical exercises, and a final project. The final project will involve designing and implementing a small-scale fiber optic communication network.

Who Should Attend:

This class is designed for students and professionals interested in the field of telecommunications, networking, electrical engineering, or anyone looking to gain a comprehensive understanding of fiber optic technology and its applications.

Prerequisites:

Basic knowledge of physics and mathematics, along with a general understanding of telecommunication and networking concepts, is recommended. No prior experience with fiber optics is necessary, as the course will start from the fundamentals.

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Basic Control Circuits. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities and personal and equipment safety. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction.

Electrical Components		Complete
Content Skill Sets		Knowledge/ Performance
1601.01	Methods for troubleshooting, testing, repairing and replacing electrical components.	
1601.02	Troubleshoot electrical faults on series and parallel circuit and calculate unknown values.	
1601.03	Measure resistance of open and hermetic motor windings.	
1601.04	Analyze split phase motors (PSC, RSIR, CSCR, CSIR and Shaded Pole).	
1601.05	Test and inspect motor starting relays (Current, potential, and solid state).	
1601.06	Measure capacitor values (start and run).	
1601.07	Assess contactors, switching relays, overload protectors, transformers and resistance heaters.	
1601.08	Classify types of thermostats and test, install and adjust heat anticipators.	
1601.09	Interpret electrical diagrams (schematic, ladder and wiring).	
1601.10	Classify and demonstrate use of specialized tools and test instruments.	
1601.11	Compare and identify requirements of wire size.	
1601.12	Demonstrate knowledge of Ohm's law and calculate unknown values.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Air Conditioning Applications. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities, personal and equipment safety, fabrication operations and basic compression refrigeration. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts and teachers should provide each student with real world learning opportunities and instruction related to air conditioning occupations.

Troubleshooting and Repairing Air Conditioning Systems		Complete
Content Skill Sets		Knowledge/ Performance
1602.01	Troubleshooting and repairing air conditioning systems.	
1602.02	Test and apply psychometrics to systems.	
1602.03	Measure superheat and subcooling.	

Installing and Troubleshooting Electrical Systems		Complete
Content Skill Sets		Knowledge/ Performance
1602.04	Installing and troubleshooting electrical system problems.	
1602.05	Integrate tools and test instruments.	
1602.06	Program various thermostats.	
1602.07	Test and troubleshoot operating and safety controls.	

Maintenance Program		Complete
Content Skill Sets		Knowledge/ Performance
1602.08	Initiating a maintenance program based upon frequency and task recommended by.	
1602.09	Develop an annual maintenance schedule.	
1602.10	Perform required maintenance tasks.	
1602.11	Select and integrate tools required to do maintenance.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Domestic Refrigeration. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities and personal and equipment safety. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction.

Testing and Service Skills

		Complete
Content Skill Sets		Knowledge/ Performance
1603.01	Testing and service skills for domestic refrigeration systems.	
1603.02	Identify all components of a domestic refrigeration system (electrical and mechanical).	
1603.03	Test all components of domestic refrigeration systems (electrical and mechanical).	
1603.04	Measure and record temperatures and relative humidity.	
1603.05	Replace defective components of a domestic refrigeration system (electrical and mechanical).	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts of Fossil Fuel Heating Systems. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities and personal and equipment safety. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to air conditioning and refrigeration occupations.

Operation of Fossil Fuel Furnaces

Complete

Content Skill Sets		Knowledge/ Performance
1604.01	Installing fossil fuel furnaces.	
1604.02	Determine proper sizing related to fuel line applications.	
1604.03	Pressurize and leak test fuel lines.	
1604.04	Perform combustion analysis.	

Troubleshooting Fossil Fuel Furnace

Complete

Content Skill Sets		Knowledge/ Performance
1604.05	Troubleshooting fossil fuel furnaces.	
1604.06	Measure furnace temperature rise.	
1604.07	Measure draft of barometric damper (draft control).	
1604.08	Measure fuel pressures.	

Fossil Fuel Furnace Safety

Complete

Content Skill Sets		Knowledge/ Performance
1604.09	Safety consideration of fossil fuel furnaces.	
1604.10	Assess venting requirements based on manufacturer's specifications.	
1604.11	Access clearance specifications.	
1604.12	Identify criteria for types of fossil fuel heating systems.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Heating Systems. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities and personal and equipment safety. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction.

Heating System Analysis and Servicing		Complete
Content Skill Sets		Knowledge/ Performance
1607.01	The skills needed to test, service, install and repair heating systems.	
1607.02	Test and replace all electrical and mechanical components and safety devices of heating systems.	
1607.03	Leak test and adjust pressures of fossil fuel heating systems.	
1607.04	Measure and adjust temperature rise of heating systems.	
1607.05	Test and adjust combustion efficiency of fossil fuel heating systems.	
1607.06	Check and explain the installation requirements of electric base board heat.	
1607.07	Convert watts to B.T.U.'s and make conversions (Celsius to Fahrenheit).	
1607.08	Compare electric heat and heat pumps to fossil fuel heating systems.	
1607.09	Light and adjust pilot light flame.	
1607.10	Identify considerations of heating system installations (up flow, down flow and horizontal).	
1607.11	Connect fuel lines and filters for gas and oil furnaces (black pipe and copper tubing).	
1607.12	Compute heat loss and heat gain, design duct system from blueprint information and measure airflow.	
1607.13	Identify specific tools for fossil fuel heating systems.	

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the Commercial Air Conditioning Program of Study. Areas of study include mathematical concepts, technical writing skills, technical reading comprehension, career opportunities, personal and equipment safety, fabrication operations and compression refrigeration. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to air conditioning occupations.

Commercial Evaporator		Complete
Content Skill Sets		Knowledge/ Performance
1608.01	Testing, servicing, and installing commercial evaporators.	
1608.02	Explain the operation of direct expansion evaporators.	
1608.03	Explain the operation of indirect expansion evaporators.	
1608.04	Describe single and multiple circuit evaporators.	
1608.05	Repair or replace evaporator coil.	

Commercial Condenser		Complete
Content Skill Sets		Knowledge/ Performance
1608.06	Testing, servicing, and installing commercial condensers.	
1608.07	Measure performance when servicing air cooled condensers.	
1608.08	Measure performance when servicing water cooled condensers.	
1608.09	Test condensers for leaks.	
1608.10	Evacuate and charge systems.	

Compressor Repair and Replacement		Complete
Content Skill Sets		Knowledge/ Performance
1608.11	Compressor testing and replacement.	
1608.12	Differentiate types of compressors.	
1608.13	Recognize internal parts of compressors.	
1608.14	Identify special components of compressors.	
1608.15	Test compressor compression ratio.	
1608.16	Judge condition of compressor motor windings.	
1608.17	Measure for oil, acid, and moisture.	

Measuring Devices and Special System Component		Complete
Content Skill Sets		Knowledge/ Performance
1608.18	Metering devices and special system components.	
1608.19	Compare and test metering devices.	
1608.20	Install sensing bulbs.	
1608.21	Perform system pump down procedures.	
1608.22	Perform electrical, mechanical, and air flow testing and repair.	
1608.23	Identify types of pressure controls for specific applications.	

Course Description:

Sectional Views		Complete
Content Skill Sets		Knowledge/ Performance
1609.01	Measuring and layout tools for duct system design.	
1609.02	Identify measuring tools.	
1609.03	Define use of measuring tools.	
1609.04	Use measuring tools in layout process.	
1609.05	Fabricate and install straight duct and various fittings needed for duct system.	
1609.06	Identify requirements for installing and sealing duct systems.	

Basic Metal Tools, Equipment, and Materials		Complete
Content Skill Sets		Knowledge/ Performance
1609.07	Basic metal tools, equipment, and materials.	
1609.08	Practice all safety requirements as related to tools, equipment, and material.	
1609.09	Identify by proper name basic metal working hand tools.	
1609.10	Identify sheet working machines and describe their basic purpose.	
1609.11	Describe common types of metal used for duct systems.	
1609.12	Determine gauge of material with proper tools.	
1609.13	Calculate bill of materials used for duct installation for jobs.	

Duct Fastener		Complete
		Knowledge/ Performance
1609.14	Duct fastener requirements for various materials.	
1609.15	Differentiate types of rivets and identify types of rivet tools.	
1609.16	Identify and use threaded fasteners.	
1609.17	Fabricate and use S-clips, drive cleats, and Pittsburgh hand seam.	
1609.18	Identify handheld tools used for fabrication of duct board.	

Duct System Blueprint

Duct System Blueprint		Complete
Content Skill Sets		Knowledge/ Performance
1609.19	Interpreting blueprints of duct systems.	
1609.20	Identify basic terms, components, and symbols of blueprints.	
1609.21	Translate from blueprints to actual structure.	
1609.22	List common scales used in measurement of duct blueprints.	
1609.23	Prepare a material list for a duct system.	

Course Description: Automotive Technology MLR-2 continues as students are exposed to skills sets in areas such as Steering and Suspension-Diagnosis and Repair of Wheels and Tires, Brakes-Diagnosis and Repair of Hydraulic Systems, Brakes-Diagnosis and Repair of Drum Brake Systems, Brakes-Diagnosis and Repair of Disk Brake Systems, Brakes Diagnosis and Repair of Power Assist Units, Brakes Diagnosis, and Repair of Miscellaneous Automotive Items, Brakes-Diagnosis and Repair of Anti-lock Brake Systems and Steering and Suspension-Diagnosis of Steering & Suspension Systems, Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Suspension and Steering		Complete
Content Skill Sets		Knowledge/ Performance
1623.01	Perform related suspension and steering systems inspection and service.	
1623.02	Perform vehicle pre-alignment inspection and ride-height.	
1623.03	Inspect and service wheels and tires.	

Brakes		Complete
Content Skill Sets		Knowledge/ Performance
1623.04	Inspect and service the hydraulic system.	
1623.05	Inspect and service drum brakes.	
1623.06	Inspect and service disc brakes.	
1623.07	Inspect and service power-assist units.	
1623.08	Inspect and service miscellaneous systems (e.g., wheel bearings, parking brake, electrical).	
1623.09	Identify and describe electronic brakes, traction, and stability control systems.	

Customer Relations and Shop Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1623.10	Interpret and estimate repair and work orders.	
1623.11	Utilize vehicle service information.	
1623.12	Exhibit understanding of appropriate customer interactions.	
1623.13	Exhibit understanding of automotive, environmental, and hazardous materials.	
1623.14	Display understanding of safe work environment, shop procedures, and proper handling of a customer vehicle.	

Course Description: Automotive Technology MLR-3 build student skill sets in the areas of Electrical-Demonstrate Starting System Diagnosis and Repair, Electrical-Demonstrate Charging System Diagnosis and Repair; Electrical-Demonstrate Lighting System Diagnosis and Repair, Electrical-Demonstrate Accessories System Diagnosis and Repair, Engines, General Engines, Engines-Diagnosis and Repair of Cylinder Head and Valve Train, and Engine Performance-General Engine Diagnosis. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Engine Repair		Complete
Content Skill Sets		Knowledge/ Performance
1625.01	Inspect and service general engine issues, including adjusting valve trains.	
1625.02	Inspect, test, and service lubrication and cooling systems.	

Electrical and Electronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1625.03	Inspect and service general electrical/electronic systems.	
1625.04	Inspect and service charging batteries.	
1625.05	Inspect and service starting systems.	
1625.06	Inspect and service charging systems.	
1625.07	Inspect and service lighting systems.	
1625.08	Inspect and service accessories.	

Engine Performance		Complete
Content Skill Sets		Knowledge/ Performance
1625.09	Inspect and service general engine performance.	
1625.10	Identify and describe electronic engine controls.	
1625.11	Inspect and service fuel, air induction, and exhaust systems.	
1625.12	Inspect and service emissions control systems.	

Customer Relations and Shop Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1625.13	Interpret and estimate repair and work orders.	
1625.14	Utilize vehicle service information.	
1625.15	Exhibit understanding of appropriate customer interactions.	
1625.16	Exhibit understanding of automotive, environmental, and hazardous materials.	
1625.17	Display understanding of safe work environment, shop procedures, and proper handling of a customer vehicle.	

Course Description: The Skill Sets in Automotive Technology AST-4 will introduce students to the skills, technology, and service of Automatic Transmission and Transaxle-Diagnosis, Maintenance, Repair and Adjustment; Manual Drive Train and Axles-Diagnosis, Maintenance, Repair and Adjustment; and Heating and Air Conditioning-Diagnosis, Maintenance, Repair and Adjustment. This course is recommended as an Elective in Automotive Technology.

Automatic Transmission & Transaxle-Diagnosis, Maintenance, Repair and Adjustment		Complete
Content Skill Sets		Knowledge/ Performance
1627.01	Summarize the elements of the automatic transmission/transaxle system.	
1627.02	Examine and analyze systems.	
1627.03	Evaluate the proper operation of the system.	
1627.04	Demonstrate proper repair/replacement techniques.	
General Transmission and Transaxle Diagnosis		
1627.05	Identify and interpret transmission/transaxle concern, differentiate between engine performance and transmission/transaxle concerns; determine necessary action.	
1627.06	Diagnose fluid loss and condition concerns; determine necessary action.	
1627.07	Perform stall test; determine necessary action.	
1627.08	Perform lock-up converter system tests; determine necessary action.	
1627.09	Diagnose transmission/transaxle gear reduction/multiplication concerns using driving, driven, and held member (power flow) principles.	
1627.10	Diagnose pressure concerns in a transmission using hydraulic principles (Pascal's Law).	
In-Vehicle Transmission/Transaxle Maintenance and Repair		
1627.11	Inspect, test, adjust, repair, or replace electrical/electronic components and circuits, including computers, solenoids, sensors, relays, terminals, connectors, switches, and harnesses.	
Off-Vehicle Transmission and Transaxle Repair		
1627.12	Remove and reinstall transmission/transaxle and torque converter; inspect engine core plugs, rear crankshaft seal, dowel pins, dowel pin holes, and mating surfaces.	
1627.13	Inspect, leak test, and flush or replace transmission/transaxle oil cooler, lines, and fittings.	
1627.14	Inspect converter flex (drive) plate, converter attaching bolts, converter pilot, converter pump drive surfaces, converter end play, and crankshaft pilot bore.	

Manual Drive Train and Axles-Diagnosis, Maintenance, Repair and Adjustment		Complete
Content Skill Sets		Knowledge/ Performance
1627.15	Summarize the elements of the manual transmission/transaxle system.	

1627.16	Examine and analyze systems.	
1627.17	Evaluate the proper operation of the system.	
1627.18	Demonstrate proper repair/replacement techniques.	
	General Drive Train Diagnosis	
1627.19	Identify and interpret drive train concerns; determine necessary action.	
	Check fluid condition; check for leaks; determine necessary action.	
	Clutch Diagnosis and Repair	
1627.20	Diagnose clutch noise, binding, slippage, pulsation, and chatter; determine necessary action.	
1627.21	Inspect clutch pedal linkage, cables, automatic adjuster mechanisms, brackets, bushings, pivots, and springs; perform necessary action.	
1627.22	Inspect and replace clutch pressure plate assembly, clutch disc, release (throw-out) bearing and linkage, and pilot bearing/bushing (as applicable).	
1627.23	Bleed clutch hydraulic system.	
1627.24	Inspect flywheel and ring gear for wear and cracks; determine necessary action.	
1627.25	Measure flywheel runout and crankshaft end play; determine necessary action.	
	Transmission/Transaxle Diagnosis and Repair	
1627.26	Inspect, adjust, and reinstall shift linkages, brackets, bushings, cables, pivots, and levers.	
	Drive Shaft and Half Shaft, Universal and Constant-Velocity (CV) Joint Diagnosis and Repair	
1627.27	Diagnose constant-velocity (CV) joint noise and vibration concerns; determine necessary action.	
1627.28	Diagnose universal joint noise and vibration concerns; perform necessary action.	
1627.29	Check shaft balance and phasing; measure shaft runout; measure and adjust driveline angles.	
	Drive Axle Diagnosis and Repair	
1627.30	Inspect and replace companion flange and pinion seal; measure companion flange runout.	
1627.31	Remove and replace drive axle shafts.	
1627.32	Inspect and replace drive axle shaft seals, bearings, and retainers.	
1627.33	Measure drive axle flange runout and shaft end play; determine necessary action.	
	Four-wheel Drive/All-wheel Drive Component Diagnosis and Repair	
1627.34	Inspect, adjust, and repair shifting controls (mechanical, electrical, and vacuum), bushings, mounts, levers, and brackets.	
1627.35	Inspect front-wheel bearings and locking hubs; perform necessary action(s).	
1627.36	Identify concerns related to variations in tire circumference and/or final drive ratios.	

Heating and Air Conditioning-Diagnosis, Maintenance, Repair and Adjustment		Complete
Content Skill Sets		Knowledge/ Performance
1627.37	Summarize the elements of the HVAC systems.	
1627.38	Examine and analyze systems.	
1627.39	Evaluate the proper functioning of the system.	
1627.40	Demonstrate proper repair/replacement techniques.	

	A/C System Diagnosis and Repair	
1627.41	Identify and interpret heating and air-conditioning problems; determine necessary action.	
1627.42	Performance test A/C system; identify problems.	
1627.43	Identify abnormal operating noises in the A/C system; determine necessary action.	
1627.44	Identify refrigerant type; select and connect proper gauge set; record temperature and pressure readings.	
1627.45	Leak test A/C system; determine necessary action.	
1627.46	Inspect the condition of refrigerant oil removed from the system; determine necessary action.	
1627.47	Determine recommended oil and oil capacity for system application.	
1627.48	Using scan tool, observe and record related HVAC data and trouble codes.	
	Refrigeration System Component Diagnosis and Repair	
1627.49	Inspect, test, service or replace A/C compressor clutch components and/or assembly; check compressor clutch air gap; adjust as needed.	
1627.50	Remove, inspect, and reinstall A/C compressor and mountings; determine recommended oil quantity.	
1627.51	Determine the need for an additional A/C system filter; perform necessary action.	
1627.52	Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; perform necessary action.	
1627.53	Inspect A/C condenser for airflow restrictions; perform necessary action.	
1627.54	Remove, inspect, and reinstall receiver/drier or accumulator/drier; determine recommended oil quantity.	
1627.55	Remove, inspect, and install expansion valve or orifice (expansion) tube.	
1627.56	Inspect evaporator housing water drain; perform necessary action.	
1627.57	Determine procedure to remove and reinstall evaporator; determine required oil quantity.	
	Heating, Ventilation, and Engine Cooling Systems Diagnosis and Repair	
1627.58	Inspect and test heater control valve(s); perform necessary action.	
1627.59	Determine procedure to remove, inspect, and reinstall heater core.	
	Operating Systems and Related Controls Diagnosis and Repair	
1627.60	Inspect and test A/C-heater blower, motors, resistors, switches, relays, wiring, and protection devices; perform necessary action.	
1627.61	Diagnose A/C compressor clutch control systems; determine necessary action.	
1627.62	Diagnose malfunctions in the vacuum, mechanical, and electrical components and controls of the heating, ventilation, and A/C (HVAC) system; determine necessary action.	
1627.63	Inspect and test A/C-heater control panel assembly; determine necessary action.	
1627.64	Inspect and test A/C-heater control cables, motors, and linkages; perform necessary action.	
1627.65	Check operation of automatic or semi-automatic heating, ventilation, and air-conditioning (HVAC) control systems; determine necessary action.	
	Refrigerant Recovery, Recycling, and Handling	
1627.66	Perform correct use and maintenance of refrigerant handling equipment according to equipment manufacturer's standards.	
1627.67	Identify and recover A/C system refrigerant.	
1627.68	Recycle, label, and store refrigerant.	
1627.69	Evacuate and charge A/C system; add refrigerant oil as required.	

Course Description: The Skill Sets in Automotive Technology AST-1 will introduce students to the skills sets related to Electrical-Electrical/Electronic System Basics; and Alternative Fuels-Hybrid Vehicles; NAFTC Program or Additional electrical Tasks from NATEF MAST Program. This course is recommended as an Elective in Automotive Technology.

Electrical-Electrical/Electronic System Basics		Complete
Content Skill Sets		Knowledge/ Performance
1629.01	Evaluate automotive electrical systems.	
1629.02	Utilize electrical system tools.	
1629.03	Summarize battery systems.	
1629.04	Demonstrate battery safety.	
1629.05	Summarize the elements of starting, charging, lighting and accessories systems.	
1629.06	Examine and analyze systems.	
1629.07	Evaluate the proper functioning of the system.	
1629.08	Demonstrate proper repair/replacement techniques.	
	General Electrical System Diagnosis	
1629.09	Use wiring diagrams during the diagnosis (troubleshooting) of electrical circuit problems.	
1629.10	Measure and diagnose the cause(s) of excessive key-off battery drain (parasitic draw); determine necessary action.	
1629.11	Inspect and test switches, connectors, relays, solenoid solid state devices, and wires of electrical/electronic circuits; determine necessary action.	
1629.12	Repair wiring harness.	

Electrical-Electrical/Electronic System Basics		Complete
Content Skill Sets		Knowledge/ Performance
	System Diagnosis and Repair	
1629.13	Differentiate between electrical and engine mechanical problems that cause a slow-crank or no-crank condition.	
	Charging System Diagnosis and Repair	
1629.14	Diagnose (troubleshoot) charging system for the cause of undercharge, no-charge, or overcharge conditions.	
	Lighting Systems Diagnosis and Repair	
1629.15	Diagnose (troubleshoot) the cause of brighter-than-normal, intermittent, dim, or no light operation; determine necessary action.	
	Gauges, Warning Devices, and Driver Information Systems Diagnosis and Repair	
1629.16	Inspect and test gauges and gauge sending units for causes of abnormal gauge readings; determine necessary action.	
1629.17	Diagnose (troubleshoot) the causes of incorrect operation of warning devices and other driver information systems; determine necessary action.	

	Horn and Wiper/Washer Diagnosis and Repair	
1629.18	Diagnose (troubleshoot) causes of incorrect horn operation; perform necessary action.	
1629.19	Diagnose (troubleshoot) causes of incorrect wiper operation; diagnose wiper speed control and park problems; perform necessary action.	

Electrical-Electrical/Electronic System Basics		Complete
Content Skill Sets		Knowledge/ Performance
1929.20	Diagnose (troubleshoot) windshield washer problems; perform necessary action.	
	Accessories Diagnosis and Repair	
1929.21	Diagnose (troubleshoot) incorrect operation of motor-driven accessory circuits; determine necessary action.	
1929.22	Diagnose (troubleshoot) incorrect electric lock operation (including remote keyless entry); determine necessary action.	
1929.23	Diagnose (troubleshoot) incorrect operation of cruise control systems; determine necessary action.	
1929.24	Diagnose (troubleshoot) supplemental restraint system (SRS) problems; determine necessary action.	
1929.25	Check for module communication errors (including CAN/BUS systems) using a scan tool.	

Course Description: This course introduces the student to the knowledge base and technical skills as they relate to the field of Automotive Technology. In the Automotive Technology MLR-1 class areas of study include Automotive Service Consultant, Career Opportunities and Practices, Shop and Personal Safety, Tools and Equipment, Preparing Vehicle for Service, Electrical-General Electrical System Diagnosis, Electrical-Diagnosis and Service of Batteries, and Engines-Lubrication and Cooling Systems Diagnosis and Repair. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, SkillsUSA West Virginia. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Electrical and Electronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1631.01	Inspect and service general electrical/electronic systems.	
1631.02	Inspect and service batteries.	
1631.03	Inspect and service starting systems.	
1631.04	Inspect and service charging systems.	
1631.05	Inspect and service lighting systems.	
1631.06	Inspect and service accessories.	

Engine Performance		Complete
Content Skill Sets		Knowledge/ Performance
1631.07	Inspect and service general engine performance.	
1631.08	Identify and describe electronic engine controls.	
1631.9	Inspect and service fuel, air induction, and exhaust systems.	
1631.10	Inspect and service emissions control systems.	

Customer Relations and Shop Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1631.11	Interpret and estimate repair and work orders.	
1631.12	Utilize vehicle service information.	
1631.13	Exhibit understanding of appropriate customer interactions.	
1631.14	Exhibit understanding of automotive, environmental, and hazardous materials.	
1631.15	Display understanding of safe work environment, shop procedures, and proper handling of a customer vehicle.	

Course Description: The Skill Sets in Automotive Technology AST-2 will concentrate on the skills sets related to Steering and Suspension; and Brakes. This course is recommended as an Elective in Automotive Technology.

Steering & Suspension		Complete
Content Skill Sets		Knowledge/ Performance
1633.01	Summarize the elements of steering systems.	
1633.02	Summarize the elements of suspension systems.	
1633.03	Examine and analyze systems.	
1633.04	Evaluate the proper functioning of the system.	
1633.05	Summarize the elements of adjust wheel systems.	
1633.06	Evaluate conditions of wheels and tires.	
1633.07	Demonstrate proper repair techniques.	
1633.08	Summarize the elements of steering systems.	
1633.09	Summarize the elements of suspension systems.	
	General Suspension and Steering Systems Diagnosis	
1633.10	Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.	
	Steering Systems Diagnosis and Repair	

Steering & Suspension		Complete
Content Skill Sets		Knowledge/ Performance
1633.11	Remove and replace steering wheel; center/time supplemental restraint system (SRS) coil (clock spring).	
1633.12	Diagnose steering column noises, looseness, and binding concerns (including tilt mechanisms); determine necessary action.	
1633.13	Diagnose power steering gear (non-rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine necessary action.	
1633.14	Diagnose power steering gear (rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine necessary action.	
1633.15	Inspect steering shaft universal-joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel; perform necessary action.	
1633.16	Remove and replace rack and pinion steering gear; inspect mounting bushings and brackets.	
1633.17	Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots; replace as needed.	
1633.18	Determine proper power steering fluid type; inspect fluid level and condition.	
1633.19	Remove and reinstall power steering pump.	
1633.20	Remove and reinstall press fit power steering pump pulley; check pulley and belt alignment.	

1633.21	Inspect, replace, and adjust tie rod ends (sockets), tie rod sleeves, and clamps.	
1633.22	Identify hybrid vehicle power steering system electrical circuits, service and safety precautions.	

Steering & Suspension		Complete
Content Skill Sets		Knowledge/ Performance
1633.23	Inspect for power steering fluid leakage; determine necessary action.	
	Suspension Systems Diagnosis and Repair	
1633.24	Diagnose short and long arm suspension system noises, body sway, and uneven ride height concerns; determine necessary action.	
1633.25	Diagnose strut suspension system noises, body sway, and uneven ride height concerns; determine necessary action.	
1633.26	Inspect, remove and install upper and lower control arms, bushings, shafts, and rebound bumpers.	
1633.27	Inspect, remove and install strut rods and bushings.	
1633.28	Inspect, remove and install upper and/or lower ball joints (with or without wear indicators).	
1633.29	Inspect, remove and install steering knuckle assemblies.	
1633.30	Inspect, remove and install short and long arm suspension system coil springs and spring insulators.	
1633.31	Inspect, remove and install torsion bars and mounts.	
1633.32	Inspect, remove and install stabilizer bar (sway bar) bushings, brackets, and links.	
1633.33	Inspect, remove and install strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount.	
1633.34	Inspect rear suspension system leaf spring(s), bushings, center pins/bolts, and mounts.	
1633.35	Inspect, remove and install track bar, strut rods/radius arms, and related mounts and bushings.	
	Related Suspension and Steering Service	
1633.36	Remove, inspect, and service or replace front and rear wheel bearings.	
1633.37	Identify and test tire pressure monitoring system (indirect and direct) for operation; calibrate system; verify operation of instrument panel lamps.	
	Wheel Alignment Diagnosis, Adjustment, and Repair	
1633.38	Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine necessary action.	
1633.39	Prepare vehicle for wheel alignment on the alignment machine; perform four-wheel alignment by checking and adjusting front and rear wheel caster, camber; and toe as required; center steering wheel.	
1633.40	Check toe-out-on-turns (turning radius); determine necessary action.	
1633.41	Check SAI (steering axis inclination) and included angle; determine necessary action.	
1633.42	Check rear wheel thrust angle; determine necessary action.	
1633.43	Check for front wheel setback; determine necessary action.	
1633.44	Check front and/or rear cradle (subframe) alignment; determine necessary action.	
1633.45	Reset steering angle sensor.	
	Wheel and Tire Diagnosis and Repair	
1633.46	Diagnose wheel/tire vibration, shimmy, and noise; determine necessary action.	

1633.47	Measure wheel, tire, axle flange, and hub runout; determine necessary action.	
1633.48	Diagnose tire pull problems; determine necessary action.	
1633.49	Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor.	

Brakes		Complete
Content Skill Sets		Knowledge/ Performance
1633.50	Summarize the elements of hydraulic systems.	
1633.51	Summarize the elements of drum brake systems.	
1633.52	Summarize the elements of disk brake systems.	
1633.53	Summarize the elements of power assist units.	
1633.54	Summarize the elements of Anti-lock Brake systems.	
1633.55	Examine and analyze systems.	
1633.56	Evaluate the proper functioning of the system.	
1633.57	Demonstrate proper repair techniques.	
	General Brake Systems Diagnosis	
1633.58	Identify and interpret brake system concerns; determine necessary action.	
1633.59	Research applicable vehicle and service information, such as brake system operation, vehicle service history, service precautions, and technical service bulletins.	
1633.60	Describe procedure for performing a road test to check brake system operation, including an anti-lock brake system (ABS).	
1633.61	Install wheel and torque lug nuts.	
	Hydraulic System Diagnosis and Repair	
1633.62	Diagnose pressure concerns in the brake system using hydraulic principles (Pascal's Law).	
1633.63	Measure brake pedal height, travel, and free play (as applicable); determine necessary action.	
1633.64	Check master cylinder for internal/external leaks and proper operation; determine necessary action.	
1633.65	Remove, bench bleed, and reinstall master cylinder.	
1633.66	Diagnose poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system; determine necessary action.	
1633.67	Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear; tighten loose fittings and supports; determine necessary action.	
1633.68	Fabricate brake lines using proper material and flaring procedures (double flare and ISO types).	
1633.69	Replace brake lines, hoses, fittings, and supports.	
1633.70	Select, handle, store, and fill brake fluids to proper level.	
1633.71	Inspect, test, and/or replace components of brake warning light system.	
1633.72	Bleed and/or flush brake system.	
1633.73	Test brake fluid for contamination.	
1633.74	Identify components of the brake warning light system.	
	Disc Brake Diagnosis and Repair	
1633.75	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging or pulsation concerns; determine necessary action.	

1633.76	Remove and clean caliper assembly; inspect for leaks and damage/wear to caliper housing; determine necessary action.	
1633.77	Clean and inspect caliper mounting and slides/pins for proper operation, wear, and damage; determine necessary action.	
1633.78	Remove, inspect and replace pads and retaining hardware; determine necessary action.	
1633.79	Lubricate and reinstall caliper, pads, and related hardware; seat pads and inspect for leaks.	
1633.79	Clean and inspect rotor; measure rotor thickness, thickness variation, and lateral runout; determine necessary action.	
1633.80	Remove and reinstall rotor.	
1633.81	Refinish rotor on vehicle; measure final rotor thickness and compare with specifications.	
1633.82	Refinish rotor off vehicle; measure final rotor thickness and compare with specifications.	
1633.83	Retract and re-adjust caliper piston on an integral parking brake system.	
1633.84	Check brake pad wear indicator; determine necessary action.	
1633.85	Describe importance of operating vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations.	
	Power Assist Units Diagnosis and Repair	
1633.86	Check brake pedal travel with, and without, engine running to verify proper power booster operation.	
1633.87	Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.	
1633.88	Inspect the vacuum-type power booster unit for leaks; inspect the check valve for proper operation; determine necessary action.	
1633.89	Inspect and test hydraulically assisted power brake system for leaks and proper operation; determine necessary action.	
1633.90	Measure and adjust master cylinder pushrod length.	
	Miscellaneous (Wheel Bearings, Parking Brakes, Electrical, etc.) Diagnosis and Repair	
1633.91	Diagnose wheel bearing noises, wheel shimmy, and vibration concerns; determine necessary action.	
1633.92	Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings.	
1633.93	Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed.	
1633.94	Check parking brake operation and parking brake indicator light system operation; determine necessary action.	
1633.95	Check operation of brake stop light system.	
1633.96	Replace wheel bearing and race.	
1633.97	Inspect and replace wheel studs.	
1633.98	Remove and reinstall sealed wheel bearing assembly.	
	Electronic Brake, Traction and Stability Control Systems Diagnosis and Repair	
1633.99	Identify and inspect electronic brake control system components; determine necessary action.	
1633.100	Identify traction control/vehicle stability control system components.	
1633.101	Describe the operation of a regenerative braking system.	

Course Description: The Skill Sets in Automotive Technology AST-3 will introduce students to Engines-General Engines: Engine Diagnosis; Removal and Re-installation (R&R); Engines-Diagnosis and Repair of Cooling and Lubrication Systems; and Engine Performance-General Engine Diagnosis. This course is recommended as an Elective in Automotive Technology.

Engines-General Engines: Engine Diagnosis; Removal and Re-installation (R & R)		Complete
Content Skill Sets		Knowledge/ Performance
1635.01	Summarize the elements of engines.	
1635.02	Examine and analyze engine systems.	
1635.03	Evaluate the proper functioning of the engines.	
1635.04	Demonstrate proper repair techniques.	
1635.05	General Engine Diagnosis; Removal and Reinstallation (R & R)	
1635.06	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.	
1635.07	Inspect, remove and replace engine mounts.	
1635.08	Remove and reinstall engine in an OBDII or newer vehicle; reconnect all attaching components and restore the vehicle to running condition.	
1635.09	Cylinder Head and Valve Train Diagnosis and Repair	
1635.10	Remove cylinder head; inspect gasket condition; install cylinder head and gasket; tighten according to manufacturer's specifications and procedures.	
1635.11	Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition.	
1635.12	Inspect pushrods, rocker arms, rocker arm pivots and shafts for wear, bending, cracks, looseness, and blocked oil passages (orifices); determine necessary action.	
1635.13	Inspect and replace camshaft and drive belt/chain includes checking drive gear wear and backlash, end play, sprocket and chain wear, overhead cam drive sprocket (s), drive belt(s), belt tension, tensioners, camshaft reluctor ring/tone-wheel, and valve timing components; verify correct camshaft timing.	
1635.14	Establish camshaft position sensor indexing.	
1635.15	Engine Block Assembly Diagnosis and Repair	
1635.16	Remove, inspect or replace crankshaft vibration damper (harmonic balancer).	

Engines-Diagnosis and Repair of Cooling and Lubrication Systems		Complete
Content Skill Sets		Knowledge/ Performance
1635.17	Identify parts and condition of cooling and lubrication systems.	

1635.18	Demonstrate proper techniques for working with the systems.	
1635.19	Perform oil pressure tests; determine necessary action.	
1635.20	Inspect, remove and replace water pump.	
1635.21	Remove and replace radiator.	
1635.22	Inspect and test fans(s) (electrical or mechanical), fan clutch, fan shroud, and air dams.	
1635.23	Inspect auxiliary coolers; determine necessary action.	
1635.24	Inspect, test, and replace oil temperature and pressure switches and sensors.	
1635.25	Identify causes of engine overheating.	

Engine Performance-General Engine Diagnosis		Complete
Content Skill Sets		Knowledge/ Performance
1635.26	Summarize the elements of powertrain management system.	
1635.27	Examine and analyze systems.	
1635.28	Evaluate the proper functioning of the system.	
1635.29	Demonstrate and diagnose proper repair techniques.	
	General Engine Diagnosis	
1635.30	Identify and interpret engine performance concerns; determine necessary action.	
1635.31	Diagnose abnormal engine noises or vibration concerns; determine necessary action.	
1635.32	Diagnose the cause of excessive oil consumption, coolant consumption, unusual exhaust color, odor, and sound; determine necessary action.	
1635.33	Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns; determine necessary action.	
1635.34	Verify engine operating temperature; determine necessary action.	
1635.35	Verify correct camshaft timing.	
	Computerized Engine Controls Diagnosis and Repair	
1635.36	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	
1635.37	Perform active tests of actuators using a scan tool; determine necessary action.	
	Ignition System Diagnosis and Repair	
1635.38	Diagnose (troubleshoot) ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns; determine necessary action.	
1635.39	Inspect and test crankshaft and camshaft position sensor(s); perform necessary action.	
1635.40	Inspect, test, and/or replace ignition control module, powertrain/engine control module; reprogram as necessary.	
	Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair	
1635.41	Check fuel for contaminants; determine necessary action.	
1635.42	Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume; perform necessary action.	
1635.43	Inspect throttle body, air induction system, intake manifold and gaskets for vacuum leaks and/or unmetered air.	
1635.44	Inspect and test fuel injectors.	
1635.45	Verify idle control operation.	

1635.46	Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; perform necessary action.	
1635.46	Perform exhaust system back-pressure test; determine necessary action.	

Emissions Control Systems Diagnosis and Repair		Complete
Content Skill Sets		Knowledge/ Performance
1635.47	Diagnose oil leaks, emissions, and drivability concerns caused by the positive crankcase ventilation (PCV) system; determine necessary action.	
1635.48	Diagnose emissions and drivability concerns caused by the exhaust gas recirculation (EGR) system; determine necessary action.	
1635.49	Inspect, test, service, and replace components of the EGR system including tubing, exhaust passages, vacuum/pressure controls, filters, and hoses; perform necessary action.	
1635.50	Inspect and test electrical/electronically-operated components and circuits of air injection systems; perform necessary action.	
1635.51	Inspect and test catalytic converter efficiency.	
1635.52	Inspect and test components and hoses of the evaporative emissions control system; perform necessary action.	
1635.53	Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine necessary action.	

Course Description: Automotive Technology MLR-4 completes the Program of Study with skills sets in the areas of Engine Performance-Computerized Engine Controls; Engine Performance-Fuel, Air Induction, and Exhaust Systems Diagnosis and Repair; Engine Performance-Emissions Control Systems Diagnosis and Repair; Automatic Transmission and Transaxle-Diagnosis Maintenance, and Adjustment; Manual Drive Train and Axles-Diagnosis, Maintenance, and Adjustment; and Heating and Air Conditioning-Diagnosis, Maintenance, and Adjustment. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Engine Repair		Complete
Content Skill Sets		Knowledge/ Performance
1637.01	Inspect and service general engine issues.	
1637.02	Inspect, test, and service lubrication and cooling systems.	

Automatic Transmission and Transaxle		Complete
Content Skill Sets		Knowledge/ Performance
1637.03	Check fluids on transmission/transaxle.	
1637.04	Perform in-vehicle transmission/transaxle inspections and service.	
1637.05	Describe and identify operational characteristics of transmission/transaxle for CVT and hybrids.	

Manual Drive Train and Axles		Complete
Content Skill Sets		Knowledge/ Performance
1637.06	Check fluid condition and service transmissions and transaxles.	
1637.07	Perform clutch master cylinder inspections and service.	
1637.08	Identify, describe, inspect, and service manual transmission and transaxle issues.	
1637.09	Inspect and service drive shaft, half shafts, universal, and constant-velocity (CV) Joints.	
1637.10	Inspect and service four-wheel drive and all-wheel drive systems.	

Heating and Air Conditioning

Complete

Content Skill Sets

Knowledge/
Performance

1637.11	Inspect and service refrigeration system components.	
1637.12	Inspect and service heating, ventilation, and engine cooling systems.	
1637.13	Inspect and service operating systems and related controls.	

Customer Relations and Shop Procedures

Complete

Content Skill Sets

Knowledge/
Performance

1637.14	Interpret and estimate repair and work orders.	
1637.15	Utilize vehicle service information.	
1637.16	Exhibit understanding of appropriate customer interactions.	
1637.17	Exhibit understanding of automotive, environmental, and hazardous materials.	
1637.18	Display understanding of safe work environment and shop procedures, and proper handling of a customer vehicle.	

Course Description: This course introduces the students to the knowledge and technical skills in order to prepare for CCNA certification. In CCNA1, students will explore scaling Networks, LAN Redundancy Link Aggregation, Wireless LANs and Adjusting and Trouble Shoot Single-Area OSPF. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. This course is recommended as an Elective in the CISCO Networking Academies Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in the IT industry. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

PC Principles		Complete
Content Skill Sets		Knowledge/ Performance
1654.01	Identify physical and equipment safety and maintenance principles and practices.	
1654.02	Demonstrate understanding of storage methods (e.g., external, network attached, cloud).	
1654.03	Exhibit understanding of memory.	
1654.04	Demonstrate uses of eSATA, Bluetooth®, and USB.	
1654.05	Identify different types and standards of processors.	
1654.06	Develop an understanding of various client operating systems.	

Network Connections		Complete
Content Skill Sets		Knowledge/ Performance
1654.07	Demonstrate understanding of Network Interface Cards (NICs).	
1654.08	Identify different physical and logical characteristics of network connections.	
1654.09	Demonstrate use of remote access (e.g., Windows® terminal services, terminal emulation software, VPN, telephone connections, SSH).	
1654.10	Exhibit understanding of wired and wireless communications and standards.	

Physical Connection Types		Complete
Content Skill Sets		Knowledge/ Performance
1654.11	Identify cable components and uses, including twisted pair and fiber.	
1654.12	Demonstrate understanding of signal characteristics and transmission among various media types.	

Network Standards and Devices		Complete
Content Skill Sets		Knowledge/ Performance
1654.13	Demonstrate understanding of OSI model layers.	
1654.14	Demonstrate familiarity with TCP/IP model.	
1654.15	Identify IEEE, EIA/TIA standards and common Port numbers.	
1654.16	Distinguish various types and uses of wired network devices.	
1654.17	Distinguish various types and uses of wireless network devices.	

Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1654.18	Utilize ping, ipconfig, tracert, and netstat commands.	
1654.19	Maintain and troubleshoot cabling.	
1654.20	Perform local and remote loopback.	
1654.21	Identify various troubleshooting methodologies (e.g., top-down, bottom-up, divide and conquer).	

Routing and Switching		Complete
Content Skill Sets		Knowledge/ Performance
1654.22	Explain the difference between static, dynamic, default, and gateway routes.	
1654.23	Demonstrate an understanding of WAN connection types.	
1654.24	Recognize and implement basic router operations and configurations.	
1654.25	Demonstrate understanding of switch operations and configurations (e.g., VLAN, interVLAN).	
1654.26	Differentiate between a collision domain and a broadcast domain.	

Network Terminology		Complete
Content Skill Sets		Knowledge/ Performance
1654.27	Demonstrate familiarity with various protocols and architecture terminology.	
1654.28	Demonstrate familiarity with DHCP and DNS.	
1654.29	Identify various network operating systems (e.g., Windows®, Linux®).	
1654.30	Identify various network types.	

Network Architecture		Complete
-----------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
1654.31	Exhibit understanding of physical and logical networking topologies (e.g., access, core, distribution).	

Network Addressing		Complete
Content Skill Sets		Knowledge/ Performance
1654.32	Exhibit knowledge of IP network addressing (e.g., IPv4, IPv6).	
1654.33	Demonstrate understanding of Media Access Control (MAC) addressing.	
1654.34	Convert binary, hexadecimal, and decimal numbering systems.	
1654.35	Create subnets from a network address.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1654.36	Identify and troubleshoot basic organizational and acceptable use policies.	

Networking Planning and Design		Complete
Content Skill Sets		Knowledge/ Performance
1654.37	Exhibit understanding of analysis and planning concepts.	
1654.38	Identify various forms of power protection, backups, and UPS.	
1654.39	Install, maintain, and troubleshoot physical and wireless networks according to design specifications.	
1654.40	Describe various access methods (e.g., ISP, DSL, broadband/cable, satellite, wireless, mobile).	
1654.41	Explain the principles of virtualization.	

Course Description: This course introduces the students to the knowledge and technical skills in order to prepare for CCNA certification. In CCNA2, students will explore Multi-area OSPF, EIGRP, EIGRP Advanced Configurations and IOS Images and Licensing. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. This course is recommended as an Elective in the CISCO Networking Academies Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in the IT industry. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

PC Principles		Complete
Content Skill Sets		Knowledge/ Performance
1658.01	Identify different types and standards of processors.	

Network Connections		Complete
Content Skill Sets		Knowledge/ Performance
1658.02	Identify different physical and logical characteristics of network connections.	
1658.03	Demonstrate use of remote access (e.g., Windows® terminal services, terminal emulation software, VPN, telephone connections, SSH).	
1658.04	Exhibit understanding of wired and wireless communications and standards.	

Physical Connection Types		Complete
Content Skill Sets		Knowledge/ Performance
1658.05	Identify cable components and uses, including twisted pair and fiber.	
1658.06	Demonstrate understanding of signal characteristics and transmission among various media types.	

Network Standards and Devices		Complete
Content Skill Sets		Knowledge/ Performance
1658.07	Demonstrate understanding of OSI model layers.	
1658.08	Demonstrate familiarity with TCP/IP model.	
1658.09	Identify IEEE, EIA/TIA standards and common Port numbers.	

1658.10	Distinguish various types and uses of wired network devices.	
1658.11	Distinguish various types and uses of wireless network devices.	

Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1658.12	Utilize ping, ipconfig, tracert, and netstat commands.	
1658.13	Maintain and troubleshoot cabling.	
1658.14	Perform local and remote loopback.	
1658.15	Identify various troubleshooting methodologies (e.g., top-down, bottom-up, divide and conquer).	

Routing and Switching		Complete
Content Skill Sets		Knowledge/ Performance
1658.16	Explain the difference between static, dynamic, default, and gateway routes.	
1658.17	Demonstrate an understanding of WAN connection types.	
1658.18	Recognize and implement basic router operations and configurations.	
1658.19	Demonstrate understanding of switch operations and configurations (e.g., VLAN, interVLAN).	
1658.21	Compare and contrast routed vs. routing protocols.	
1658.22	Differentiate between a collision domain and a broadcast domain.	

Networking Terminology		Complete
Content Skill Sets		Knowledge/ Performance
1658.23	Demonstrate familiarity with various protocols and architecture terminology.	
1658.24	Demonstrate familiarity with DHCP and DNS.	
1658.25	Identify various network operating systems (e.g., Windows®, Linux®).	
1658.26	Identify various network types.	

Network Architecture		Complete
Content Skill Sets		Knowledge/ Performance
1658.27	Exhibit understanding of various LAN, MAN, PAN, WLAN, and WAN topologies.	

Network Addressing

Complete

Content Skill Sets

Knowledge/
Performance

1658.28	Exhibit knowledge of IP network addressing (e.g., IPv4, IPv6).	
1658.29	Differentiate between classful and classless IP addressing.	
1658.30	Demonstrate understanding of Media Access Control (MAC) addressing.	
1658.31	Convert binary, hexadecimal, and decimal numbering systems.	
1658.32	Create subnets from a network address.	

Security

Complete

Content Skill Sets

Knowledge/
Performance

1658.33	Identify and troubleshoot basic organizational and acceptable use policies.	
1658.34	Implement and maintain device security procedures.	
1658.35	Explain the defense in-depth approach to security (e.g., DMZ, Bastion Host).	
1658.36	Identify and troubleshoot network security attacks and breaches.	
1658.37	Identify and troubleshoot viruses, worms, and other forms of malware.	
1658.38	Install and maintain appropriate firewalls, including NAT.	
1658.39	Explain general cryptography concepts.	

Networking Planning and Design

Complete

Content Skill Sets

Knowledge/
Performance

1658.40	Exhibit understanding of analysis and planning concepts.	
1658.41	Compare and contrast principles of logical and physical design.	
1658.42	Identify various forms of power protection, backups, and UPS.	
1658.43	Install, maintain, and troubleshoot physical and wireless networks according to design specifications.	
1658.44	Describe various access methods (e.g., ISP, DSL, broadband/cable, satellite, wireless, mobile).	
1658.45	Explain the principles of virtualization.	

Course Description: This course introduces the students to the knowledge and technical skills in order to prepare for CCNA certification. In CCNA3, students will explore Hierarchical Network Design, connect to the WAN, explore Point-to-Point Connections, configure Frame Relay and configure/troubleshoot Network Address Translation for IPv4. This course is recommended as an Elective in the CISCO Networking Academies Program of Study. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problemsolving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in the IT industry. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Network Connections		Complete
Content Skill Sets		Knowledge/ Performance
1659.01	Demonstrate use of remote access (e.g., Windows® terminal services, terminal emulation software, VPN, telephone connections, SSH).	

Physical Connection Types		Complete
Content Skill Sets		Knowledge/ Performance
1659.02	Identify cable components and uses, including twisted pair and fiber.	

Network Standards and Devices		Complete
Content Skill Sets		Knowledge/ Performance
1659.03	Demonstrate understanding of OSI model layers.	
1659.04	Distinguish various types and uses of wired network devices.	

Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1659.05	Utilize ping, ipconfig, tracert, and netstat commands.	
1659.06	Maintain and troubleshoot cabling.	
1659.07	Identify various troubleshooting methodologies (e.g., top-down, bottom-up, divide and conquer).	
1659.08	Utilize, perform, and analyze a packet capture.	

Routing and Switching

Complete

Content Skill Sets

Knowledge/
Performance

1659.09	Explain the difference between static, dynamic, default, and gateway routes.	
1659.10	Demonstrate an understanding of WAN connection types.	
1659.11	Recognize and implement basic router operations and configurations.	
1659.12	Demonstrate understanding of switch operations and configurations (e.g., VLAN, interVLAN).	
1659.13	Compare and contrast routed vs. routing protocols.	
1659.14	Differentiate between a collision domain and a broadcast domain.	

Network Terminology

Complete

Content Skill Sets

Knowledge/
Performance

1659.15	Demonstrate familiarity with various protocols and architecture terminology.	
1659.16	Demonstrate familiarity with DHCP and DNS.	
1659.17	Identify various network types.	

Network Architecture

Complete

Content Skill Sets

Knowledge/
Performance

1659.18	Exhibit understanding of various LAN, MAN, PAN, WLAN, and WAN topologies.	
---------	---	--

Network Addressing

Complete

Content Skill Sets

Knowledge/
Performance

1659.19	Exhibit knowledge of IP network addressing (e.g., IPv4, IPv6).	
1659.20	Differentiate between classful and classless IP addressing.	
1659.21	Demonstrate understanding of Media Access Control (MAC) addressing.	
1659.22	Convert binary, hexadecimal, and decimal numbering systems.	
1659.23	Create subnets from a network address.	

Security

Complete

Content Skill Sets

Knowledge/
Performance

1659.24	Identify and troubleshoot basic organizational and acceptable use policies.	
---------	---	--

1659.25	Implement and maintain device security procedures.	
1659.26	Explain the defense in-depth approach to security (e.g., DMZ, Bastion Host).	
1659.27	Identify and troubleshoot network security attacks and breaches.	
1659.28	Identify and troubleshoot viruses, worms, and other forms of malware.	
1659.29	Install and maintain appropriate firewalls, including NAT.	
1659.31	Explain general cryptography concepts.	

Networking Planning and Design		Complete
Content Skill Sets		Knowledge/ Performance
1659.32	Exhibit understanding of analysis and planning concepts.	
1659.33	Compare and contrast principles of logical and physical design.	
1659.34	Identify various forms of power protection, backups, and UPS.	
1659.35	Explain the appropriate use and benefits of thin clients.	
1659.36	Install, maintain, and troubleshoot physical and wireless networks according to design specifications.	
1659.37	Describe various access methods (e.g., ISP, DSL, broadband/cable, satellite, wireless, mobile).	
1659.38	Explain the principles of virtualization.	

Course Description: This course introduces the students to the knowledge and technical skills in order to prepare for CCNA certification. In CCNA4, students will explore Broadband Solutions, Secure Site-to-Site Connectivity, Monitor the Network and Troubleshoot the Network. This course is recommended as an Elective in the CISCO Networking Academies Program of Study. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in the IT industry. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Network Connections		Complete
Content Skill Sets		Knowledge/ Performance
1660.01	Demonstrate use of remote access (e.g., Windows® terminal services, terminal emulation software, VPN, telephone connections, SSH).	

Physical Connection Types		Complete
Content Skill Sets		Knowledge/ Performance
1660.02	Identify cable components and uses, including twisted pair and fiber.	

Network Standards and Devices		Complete
Content Skill Sets		Knowledge/ Performance
1660.03	Demonstrate understanding of OSI model layers.	
1660.04	Distinguish various types and uses of wired network devices.	

Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1660.05	Utilize ping, ipconfig, tracert, and netstat commands.	
1660.06	Identify various troubleshooting methodologies (e.g., top-down, bottom-up, divide and conquer).	

Routing and Switching		Complete
Content Skill Sets		Knowledge/ Performance
1660.07	Explain the difference between static, dynamic, default, and gateway routes.	
1660.08	Demonstrate an understanding of WAN connection types.	
1660.09	Recognize and implement basic router operations and configurations.	
1660.10	Demonstrate understanding of switch operations and configurations (e.g., VLAN, interVLAN).	
1660.11	Compare and contrast routed vs. routing protocols.	
1660.12	Differentiate between a collision domain and a broadcast domain.	

Network Terminology		Complete
Content Skill Sets		Knowledge/ Performance
1660.13	Demonstrate familiarity with various protocols and architecture terminology.	
1660.14	Demonstrate familiarity with DHCP and DNS.	
1660.15	Identify various network types.	

Network Architecture		Complete
Content Skill Sets		Knowledge/ Performance
1660.16	Exhibit understanding of various LAN, MAN, PAN, WLAN, and WAN topologies.	

Network Addressing		Complete
Content Skill Sets		Knowledge/ Performance
1660.17	Exhibit knowledge of IP network addressing (e.g., IPv4, IPv6).	
1660.18	Demonstrate understanding of Media Access Control (MAC) addressing.	
1660.19	Convert binary, hexadecimal, and decimal numbering systems.	
1660.20	Create subnets from a network address.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1660.21	Identify and troubleshoot basic organizational and acceptable use policies.	
1660.22	Implement and maintain device security procedures.	
1660.23	Explain the defense in-depth approach to security (e.g., DMZ, Bastion Host).	

1660.24	Identify and troubleshoot network security attacks and breaches.	
1660.25	Identify and troubleshoot viruses, worms, and other forms of malware.	
1660.26	Install and maintain appropriate firewalls, including NAT.	

Networking Planning and Design		Complete
Content Skill Sets		Knowledge/ Performance
1660.27	Exhibit understanding of analysis and planning concepts.	
1660.28	Compare and contrast principles of logical and physical design.	
1660.29	Identify various forms of power protection, backups, and UPS.	
1660.30	Explain the appropriate use and benefits of thin clients.	
1660.31	Install, maintain, and troubleshoot physical and wireless networks according to design specifications.	
1660.32	Describe various access methods (e.g., ISP, DSL, broadband/cable, satellite, wireless, mobile).	
1660.33	Explain the principles of virtualization.	

Course Description: This course will introduce students to basic blueprint reading fundamentals. Areas of study include blueprints and symbols. Students will demonstrate knowledge and technical expertise in interpreting blueprints. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to drafting, design, and related engineering occupations. Safety instruction is integrated into all activities.

Blueprints		Complete
Content Skill Sets		Knowledge/ Performance
1661.01	The terms, components and symbols applicable to blueprint reading.	
1661.02	Examine the function and use of various types of drawings.	
1661.03	Examine the alphabet of lines.	
1661.04	Differentiate between notes and specifications.	
1661.05	Examine information from title blocks, revision blocks, release blocks, and tolerance blocks.	
1661.06	Write a bill of materials/parts list for a given drawing.	

Symbols		Complete
Content Skill Sets		Knowledge/ Performance
1661.07	Blueprint symbols.	
1661.08	Recognize drawing symbols.	
1661.09	Recognize common blueprint abbreviation.	
1661.10	Prepare working copies of original drawings.	

Course Description: This course covers PC hardware and peripherals, mobile device hardware, networking and troubleshooting hardware and network connectivity issues. Content Skill Sets are based on testing objectives for the CompTIA A+ 220-901 certification. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Mobile Devices		Complete
Content Skill Sets		Knowledge/ Performance
1664.01	Install and configure laptop hardware and components.	
1664.02	Install components within the display of a laptop.	
1664.03	Use appropriate laptop features.	
1664.04	Compare and contrast characteristics of various types of other mobile devices.	
1664.05	Connect and configure accessories and ports of other mobile devices.	
1664.06	Configure basic mobile device network connectivity and application support.	
1664.07	Use methods to perform mobile device synchronization.	

Networking		Complete
Content Skill Sets		Knowledge/ Performance
1664.08	Compare and contrast TCP and UDP ports, protocols, and their purposes.	
1664.09	Compare and contrast common networking hardware devices.	
1664.10	Install and configure a basic wired/wireless SOHO network.	
1664.11	Compare and contrast wireless networking protocols.	
1664.12	Summarize the properties and purposes of services provided by networked hosts.	
1664.13	Explain common network configuration concepts.	
1664.14	Compare and contrast Internet connection types, network types, and their features.	
1664.15	Use appropriate networking tools.	

Hardware		Complete
Content Skill Sets		Knowledge/ Performance
1664.16	Explain basic cable types, features, and their purposes.	

1664.17	Identify common connector types.	
1664.18	Install RAM types.	
1664.19	Select, install and configure storage devices.	
1664.20	Install and configure motherboards, CPUs, and add-on cards.	
1664.21	Explain the purposes and uses of various peripheral types.	
1664.22	Summarize power supply types and features.	
1664.23	Select and configure appropriate components for a custom PC configuration to meet customer specifications or needs.	
1664.24	Install and configure common devices.	
1664.25	Configure SOHO multifunction devices/printers and settings.	
1664.26	Install and maintain various print technologies.	

Virtualization and Cloud Computing		Complete
Content Skill Sets		Knowledge/ Performance
1664.27	Compare and contrast cloud computing concepts.	
1664.28	Set up and configure client-side virtualization.	

Hardware and Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1664.29	Use the best practice methodology to resolve problems.	
1664.30	Troubleshoot problems related to motherboards, RAM, CPUs, and power.	
1664.31	Troubleshoot hard drives and RAID arrays.	
1664.32	Troubleshoot video, projector, and display issues.	
1664.33	Troubleshoot common mobile device issues while adhering to the appropriate procedures.	
1664.34	Troubleshoot printers.	
1664.35	Troubleshoot common wired and wireless network problems.	

Course Description: This course covers installing and configuring operating systems including Windows, iOS, Android, Apple OS X and Linux. It also addresses security, the fundamentals of cloud computing and operational procedures. Content Skill Sets are based on testing objectives for the CompTIA A+ 220-902 certification. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Operating Systems		Complete
Content Skill Sets		Knowledge/ Performance
1665.01	Compare and contrast common operating system types and their purposes.	
1665.02	Compare and contrast features of Microsoft Windows versions.	
1665.03	Summarize general OS installation considerations and upgrade methods.	
1665.04	Use appropriate Microsoft command line tools.	
1665.05	Use Microsoft operating system features and tools.	
1665.06	Use Microsoft Windows Control Panel utilities.	
1665.07	Summarize application installation and configuration concepts.	
1665.08	Configure Microsoft Windows networking on a client/desktop.	
1665.09	Use features and tools of the Mac OS and Linux client/desktop operating systems.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1665.10	Summarize the importance of physical security measures.	
1665.11	Explain logical security concepts.	
1665.12	Compare and contrast wireless security protocols and authentication methods.	
1665.13	Detect, remove, and prevent malware using appropriate tools and methods.	
1665.14	Compare and contrast social engineering, threats, and vulnerabilities.	
1665.15	Compare and contrast the differences of basic Microsoft Windows OS security settings.	
1665.16	Implement security best practices to secure a workstation.	
1665.17	Implement methods for securing mobile devices.	
1665.18	Implement appropriate data destruction and disposal methods.	
1665.19	Configure security on SOHO wireless and wired networks.	

Software Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1665.20	Troubleshoot Microsoft Windows OS problems.	
1665.21	Troubleshoot and resolve PC security issues.	
1665.22	Use best practice procedures for malware removal.	
1665.23	Troubleshoot mobile OS and application issues.	
1665.24	Troubleshoot mobile OS and application security issues.	

Operational Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1665.25	Compare and contrast best practices associated with types of documentation.	
1665.26	Implement basic change management best practices.	
1665.27	Implement basic disaster prevention and recovery methods.	
1665.28	Explain common safety procedures.	
1665.29	Explain environmental impacts and appropriate controls.	
1665.30	Explain the processes for addressing prohibited content/activity, and privacy, licensing, and policy concepts.	
1665.31	Use proper communication techniques and professionalism.	
1665.32	Identify the basics of scripting.	
1665.33	Use remote access technologies.	

Course Description: This course introduces the student to the knowledge base and technical skills as they relate to the field of Collision Repair Technology. In the Fundamentals of Collision Repair Technology class areas of study include career opportunities and practices, integrated academics, knowledge of tools and equipment, panel straightening techniques, and introduction to vehicle preparation. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1671.01	Demonstrate knowledge of safety and environmental requirements in the collision repair industry.	
1671.02	Demonstrate appropriate care and maintenance of shop tools and equipment.	
1671.03	Identify proper safety techniques for the use of shop equipment, including PPE.	

Business Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance
1671.04	Demonstrate knowledge of estimating terminology.	
1671.05	Identify employability skills within the collision repair industry.	
1671.06	Calculate estimates and costs related to repair procedures.	

Painting and Refinishing		Complete
Content Skill Sets		Knowledge/ Performance
1671.07	Demonstrate masking and taping application techniques.	
1671.08	Identify and demonstrate surface preparation techniques.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Collision Repair Technology Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary in detailing and interior parts for those enrolled in Collision Repair Technology. This course is recommended as an Elective in Collision Repair Technology.

Vehicle Detailing		Complete
Content Skill Sets		Knowledge/ Performance
1672.01	Identifying, replacing, or repairing various types of interior parts.	
1672.02	Performing proper detailing techniques to the interior and exterior of a vehicle.	
1672.03	Recognize and follow general collision lab safety guidelines, including the wearing of appropriate protective equipment and handling of supplemental restraint system components.	
1672.04	Use service manuals for proper removal and installation procedures for interior parts.	
1672.05	Locate and understand vehicle trim code labels.	
1672.06	Evaluate and demonstrate the proper selection and use of interior specialty tools.	
1672.07	Identify general attachment methods for interior components.	
1672.08	Demonstrate the removal and installation procedures for interior parts.	
1672.09	Identify the difference between OEM and aftermarket bolt on and adhered interior accessories.	
1672.10	Demonstrate proper repair procedures for damage interior parts.	
1672.11	Identify various products and materials associated with the detailing process.	
1672.12	Utilize a detailer checklist and recognize why a checklist is important.	
1672.13	Inspect parts, equipment, or vehicles for cleanliness, damage, and compliance with standards or regulations.	
1672.14	Determine the exterior touch-up procedures involved in the detailing process.	
1672.15	Identify odor sources and become familiar with the elimination procedures.	
1672.16	Scrub, scrape, or spray machine parts, equipment, or vehicles, using scrapers, brushes, clothes, cleaners, disinfectants, insecticides, acid, abrasives, vacuums, or hoses.	
1672.16	Rinse objects and place them on drying racks or use cloth, squeegees, or air compressors to dry surfaces.	
1672.17	Analyze types of finish damage that can be repaired in the detailing process.	
1672.18	Describe the types of finish defects that are beyond the detailing process.	
1672.19	Apply waxes and sealants as it relates to the detailing process.	
1672.20	Utilize all steps involved in the exterior detailing of a vehicle (wash body, tires, degrease engine).	
1672.21	Remove excess polish or wax from emblems, moldings, door jams, etc.	
1672.22	Clean and polish vehicle windows.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Collision Repair Technology Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for mechanical and electrical repairs as they apply to Collision Repair Technology. This course is recommended as an Elective in Collision Repair Technology.

Steering and Suspension		Complete
Content Skill Sets		Knowledge/ Performance
1673.01	Identifying, inspecting and diagnosing suspension and steering systems.	
1673.02	Identify, inspect, and diagnose steering components.	
1673.03	Inspect, identify, and diagnose alignment angles and suspension components.	
1673.04	Diagnose steering drivability problems as related to collision repair.	

Supplemental Restraint System		Complete
Content Skill Sets		Knowledge/ Performance
1673.05	Inspecting and servicing supplemental airbag restraint systems.	
1673.06	Disarm airbag system in accordance with manufacturer's procedures.	
1673.07	Inspect and replace damaged sensors and wiring in accordance with manufacturer's procedures and insure proper sensor orientation.	
1673.08	Verify that system is armed and operational in accordance with manufacturer's procedures.	
1673.09	Determine removal and installation process of non-deployed airbag and observe manufacturer's safety procedures.	
1673.10	Use fault codes to diagnose and repair airbag system.	

Active/Passive Restraint System		Complete
Content Skill Sets		Knowledge/ Performance
1673.11	Inspecting and servicing restraint systems.	
1673.12	Examine removal and installation process of seatbelt and shoulder harness assembly in accordance with manufacturer's procedures.	
1673.13	Inspect anchorages for deformation, repair as required.	
1673.14	Verify proper operation of seatbelt in accordance with manufacturer's procedures.	

1673.15	Determine removal and installation process of track and drive assembly, lap retractor, torso retractor assembly, inboard buckle-lap retractor and knee blocker.	
---------	---	--

Air Conditioning		Complete
Content Skill Sets		Knowledge/ Performance
1673.16	Inspecting and servicing air conditioner systems.	
1673.17	Inspect, determine removal, and installation process of damaged air conditioner system hoses, lines, fittings, and related components (compressor, condenser, evaporator).	
1673.18	Recharge air conditioner according to manufacturer's recommendations.	

Hydraulic Brake Systems		Complete
Content Skill Sets		Knowledge/ Performance
1673.19	Inspecting and diagnosing hydraulic brake systems.	
1673.20	Inspect brake system components for collision repair damage.	
1673.21	Determine removal and installation process of damaged brake system components.	

Cooling Systems		Complete
Content Skill Sets		Knowledge/ Performance
1673.22	Inspecting and servicing the cooling systems.	
1673.23	Inspect cooling system components for collision repair damage.	

Electrical Components		Complete
Content Skill Sets		Knowledge/ Performance
1673.24	Analyzing, repairing and replacing electrical components.	
1673.25	Demonstrate the knowledge of electrical concepts as related to collision repair.	
1673.26	Inspect electrical components for collision repair damage.	
1673.27	Diagnose body related electrical components for problems.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Collision Repair Technology Program of Study. Incorporated into this course are elements of advanced refinishing skills necessary for a career in the collision repair industry. This course is recommended as an Elective in Collision Repair Technology.

Color Definition and Tinting Process		Complete
Content Skill Sets		Knowledge/ Performance
1674.01	Composition of light as it relates to vehicle finish.	
1674.02	Using the color wheel for plotting, mapping and tinting procedures.	
1674.03	View color and determine how light affects color.	
1674.04	Use a spectrophotometer to obtain a bendable match.	
1674.05	Examine the differences in OEM color standards with the use of a manufacturer's variance deck.	
1674.06	Describe color theory and how it relates to matching point.	
1674.07	Explain the color wheel and the three dimensions of color.	
1674.08	Perform the tinting process.	
1674.09	Explain when tinting may be necessary based on spray out panels.	
1674.10	Plot solid and metallic colors.	
1674.11	Map solid and metallic colors.	
1674.12	Adjust spray gun patterns and air pressure to accommodate advance spraying techniques.	

Application of Specialty Paints		Complete
Content Skill Sets		Knowledge/ Performance
1674.13	Mixing, matching and applying metallic, mica, pearl and prism effects.	
1674.14	Analyze blending techniques and methods.	
1674.15	Identify topcoat additives and materials.	
1674.16	Make and evaluate test panels.	
1674.17	Mix and apply metallic, mica, and pearl refinish systems.	
1674.18	Create a letdown panel.	
1674.19	Mix and apply a tri-coat/multi-stage refinish system.	
1674.20	Use a tri-coat/multi-stage refinish system to achieve a bendable match.	

Course Description: Non-Structural Analysis and Damage Repair will continue to build student skill sets in non-structural analysis and repair of metal and composite parts. Students will utilize integrated academics, problem-solving techniques, and manipulative skills while completing lab activities to develop an understanding of course concepts. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1675.01	Demonstrate knowledge of safety and environmental requirements in the collision repair industry.	
1675.02	Demonstrate appropriate care and maintenance of shop tools and equipment.	
1675.03	Identify proper safety techniques for the use of shop equipment, including PPE.	

Business Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance
1675.04	Apply basic business practices within the collision repair industry, including estimating.	
1675.05	Identify employability skills within the collision repair industry.	

Non-Structural		Complete
Content Skill Sets		Knowledge/ Performance
1675.06	Demonstrate understanding of metal straightening and finishing.	
1675.07	Identify automotive plastics and proper repair procedures.	
1675.08	Diagnose primary and secondary non-structural damage.	
1675.09	Demonstrate knowledge of movable and stationary glass.	
1675.10	Utilize basic corrosion protection procedures.	
1675.11	Use adhesive bonding procedures.	
1675.12	Remove and replace automotive trim.	
1675.13	Remove, install, replace, align, or repair non-structural panels.	
1675.14	Remove, install, and replace ancillary components (e.g., headlamps, under-hood fuse boxes).	

Mechanical and Electrical Systems

Mechanical and Electrical Systems		Complete
Content Skill Sets		Knowledge/ Performance
1675.15	Verify functions of electrical system and basic wiring repair (e.g., soldering, quick connectors).	
1675.16	Perform basic mechanical and electrical diagnostic operations.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Collision Repair Technology Program of Study. Incorporated into this course are elements of advanced custom finishing processes and skills necessary for a career in the collision repair industry. This course is recommended as an Elective in Collision Repair Technology.

Custom Refinishing and Paint Application		Complete
Content Skill Sets		Knowledge/ Performance
1676.01	Inspecting, operating, and cleaning custom spray equipment.	
1676.02	Using various techniques as it relates to custom finish.	
1676.03	Mixing, matching, and applying various custom refinish systems.	
1676.04	Determine types of colors to be used for specific color schemes (flames, marbelizing, scallops, etc.).	
1676.05	Check, adjust, and determine condition of all refinishing equipment used in a custom refinishing process.	
1676.06	Shake, stir, and reduce custom paints according to manufacturer’s recommendation.	
1676.07	Develop proper techniques for application of custom finishes (flame layout, two-tones, striping, card masking, marble effect, cobweb, multi-layered paint, and spider web painting).	
1676.08	Monitor painting operations to identify flaws such as blisters or streaks and correct their causes.	
1676.09	Apply candies and pearls according to manufacturer’s specification.	
1676.10	Understand and develop techniques for spraying special effect and prismatic paints.	
1676.11	Evaluate proper techniques for color blending.	
1676.12	Utilize abilities needed to apply artwork (pictures, lettering, designs, etc.).	
1676.13	Utilize abilities needed for use of pin striping brushes and wheels.	
1676.14	Color, sand, and buff to achieve maximum gloss.	
1676.15	Remove swirl marks and surface imperfections using compounds and final glazing materials.	
1676.16	Clean and detail final project.	
1676.17	Dispose of hazardous waste according to EPA regulations.	
1676.18	Clean, lubricate, and store equipment properly.	

Course Description: Structural Analysis and Damage Repair will continue to build student skill sets in frame and unibody type vehicles using welding techniques, measuring equipment, and frame machines. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1677.01	Demonstrate knowledge of safety and environmental requirements in the collision repair industry.	
1677.02	Demonstrate appropriate care and maintenance of shop tools and equipment.	
1677.03	Identify proper safety techniques for the use of shop equipment, including PPE.	

Business Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance
1677.04	Apply basic business practices within the collision repair industry, including estimating.	
1677.05	Identify employability skills within the collision repair industry.	

MIG/GMAW and STRSW		Complete
Content Skill Sets		Knowledge/ Performance
1677.06	Demonstrate vehicle protection procedures.	
1677.07	Describe various cutting and weld removal processes.	
1677.08	Describe and differentiate various types and uses of welding processes.	

Structural		Complete
Content Skill Sets		Knowledge/ Performance
1677.09	Select, set-up, and utilize manual measuring systems.	
1677.10	Explain and identify computerized 3-D measuring systems (Add).	
1677.11	Demonstrate set up and operation of various pulling systems.	
1677.12	Diagnose primary and secondary structural damage.	
1677.13	Demonstrate knowledge of working with high strength steel.	

1677.14	Replace and/or repair structural components.	
---------	--	--

Mechanical and Electrical Systems		Complete
Content Skill Sets		Knowledge/ Performance
1677.15	Identify basic steering and suspension components (e.g., tie rod ends, ball joints, steering racks).	
1677.16	Identify service and operation of air conditioning (AC) and cooling systems.	
1677.17	Identify a basic safety restraint system (SRS).	

Course Description: Surface Preparation and Refinishing will continue to build student skill sets in preparing a surface for refinishing; inspect, clean and operate spraying equipment; detail a vehicle; and diagnose finish defects. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1679.01	Demonstrate knowledge of safety and environmental requirements in the collision repair industry.	
1679.02	Demonstrate appropriate care and maintenance of shop tools and equipment.	
1679.03	Identify proper safety techniques for the use of shop equipment, including PPE.	

Business Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance
1679.04	Apply basic business practices within the collision repair industry, including estimating.	
1679.05	Identify employability skills within the collision repair industry.	

MIG/GMAW and STRSW		Complete
Content Skill Sets		Knowledge/ Performance
1679.06	Demonstrate vehicle protection procedures.	
1679.07	Demonstrate understanding of welding set-up process.	
1679.08	Describe and differentiate various types and uses of welding processes.	
1679.09	Describe various cutting and weld removal processes.	

Painting and Refinishing		Complete
Content Skill Sets		Knowledge/ Performance
1679.10	Identify and demonstrate surface preparation techniques.	
1679.11	Demonstrate masking and taping application techniques.	
1679.12	Identify and demonstrate paint materials preparation techniques.	
1679.13	Identify causes and remedies for paint defects.	

1679.14	Identify and demonstrate paint materials application techniques.	
---------	--	--

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the Broadcasting Technology Program of Study. Areas of study include fundamentals of broadcasting, broadcasting equipment, on-air presentation skills, and student organizations. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to broadcasting occupations. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1681.01	Demonstrate safe handling of lighting instruments.	
1681.02	Apply fundamentals of ladder safety.	
1681.03	Demonstrate knowledge of fire safety principles.	
1681.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1681.05	Define target audience, including demographics and ratings.	
1681.06	Identify various budget/financial issues.	
1681.07	Demonstrate knowledge of concept development.	
1681.08	Demonstrate knowledge of various script formats, including storyboarding.	
1681.09	Identify and describe various communication delivery methods.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1681.10	Collect, set up, and maintain props, set dressings, and scenery.	
1681.11	Select appropriate music for production.	
1681.12	Identify parts of cameras, accessories, and camera support systems.	
1681.13	Perform camera movements.	
1681.14	Properly adjust cameras (i.e., exposure, white balance).	
1681.15	Demonstrate appropriate lens operation and framing.	

1681.16	Identify various live transmission methods.	
1681.17	Identify and maintain various recording and file management systems.	
1681.18	Determine microphone selection and application.	
1681.19	Identify and operate various audio devices in a recording environment.	

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1681.20	Demonstrate editing aesthetics (i.e., transitions, pacing of shots, background music selection).	
1681.21	Identify and manage various file formats.	
1681.22	Import, capture, and export media appropriately.	
1681.23	Describe procedures for preparing production for distribution.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1681.24	Identify and define various career paths in the video production/broadcasting field.	
1681.25	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1681.26	Cooperate professionally with clients, coworkers, and supervisors.	
1681.27	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: This course will provide students with the knowledge to perform, either in a live or mock setting, a radio broadcast. Areas of study include on-air news presentations, deejay presentations, radio production and management, and student organizations. Students will demonstrate knowledge and technical expertise in the preproduction and performance of a live 30-minute show. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to broadcasting occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1683.01	Demonstrate safe handling of lighting instruments.	
1683.02	Apply fundamentals of ladder safety.	
1683.03	Demonstrate knowledge of fire safety principles.	
1683.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1683.05	Identify and describe various communication delivery methods.	
1683.06	Select crew and cast talent for appropriate production requirements.	
1683.07	Demonstrate knowledge of various script formats, including storyboarding.	
1683.08	Demonstrate knowledge of concept development.	
1683.09	Create or prepare production schedule/timeline.	
1683.10	Define target audience, including demographics and ratings.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1683.11	Direct and produce a studio production.	
1683.12	Direct and produce a remote production.	
1683.13	Select appropriate music for production.	
1683.14	Identify various live transmission methods.	
1683.15	Identify and maintain various recording and file management systems.	

1683.16	Determine microphone selection and application.	
1683.17	Identify and operate various audio devices in a recording environment.	

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1683.18	Identify and describe proper editing techniques.	
1683.19	Identify and manage various file formats.	
1683.20	Import, capture, and export media appropriately.	
1683.21	Describe procedures for preparing production for distribution.	
1683.22	Identify and describe essential computer hardware for editing.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1683.23	Identify and define various career paths in the video production/broadcasting field.	
1683.24	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1683.25	Cooperate professionally with clients, coworkers, and supervisors.	
1683.26	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: This course is an introduction to the techniques, equipment, and applications used in Video Editing. Areas of study include the production process, ingestion, non-linear editing, final package distribution, and student organizations. Students will demonstrate technical expertise in non-linear video editing techniques. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to broadcasting occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1684.01	Demonstrate safe handling of lighting instruments.	
1684.02	Apply fundamentals of ladder safety.	
1684.03	Demonstrate knowledge of fire safety principles.	
1684.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1684.05	Define target audience, including demographics and ratings.	
1684.06	Create or prepare production schedule/timeline.	
1684.07	Identify various budget/financial issues.	
1684.08	Demonstrate knowledge of concept development.	
1684.09	Demonstrate knowledge of various script formats, including storyboarding.	
1684.10	Determine technical requirements and site survey/location scout.	
1684.11	Identify and describe various communication delivery methods.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1684.12	Prepare graphics appropriate to production.	
1684.13	Execute various lighting designs.	
1684.14	Select appropriate music for production.	

1684.15	Perform on-camera production skills.	
---------	--------------------------------------	--

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1684.16	Identify and describe digital video signals.	
1684.17	Describe procedures for preparing production for distribution.	
1684.18	Demonstrate editing aesthetics (i.e., transitions, pacing of shots, background music selection).	
1684.19	Identify and describe proper editing techniques.	
1684.20	Describe and apply motion graphics and video compositing (including CG, chromakey).	
1684.21	Identify and describe essential computer hardware for editing.	
1684.22	Evaluate the finished product with the client/audience.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1684.23	Identify and define various career paths in the video production/broadcasting field.	
1684.24	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1684.25	Cooperate professionally with clients, coworkers, and supervisors.	
1684.26	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: This course will provide students with the knowledge to perform, either in a live or mock setting, or a television broadcast. Areas of study include writing television news, conducting interviews, preproduction, production, and student organizations. Students will demonstrate knowledge and technical expertise in the use of television production equipment and applications. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to broadcasting occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1685.01	Demonstrate safe handling of lighting instruments.	
1685.02	Apply fundamentals of ladder safety.	
1685.03	Demonstrate knowledge of fire safety principles.	
1685.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1685.05	Define target audience, including demographics and ratings.	
1685.06	Create or prepare production schedule/timeline.	
1685.07	Identify various budget/financial issues.	
1685.08	Demonstrate knowledge of concept development.	
1685.09	Demonstrate knowledge of various script formats, including storyboarding.	
1685.10	Determine technical requirements and site survey/location scout.	
1685.11	Identify and describe various communication delivery methods.	
1685.12	Select crew and cast talent for appropriate production requirements.	
1685.13	Design and construct set and lighting.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1685.14	Prepare graphics appropriate to production.	
1685.15	Execute various lighting designs.	

1685.16	Direct and produce a studio production.	
1685.17	Direct and produce a remote production.	
1685.18	Collect, set up, and maintain props, set dressings, and scenery.	
1685.19	Select appropriate music for production.	
1685.20	Perform on-camera production skills.	
1685.21	Identify and select appropriate make-up and costumes.	
1685.22	Identify parts of cameras, accessories, and camera support systems.	
1685.23	Perform camera movements.	
1685.24	Properly adjust cameras (i.e., exposure, whitebalance).	
1685.25	Demonstrate appropriate lens operation and framing.	

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1685.26	Identify and describe digital video signals.	
1685.27	Describe procedures for preparing production for distribution.	
1685.28	Demonstrate editing aesthetics (i.e., transitions, pacing of shots, background music selection).	
1685.29	Identify and describe proper editing techniques.	
1685.30	Describe and apply motion graphics and video compositing (including CG, chromakey).	
1685.31	Identify and describe essential computer hardware for editing.	
1685.32	Evaluate the finished product with the client/audience.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1685.33	Identify and define various career paths in the video production/broadcasting field.	
1685.34	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1685.35	Cooperate professionally with clients, coworkers, and supervisors.	
1685.36	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: Students will use knowledge gained in the course to operate a broadcast station on the air. This includes problem solving and decision making as broadcasts sometimes contain fast paced, high pressure situations. Students will learn industry standards, federal regulations and personnel requirement. They will investigate the roles of the broadcasting station in society and how to meet the requirements while managing time, talent, crew and all the other aspects of a broadcasting environment.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1687.01	Demonstrate safe handling of lighting instruments.	
1687.02	Apply fundamentals of ladder safety.	
1687.03	Demonstrate knowledge of fire safety principles.	
1687.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1687.05	Define target audience, including demographics and ratings.	
1687.06	Identify various budget/financial issues.	
1687.07	Demonstrate knowledge of concept development.	
1687.08	Demonstrate knowledge of various script formats, including storyboarding.	
1687.09	Identify and describe various communication delivery methods.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1687.10	Collect, set up, and maintain props, set dressings, and scenery.	
1687.11	Select appropriate music for production.	
1687.12	Identify parts of cameras, accessories, and camera support systems.	
1687.13	Perform camera movements.	
1687.14	Properly adjust cameras (i.e., exposure, white balance).	
1687.15	Demonstrate appropriate lens operation and framing.	
1687.16	Identify various live transmission methods.	
1687.17	Identify and maintain various recording and file management systems.	
1687.18	Determine microphone selection and application.	
1687.19	Identify and operate various audio devices in a recording environment.	

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1687.20	Demonstrate editing aesthetics (i.e., transitions, pacing of shots, background music selection).	
1687.21	Identify and manage various file formats.	
1687.22	Import, capture, and export media appropriately.	
1687.23	Describe procedures for preparing production for distribution.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1687.24	Identify and define various career paths in the video production/broadcasting field.	
1687.25	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1687.26	Cooperate professionally with clients, coworkers, and supervisors.	
1687.27	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: Students will learn all aspects of live television production through hands-on application. This includes how to produce, direct, operate cameras, audio equipment and other technical aspects of products. On-air duties such as anchor, reporter, announcer will also be examined in this course. Students will gain knowledge of directing, newsroom, production and performance.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1689.01	Demonstrate safe handling of lighting instruments.	
1689.02	Apply fundamentals of ladder safety.	
1689.03	Demonstrate knowledge of fire safety principles.	
1689.04	Identify appropriate personal safety principles.	

Pre-Production		Complete
Content Skill Sets		Knowledge/ Performance
1689.05	Define target audience, including demographics and ratings.	
1689.06	Create or prepare production schedule/timeline.	
1689.07	Identify various budget/financial issues.	
1689.08	Demonstrate knowledge of concept development.	
1689.09	Demonstrate knowledge of various script formats, including storyboarding.	
1689.10	Determine technical requirements and site survey/location scout.	
1689.11	Identify and describe various communication delivery methods.	
1689.12	Select crew and cast talent for appropriate production requirements.	
1689.13	Design and construct set and lighting.	

Production		Complete
Content Skill Sets		Knowledge/ Performance
1689.14	Prepare graphics appropriate to production.	
1689.15	Execute various lighting designs.	
1689.16	Direct and produce a studio production.	
1689.17	Direct and produce a remote production.	
1689.18	Collect, set up, and maintain props, set dressings, and scenery.	
1689.19	Select appropriate music for production.	

1689.20	Perform on-camera production skills.	
1689.21	Identify and select appropriate make-up and costumes.	
1689.22	Identify parts of cameras, accessories, and camera support systems.	
1689.23	Perform camera movements.	
1689.24	Properly adjust cameras (i.e., exposure, white balance).	
1689.25	Demonstrate appropriate lens operation and framing.	

Post-Production		Complete
Content Skill Sets		Knowledge/ Performance
1689.26	Identify and describe digital video signals.	
1689.27	Describe procedures for preparing production for distribution.	
1689.28	Demonstrate editing aesthetics (i.e., transitions, pacing of shots, background music selection).	
1689.29	Identify and describe proper editing techniques.	
1689.30	Describe and apply motion graphics and video compositing (including CG, chromakey).	
1689.31	Identify and describe essential computer hardware for editing.	
1689.32	Evaluate the finished product with the client/audience.	

Ethics, Communications, and General Field Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1689.33	Identify and define various career paths in the video production/broadcasting field.	
1689.34	Exhibit knowledge of copyrights, contracts, ethics, and industry legalities.	
1689.35	Cooperate professionally with clients, coworkers, and supervisors.	
1689.36	Demonstrate knowledge of the business aspects of the video/broadcasting field.	

Course Description: This course is designed to introduce the student to the knowledge base and technical skills required to identify, configure and upgrade microcomputer hardware and peripherals. Content skill sets are based on testing objectives for the CompTIA A+ certification. Areas of study include personal computer components, laptop and portable devices, printers and scanners, networks, security and safety and environmental issues. Students will demonstrate knowledge and technical expertise in hardware troubleshooting and repair. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. This course is recommended as an Elective in the CISCO Networking Academies Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in computer repair and networking. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Mobile Devices		Complete
Content Skill Sets		Knowledge/ Performance
1692.01	Install and configure laptop hardware and components.	
1692.02	Install components within the display of a laptop.	
1692.03	Use appropriate laptop features.	
1692.04	Compare and contrast characteristics of various types of other mobile devices.	
1692.05	Connect and configure accessories and ports of other mobile devices.	
1692.06	Configure basic mobile device network connectivity and application support.	
1692.07	Use methods to perform mobile device synchronization.	

Networking		Complete
Content Skill Sets		Knowledge/ Performance
1692.08	Compare and contrast TCP and UDP ports, protocols, and their purposes.	
1692.09	Compare and contrast common networking hardware devices.	
1692.10	Install and configure a basic wired/wireless SOHO network.	
1692.11	Compare and contrast wireless networking protocols.	
1692.12	Summarize the properties and purposes of services provided by networked hosts.	
1692.13	Explain common network configuration concepts.	
1692.14	Compare and contrast Internet connection types, network types, and their features.	
1692.15	Use appropriate networking tools.	

Hardware		Complete
Content Skill Sets		Knowledge/ Performance
1692.16	Explain basic cable types, features, and their purposes.	
1692.17	Identify common connector types.	
1692.18	Install RAM types.	
1692.19	Select, install and configure storage devices.	
1692.20	Install and configure motherboards, CPUs, and add-on cards.	
1692.21	Explain the purposes and uses of various peripheral types.	
1692.22	Summarize power supply types and features.	
1692.23	Select and configure appropriate components for a custom PC configuration to meet customer specifications or needs.	
1692.24	Install and configure common devices.	
1692.25	Configure SOHO multifunction devices/printers and settings.	
1692.26	Install and maintain various print technologies.	

Virtualization and Cloud Computing		Complete
Content Skill Sets		Knowledge/ Performance
1692.27	Compare and contrast cloud computing concepts.	
1692.28	Set up and configure client-side virtualization.	

Hardware and Network Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1692.29	Use the best practice methodology to resolve problems.	
1692.30	Troubleshoot problems related to motherboards, RAM, CPUs, and power.	
1692.31	Troubleshoot hard drives and RAID arrays.	
1692.32	Troubleshoot video, projector, and display issues.	
1692.33	Troubleshoot common mobile device issues while adhering to the appropriate procedures.	
1692.34	Troubleshoot printers.	
1692.35	Troubleshoot common wired and wireless network problems.	

Course Description: This course introduces the student to the knowledge base and technical skills related to networking. Areas of study include media and topologies, protocols and standards, network implementation and network support. Content Skill Sets are based on testing objectives for the CompTIA Network+ certification. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Networking Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1694.01	Explain the purposes and uses of ports and protocols.	
1694.02	Explain devices, applications, protocols and services at their appropriate OSI layers.	
1694.03	Explain the concepts and characteristics of routing and switching.	
1694.04	Configure the appropriate IP addressing components.	
1694.05	Compare and contrast the characteristics of network topologies, types and technologies.	
1694.06	Implement the appropriate wireless technologies and configurations.	
1694.07	Summarize cloud concepts and their purposes.	
1694.08	Explain the functions of network services.	

Infrastructure		Complete
Content Skill Sets		Knowledge/ Performance
1694.09	Deploy the appropriate cabling solution.	
1694.10	Determine the appropriate placement of networking devices on a network and install/configure them.	
1694.11	Explain the purposes and use cases for advanced networking devices.	
1694.12	Explain the purposes of virtualization and network storage technologies.	
1694.13	Compare and contrast WAN technologies.	

Network Operations		Complete
Content Skill Sets		Knowledge/ Performance
1694.14	Use appropriate documentation and diagrams to manage the network.	
1694.15	Compare and contrast business continuity and disaster recovery concepts.	

1694.16	Explain common scanning, monitoring and patching processes and summarize their expected outputs.	
1694.17	Use remote access methods.	
1694.18	Identify policies and best practices.	

Network Security		Complete
Content Skill Sets		Knowledge/ Performance
1694.19	Summarize the purposes of physical security devices.	
1694.20	Explain authentication and access controls.	
1694.21	Secure a basic wireless network.	
1694.22	Summarize common networking attacks.	
1694.23	Implement network device hardening.	
1694.24	Explain common mitigation techniques and their purposes.	

Network Troubleshooting and Tools		Complete
Content Skill Sets		Knowledge/ Performance
1694.25	Explain the network troubleshooting methodology.	
1694.26	Use the appropriate tool.	
1694.27	Troubleshoot common wired connectivity and performance issues.	
1694.28	Troubleshoot common wireless connectivity and performance issues.	
1694.29	Troubleshoot common network service issues.	

Course Description: This course introduces the student to the knowledge base and technical skills related to working with network servers. Areas of study include server hardware, server installation, server configuration, server upgrade, proactive maintenance, security and environmental issues, troubleshooting, and disaster recovery. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. This course is recommended as an Elective in the Computer Systems Repair Technology Program of Study. Content Skill Sets are based on testing objectives for the Server+ Students will utilize problem- solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in computer repair and networking. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Server Architecture		Complete
Content Skill Sets		Knowledge/ Performance
1695.01	Explain the purpose and function of server form factors.	
1695.02	Install, configure and maintain server components.	
1695.03	Compare and contrast power and cooling components.	

Server Administration		Complete
Content Skill Sets		Knowledge/ Performance
1695.04	Install and configure server operating systems.	
1695.05	Compare and contrast server roles and requirements for each.	
1695.06	Use access and control methods to administer a server.	
1695.07	Perform proper server maintenance techniques.	
1695.08	Explain the importance of asset management and documentation.	
1695.09	Explain the purpose and operation of virtualization components.	

Storage		Complete
Content Skill Sets		Knowledge/ Performance
1695.10	Install and deploy primary storage devices based on given specifications and interfaces.	
1695.11	Configure RAID using best practices.	
1695.12	Summarize hardware and features of various storage technologies.	
1695.13	Calculate appropriate storage capacity and plan for future growth.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1695.14	Compare and contrast physical security methods and concepts.	
1695.15	Apply server hardening techniques.	
1695.16	Explain basic network security systems and protocols.	
1695.17	Implement logical access control methods based on company policy.	
1695.18	Implement data security methods and secure storage disposal techniques.	
1695.19	Implement proper environmental controls and techniques.	

Networking		Complete
Content Skill Sets		Knowledge/ Performance
1695.20	Configure servers to use IP addressing and network infrastructure services.	
1695.21	Compare and contrast various ports and protocols.	
1695.22	Install cables and implement proper cable management procedures.	

Disaster Recovery		Complete
Content Skill Sets		Knowledge/ Performance
1695.23	Explain the importance of disaster recovery principles.	
1695.24	Implement appropriate backup techniques.	

Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1695.25	Explain troubleshooting theory and methodologies.	
1695.26	Effectively troubleshoot hardware problems, selecting the appropriate tools and methods.	
1695.27	Effectively troubleshoot software problems, selecting the appropriate tools and methods.	
1695.28	Effectively diagnose network problems, selecting the appropriate tools and methods.	
1695.29	Effectively troubleshoot storage problems, selecting the appropriate tools and methods.	
1695.30	Effectively diagnose security issues, selecting the appropriate tools and methods.	

Course Description: This course introduces the students to the knowledge base and technical skills related to working with network security. Areas of study include Network Security, Compliance and Operational Security, Threats and Vulnerabilities, Application, Data and Host Security, Access Control and Identity Management and Cryptography. Courses are aligned with CompTia standards. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. This course is recommended as an Elective in the Computer Systems Repair Technology Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to 20 occupations in computer repair and networking. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Threats, Attacks, and Vulnerabilities

		Complete
Content Skill Sets		Knowledge/ Performance
1696.01	Compare and contrast different types of social engineering techniques.	
1696.02	Analyze potential indicators to determine the type of attack.	
1696.03	Analyze potential indicators associated with application attacks.	
1696.04	Analyze potential indicators associated with network attacks.	
1696.05	Explain different threat actors, vectors, and intelligence sources.	
1696.06	Explain the security concerns associated with various types of vulnerabilities.	
1696.07	Summarize the techniques used in security assessments.	
1696.08	Explain the techniques used in penetration testing.	

Architecture and Design

		Complete
Content Skill Sets		Knowledge/ Performance
1696.09	Explain the importance of security concepts in an enterprise environment.	
1696.10	Summarize virtualization and cloud computing concepts.	
1696.11	Summarize secure application development, deployment, and automation concepts.	
1696.12	Summarize authentication and authorization design concepts.	
1696.13	Implement cybersecurity resilience.	
1696.14	Explain the security implications of embedded and specialized systems.	
1696.15	Explain the importance of physical security controls.	
1696.16	Summarize the basics of cryptographic concepts.	

Implementation		Complete
Content Skill Sets		Knowledge/ Performance
1696.17	Implement secure protocols.	
1696.18	Implement host or application security solutions.	
1696.19	Implement secure network designs.	
1696.20	Install and configure wireless security settings.	
1696.21	Implement secure mobile solutions.	
1696.22	Apply cybersecurity solutions to the cloud.	
1696.23	Implement identity and account management controls.	
1696.24	Implement authentication and authorization solutions.	
1696.25	Implement public key infrastructure.	

Operations and Incident Response		Complete
Content Skill Sets		Knowledge/ Performance
1696.26	Use the appropriate tool to assess organizational security.	
1696.27	Summarize the importance of policies, processes, and procedures for incident response.	
1696.28	Utilize appropriate data sources to support an investigation.	
1696.29	Given an incident, apply mitigation techniques or controls to secure an environment.	
1696.30	Explain the key aspects of digital forensics.	

Governance, Risk, and Compliance		Complete
Content Skill Sets		Knowledge/ Performance
1696.31	Compare and contrast various types of controls.	
1696.32	Explain the importance of applicable regulations, standards, or frameworks that impact organizational security posture.	
1696.33	Explain the importance of policies to organizational security.	
1696.34	Summarize risk management processes and concepts.	
1696.35	Explain privacy and sensitive data concepts in relation to security.	

Course Description: This course introduces the student to the knowledge base and technical skills for the Linux operating system. Areas of study include installation, management, configuration, security, documentation and hardware. Students will demonstrate knowledge and technical expertise in basic installation, operation, security, troubleshooting and basic Linux hardware services for the Linux operating system on workstations and servers. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities.

Hardware and System Configuration		Complete
Content Skill Sets		Knowledge/ Performance
1698.01	Explain Linux boot process concepts.	
1698.02	Install, configure, and monitor kernel modules.	
1698.03	Configure and verify network connection parameters.	
1698.04	Manage storage in a Linux environment.	
1698.05	Compare and contrast cloud and virtualization concepts and technologies.	
1698.06	Configure localization options.	

Systems Operation and Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1698.07	Conduct software installations, configurations, updates, and removals.	
1698.08	Manage users and groups.	
1698.09	Create, modify, and redirect files.	
1698.10	Manage services.	
1698.11	Summarize and explain server roles.	
1698.12	Automate and schedule jobs.	
1698.13	Explain the use and operation of Linux devices.	
1698.14	Compare and contrast Linux graphical user interfaces.	

Security		Complete
Content Skill Sets		Knowledge/ Performance
1698.15	Apply or acquire the appropriate user and/or group permissions and ownership.	
1698.16	Configure and implement appropriate access and authentication methods.	
1698.17	Summarize security best practices in a Linux environment.	

1698.18	Implement logging services.	
1698.19	Implement and configure Linux firewalls.	
1698.20	Backup, restore, and compress files.	

Linux Troubleshooting and Diagnostics		Complete
Content Skill Sets		Knowledge/ Performance
1698.21	Analyze system properties and remediate accordingly.	
1698.22	Analyze system processes in order to optimize performance.	
1698.23	Analyze and troubleshoot user issues.	
1698.24	Analyze and troubleshoot application and hardware issues.	

Automation and Scripting		Complete
Content Skill Sets		Knowledge/ Performance
1698.25	Deploy and execute basic BASH scripts.	
1698.26	Carry out version control using Git.	
1698.27	Summarize orchestration processes and concepts.	

Course Description:

Email/Calendar Manager Software- Manage Settings and Processes		Complete
Content Skill Sets		Knowledge/ Performance
1700.01	Customize settings.	
1700.02	Configure mail settings.	
1700.03	Perform search operations.	
1700.04	Print and save information.	

Email/Calendar Manager Software- Manage Messages		Complete
Content Skill Sets		Knowledge/ Performance
1700.05	Create messages.	
1700.06	Insert message content.	
1700.07	Organize and manage messages.	

Email/Calendar Manager Software- Manage Schedules		Complete
Content Skill Sets		Knowledge/ Performance
1700.08	Create and manage calendars.	
1700.09	Create appointments, meetings, and events.	
1700.10	Organize and manage appointments, meetings, and events.	

Email/Calendar Manager Software- Manage Contacts and Tasks		Complete
Content Skill Sets		Knowledge/ Performance
1700.11	Create and manage contact records.	
1700.12	Create and manage contact groups.	
1700.13	Create and manage tasks.	

Presentation Software- Manage Presentations		Complete
Content Skill Sets		Knowledge/ Performance
1700.14	Modify slide masters, handout masters, and note masters.	
1700.15	Change presentation options and views.	
1700.16	Configure print settings for presentations.	
1700.17	Configure and present slide shows.	
1700.18	Prepare Presentations for collaboration.	

Presentation Software- Manage Slides		Complete
Content Skill Sets		Knowledge/ Performance
1700.19	Insert slides.	
1700.20	Modify slides.	
1700.21	Order and group slides.	

Presentation Software- Insert and Format Text, Shapes, and Images		Complete
Content Skill Sets		Knowledge/ Performance
1700.22	Format text.	
1700.23	Insert links.	
1700.24	Insert and format images.	
1700.25	Insert and format graphic elements.	
1700.26	Order and group objects on slides.	

Presentation Software- Insert Tables, Charts, SmartArt, 3D Models, and Media		Complete
Content Skill Sets		Knowledge/ Performance
1700.27	Insert and format tables.	
1700.28	Insert and modify charts.	
1700.29	Insert and format SmartArt graphics.	
1700.30	Insert and modify 3D models.	
1700.31	Insert and manage media.	

Presentation Software– Apply Transitions and Animations		Complete
Content Skill Sets		Knowledge/ Performance
1700.32	Apply and configure slide transitions.	
1700.33	Animate slide content.	
1700.34	Set timing for transitions.	

Word Processing– Manage Documents		Complete
Content Skill Sets		Knowledge/ Performance
1700.35	Navigate within documents.	
1700.36	Format documents.	
1700.37	Save and share documents.	
1700.38	Inspect documents for issues.	

Word Processing – Insert and Format Text, Paragraphs, and Sections		Complete
Content Skill Sets		Knowledge/ Performance
1700.39	Insert text and paragraphs.	
1700.40	Format text and paragraphs.	
1700.41	Create and configure document sections.	

Word Processing– Manage Tables and Lists		Complete
Content Skill Sets		Knowledge/ Performance
1700.42	Create tables.	
1700.43	Modify tables.	
1700.44	Create and modify lists.	

Word Processing– Create and Manage References		Complete
Content Skill Sets		Knowledge/ Performance
1700.45	Create and manage reference elements.	
1700.56	Create and manage reference tables.	

Word Processing – Insert and format Graphic elements		Complete
Content Skill Sets		Knowledge/ Performance
1700.57	Insert illustrations and text boxes.	
1700.58	Format illustrations and text boxes.	
1700.59	Add text to graphic elements.	
1700.60	Modify graphic elements.	

Word Processing– Manage Document Collaboration		Complete
Content Skill Sets		Knowledge/ Performance
1700.61	Add and manage comments.	
1700.62	Manage change tracking.	

Spreadsheets– Manage Worksheets and Workbooks		Complete
Content Skill Sets		Knowledge/ Performance
1700.63	Import data into workbooks.	
1700.64	Navigate within workbooks.	
1700.65	Format work sheets and workbooks.	
1700.66	Customize options and views.	
1700.67	Configure content for collaboration.	

Spreadsheets – Manage Data Cells and Ranges		Complete
Content Skill Sets		Knowledge/ Performance
1700.68	Manipulate data in worksheets.	
1700.69	Format cells and ranges.	
1700.70	Define and reference named ranges.	
1700.71	Summarize data visually.	

Spreadsheets – Manage Tables and Table Data		Complete
Content Skill Sets		Knowledge/ Performance
1700.72	Create and format tables.	
1700.73	Modify tables.	

1700.74	Filter and sort table data.	
---------	-----------------------------	--

Spreadsheets – Perform Operations by using Formulas and Functions		Complete
Content Skill Sets		Knowledge/ Performance
1700.75	Insert references.	
1700.76	Calculate and transform data.	
1700.77	Format and modify text.	

Spreadsheets - Manage Charts		Complete
Content Skill Sets		Knowledge/ Performance
1700.78	Create charts.	
1700.79	Modify charts.	
1700.80	Format charts.	

Course Description: This course introduces the student to the knowledge and technical skills for all courses in the Computer Systems and Hardware Support Program of Study. Areas of study include computer hardware, data representation, operating system, utility, productivity software, communications and networks, and the Internet. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in the IT industry. Safety instruction is integrated into all activities.

Computer Hardware		Complete
Content Skill Sets		Knowledge/ Performance
1705.01	Circuit boards, processors, chips, electronic equipment and computer hardware and software, including applications and programming.	
1705.02	The terminology and concepts related to computer hardware.	
1705.03	The various devices associated with a typical microcomputer system.	
1705.04	Classify computers on the basis of size, function and number of users.	
1705.05	Determine the steps of the information processing cycle.	
1705.06	Examine the functions of the components of the system unit.	
1705.07	Compare random-access and read-only memories.	
1705.08	Inspect commonly used input devices.	
1705.09	Inspect commonly used display devices.	
1705.10	Inspect commonly used printers.	
1705.11	Inspect commonly used storage devices.	
1705.12	Compare types of storage media.	
1705.13	Classify computers on the basis of size, function and number of users.	
1705.14	Illustrate the electronic representation of data.	
1705.15	Perform simple binary.	
1705.16	Examine how coding systems are used to represent text and numbers during processing.	

Operating Systems, Utility and Production Software		Complete
Content Skill Sets		Knowledge/ Performance
1705.17	Computer software.	
1705.18	Programs associated with a typical microcomputer system.	
1705.19	Identify the purpose and functions of an operating system.	
1705.20	Compare a variety of microcomputer operating systems.	

1705.21	Demonstrate basic OS operations.	
1705.22	Examine essential system utilities.	
1705.23	Examine a variety of productivity application programs and suites.	
1705.24	Laws, legal codes, court procedures, precedents, government regulations, executive orders, agency rules and the democratic political process.	
1705.25	Relevant equipment, policies, procedures and strategies to promote effective local, state, or national security operations for the protection of people, data, property and institutions.	
1705.26	Investigate methods of protecting a user's personal information.	
1705.27	Investigate methods of protecting a company's intellectual property rights and copyrights.	
1705.28	Examine software license agreements and distribution policies.	
1705.29	Examine software copyright infringement.	
1705.30	Examine plagiarism.	

Communications and Networks

Communications and Networks		Complete
Content Skill Sets		Knowledge/ Performance
1705.31	Network connection media and methods.	
1705.32	Examine the functions of various networking devices.	
1705.33	Compare the media and methods used in networking.	
1705.34	Compare different network classifications.	
1705.35	Compare different network architectures.	
1705.36	Compare different network topologies.	
1705.37	Compare different network standards.	
1705.38	Compare different types of Internet connections.	
1705.39	Compare different web browsers.	
1705.40	Compare search engines.	
1705.41	Locate information.	

Course Description: This course introduces the student to the knowledge base and technical skills for producing digital images for use in web sites and multimedia applications. Areas of study include digital imaging concepts, imaging hardware, imaging applications, and legal and ethical consideration. Students will demonstrate knowledge and technical expertise in creating, capturing, and altering digital images. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. This course is recommended as an Elective in the Computer Systems Repair Technology Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to occupations in information technology. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Digital Imaging		Complete
Content Skill Sets		Knowledge/ Performance
1706.01	Digital imaging terminology and concepts.	
1706.02	Differentiate between vector and bitmap images.	
1706.03	Examine factors that determine the quality of a digital image.	
1706.04	Examine the impact of image size, resolution and color depth on performance.	
1706.05	Differentiate between the common types of image file formats.	
1706.06	Examine the web-safe palette.	
1706.07	Hardware devices to capture and/or create images.	
1706.08	Compare common features of digital cameras.	
1706.09	Take pictures with a digital camera.	
1706.10	Transfer images to the computer for editing.	
1706.11	Compare common features of scanners.	
1706.12	Scan various types of documents and capture the results for editing.	
1706.13	Compare common features of digitizing tablets.	
1706.14	Create and capture images using a digitizing tablet.	

Imaging Software		Complete
Content Skill Sets		Knowledge/ Performance
1706.15	Digital imaging software.	
1706.16	Compare types of imaging software and scanning software programs.	
1706.17	Apply common editing and retouching techniques to digital photographs.	
1706.18	Use layers to create composite images.	
1706.19	Add type to an image.	

1706.20	Enhance images using special effects and filters.	
1706.21	Export images to formats supported by the web.	

Course Description: This course introduces the student to a variety of applications used for Workplace Productivity. Areas of study include file management and individual applications including word processing, spreadsheet, database management, presentations, and personal information management. Students will demonstrate knowledge and technical expertise in the efficient use of software and application integration. Students will explore a variety of career and certification opportunities. This course is recommended as an Elective in the Computer Systems Repair Technology Program of Study. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real-world learning opportunities and instruction related to occupations in information technology. Students are encouraged to become active members of the student organization, SkillsUSA. Safety instruction is integrated into all activities.

Access and navigate between digital environments		Complete
Content Skill Sets		Knowledge/ Performance
1709.01	Recognize operating system terms and concepts.	
1709.02	Explain basic functions of web browsers.	
1709.03	Explain processes and requirements for accessing digital environments.	
1709.04	Explain methods of navigating between digital environments.	

Identify digital devices and connections		Complete
Content Skill Sets		Knowledge/ Performance
1709.05	Identify input devices.	
1709.06	Identify output devices.	
1709.07	Identify cables, connectors, and connections.	

Explain fundamental software concepts		Complete
Content Skill Sets		Knowledge/ Performance
1709.08	Explain basic software application concepts.	
1709.09	Compare and contrast proprietary and open-source software.	
1709.10	Describe processes for installing software from online sources.	

Explain fundamental hardware concepts		Complete
Content Skill Sets		Knowledge/ Performance
1709.11	Describe concepts related to computing devices.	
1709.12	Describe concepts related to memory.	
1709.13	Describe concepts related to data storage.	

Explain fundamental networking concepts		Complete
Content Skill Sets		Knowledge/ Performance
1709.14	Describe network connectivity concepts.	
1709.15	Describe online connectivity concepts.	
1709.16	Compare and contrast network and connection types.	
1709.17	Describe networking infrastructure.	
1709.18	Identify whether a device is connected.	

Create and manage a digital identity		Complete
Content Skill Sets		Knowledge/ Performance
1709.19	Explain how to manage personal data online.	
1709.20	Explain how to manage personally identifiable information.	
1709.21	Explain how to maintain digital privacy and security.	

Cultivate, manage, and protect your digital reputation		Complete
Content Skill Sets		Knowledge/ Performance
1709.22	Define the information required to complete a given task.	
1709.23	Distinguish between relevant and irrelevant search results.	
1709.24	Collect and retain source reference information for search and research results.	
1709.25	Explain features that enable you to locate information in a file.	
1709.26	Explain features that enable you to locate information on a webpage.	

Use and refine criteria for online searches		Complete
Content Skill Sets		Knowledge/ Performance
1709.27	Insert and format tables.	

1709.28	Insert and modify charts.	
1709.29	Insert and format SmartArt graphics.	
1709.30	Insert and modify 3D models.	
1709.31	Insert and manage media.	

Course Description: This course will provide the knowledge and skills for working in the treatment room; basic facial practices; facial massage; hair removal; makeup; advanced topics and treatments as delineated by the West Virginia Board of Barbers and Cosmetologists. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers will provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists.

<https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-9. Minimum Curriculum for Aestheticians 9.1. A student shall complete a course of study consisting of a minimum of 600 clock hours divided as specified in Table 3-1E of this rule to become a licensed aesthetician. 9.2. An aesthetic student shall have at least 200 clock hours before working on the general public in a licensed school.

This course includes a minimum of 72 hours practical work.

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1714.01	Apply knowledge of facial procedures, hair removal, make-up services.	
1714.02	Demonstrate knowledge and application services.	

West Virginia Standards

General Aesthetics		Complete
Content Skill Sets		Knowledge/ Performance
1714.03	Demonstrate various methods of cleaning implements used in aesthetic practices.	
1714.04	Describe treatment settings for aesthetics practices.	
1714.05	Describe various products used in facial treatments.	
1714.06	Demonstrate basic facial procedures including facial massage.	

Course Description: This course provides knowledge and understanding of infection control specifically for nail technicians; general anatomy and physiology; skin structure and growth; nail structure and growth; nail diseases and disorders; basics of chemistry, nail product chemistry; and electricity as delineated by the WV Board of Barbers and Cosmetology. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-6. Minimum Curriculum for Manicurists 6.1. A student shall complete a course of study consisting of a minimum of 400 clock hours divided as specified in Table 3-1C of this rule to become a licensed manicurist. 6.2. A manicuring student shall have at least 150 clock hours before working on the general public in a licensed school.

This course includes a minimum of 80 hours practical work.

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1716.01	Identify scientific components of nails.	
1716.02	Exhibit basic knowledge of histology, anatomy, and physiology.	
1716.03	Describe electrical safety including UV and other electrotherapy techniques.	

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1716.04	Demonstrate knowledge and application of manicuring services, including natural and artificial nail services.	
1716.05	Demonstrate knowledge and application services.	

West Virginia Standards

Science of Nail Technology		Complete
Content Skill Sets		Knowledge/ Performance
1716.06	Describe the various disorders and diseases of the nails.	
1716.07	Recognize diseases that should not be treated in the salon.	

1716.08	Explain basic nail product chemistry such as how methacrylate nail enhancement chemistry works, the chemistry of UV gels, etc.	
---------	--	--

Basic Nail Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1716.09	List the steps in nail technology pre-service procedures.	
1716.10	Demonstrate safe procedures in use of tools for pedicuring including cleaning and disinfecting.	
1716.11	Exhibit the proper set up of the manicure table.	
1716.12	Perform the correct techniques for basic nail polish applications.	
1716.13	Demonstrate proper procedures in no-light gels.	

Course Description: This course provides the knowledge and skills to perform basic manicures and pedicures; electric filing; wraps; tips; paraffin wax treatments; monomer liquid and polymer powder nail enhancements; UV gels; and creative design as delineated by the WV Board of Barbers and Cosmetologists. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists.

<https://wvbbc.com/About-Us/Laws-Regulations>

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1717.01	Describe electrical safety including UV and other electrotherapy techniques.	

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1717.02	Demonstrate knowledge and application of manicuring services, including natural and artificial nail services.	
1717.03	Demonstrate knowledge and application services.	

West Virginia Standards

Art of Nail Technology		Complete
Content Skill Sets		Knowledge/ Performance
1717.04	Identify the appropriate nail implements used in pedicuring.	
1717.05	Demonstrate the procedures and precautions for nail services.	
1717.06	Apply correct procedures for a basic conditioning manicure.	
1717.07	Identify basic nail shapes.	
1717.08	Describe the correct technique for filing toenails.	
1717.09	Describe the proper technique for trimming toenails.	
1717.10	Demonstrate proper techniques for electric filing.	
1717.11	Explain the purposes of the necessary supplies for nail tips.	
1717.12	Identify the types of nail tips.	
1717.13	Demonstrate proper procedures and safety in nail tips application and removal.	

1717.14	Explain the benefits of silk, linen, fiberglass and synthetic wrap applications.	
1717.15	Demonstrate the procedures and precautions in fabric wrap applications.	
1717.16	Demonstrate maintenance, repair and removal of wraps.	
1717.17	Describe the chemistry of UV gels.	
1717.18	Describe the supplies used in UV gel application.	
1717.19	Demonstrate the proper procedures for maintaining UV gel services using forms over tips and on natural nails.	
1717.20	Describe the one- and two-color methods for applying UV gels.	
1717.21	Explain how to safely remove UV gels.	
1717.22	Explain the purpose of supplies in acrylic nail enhancement.	
1717.23	Demonstrate the use of creative nail art design products.	
1717.24	Demonstrate the use of monomer liquid and polymer powder nail enhancements.	
1717.25	Practice health and safety precautions involving application of nail primers.	
1717.26	Perform rebalance procedures and repairs.	
1717.27	Implement proper procedures for removal of acrylic nail enhancements.	
1717.28	Explain differences in traditional and odorless acrylic nail enhancement products.	

Course Description: This course will introduce students to computer-aided drafting using CAD software. Areas of study include the CAD interface, basic geometry, working aids, basic dimensioning, plotting, and student organizations. Students will demonstrate knowledge and technical expertise in the commands and features of the program. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts and teachers should provide each student with real world learning opportunities and instruction related to drafting, design and related engineering occupations. Safety instruction is integrated into all activities.

CAD Interface		Complete
Content Skill Sets		Knowledge/ Performance
1718.01	Components of the CAD software interface.	
1718.02	Examine the components of the CAD window and describe their functions.	
1718.03	Examine the CAD file management commands to manage files, libraries and directories.	
1718.04	Use the keyboard, menu, toolbar and shortcut menu to invoke CAD commands.	
1718.05	Examine the units of measure used by CAD.	
1718.06	Examine the Cartesian coordinate system.	

Basic Geometry		Complete
Content Skill Sets		Knowledge/ Performance
1718.07	Components of 2D geometry as they relate to drafting.	
1718.08	Draw 2D geometric shapes (e.g., lines, circles, arcs, ellipses, rectangles and regular polygons using the draw toolbar menu and aliases).	
1718.09	Demonstrate proper use of the modify commands (e.g., move, copy, offset, trim, extend, stretch, rotate, mirror, fillet and scale using the modify toolbar, menu, and aliases).	

Working Aids		Complete
Content Skill Sets		Knowledge/ Performance
1718.10	The working aids related to CAD.	
1718.11	Examine CAD's drawing aids including layering system, object properties, snap mode and object snaps.	
1718.12	Use CAD's workings aids to setup drawings, improve quality and accuracy of drawings.	

Basic Dimensioning**Complete****Content Skill Sets****Knowledge/
Performance**

1718.13	Basic dimensioning techniques using CAD.	
1718.14	Draw basic dimensions following standard drafting procedures using the dimension toolbar, menu, and aliases.	
1718.15	Create and edit text using single and multi-line text commands.	

Plot Drawings**Complete****Content Skill Sets****Knowledge/
Performance**

1718.16	Components and functions of a plotter/printer.	
1718.17	Examine the components and functions of a plotter/printer.	
1718.18	Plot and print drawings using CAD software.	

Course Description: This course provides knowledge and skills as delineated by the WV Board of Barbers and Cosmetologists for the provision of manicures, pedicures, massage, and facials. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-6. Minimum Curriculum for Manicurists 6.1. A student shall complete a course of study consisting of a minimum of 400 clock hours divided as specified in Table 3-1C of this rule to become a licensed manicurist. 6.2. A manicuring student shall have at least 150 clock hours before working on the general public in a licensed school.

This course includes a minimum of 115 hours practical work.

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1719.01	Demonstrate knowledge and application of manicuring services, including natural and artificial nail services.	
1719.02	Demonstrate knowledge and application services.	

West Virginia Standards

Advanced Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1719.03	Discuss topics of advanced manicuring and pedicuring.	
1719.04	Demonstrate the ability to perform proper foot massage.	
1719.05	Perform hand and arm massage movements associated with manicuring.	

Clinical Experience		Complete
Content Skill Sets		Knowledge/ Performance
1719.06	Comply with the required facility regulations.	
1719.07	Correctly and safely perform procedures under the supervision of an instructor or clinical preceptor.	
1719.08	Complete documentation required of clinical specialization accurately.	

1719.09	Participate in clinical specialty evaluation process.	
---------	---	--

Course Description: This course introduces students to the specialization of architectural drawing and design. Areas of study include architectural styles, floor plans, dimensioning and annotation, site and foundation plans, elevations and section layouts, and residential utilities. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Drawing Creation		Complete
Content Skill Sets		Knowledge/ Performance
1721.01	Create, insert, and modify notes and labels into drawings.	
1721.02	Create or insert symbols into drawings with legends.	
1721.03	Construct and modify drawing geometries.	

Drawing Views		Complete
Content Skill Sets		Knowledge/ Performance
1721.04	Summarize the applications of rendered views.	

3-D Modeling		Complete
Content Skill Sets		Knowledge/ Performance
1721.05	Generate and modify construction entities (e.g., planes, axis, points).	
1721.06	Create and constrain 3-D assemblies.	
1721.07	Produce alternative output (e.g., rapid prototype, CNC).	

Course Description: This course introduces the student to the knowledge base and technical skills for piping drafting. Areas of study include piping, joints and fittings, valves, and schematics and layouts. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to drafting, design, and related engineering occupations. Safety instruction is integrated into all activities.

Piping		Complete
Content Skill Sets		Knowledge/ Performance
1722.01	Types of piping and the purposes for which each is used.	
1722.02	Examine piping terminology and materials.	
1722.03	Examine the purpose for certain types of piping.	
1722.04	Draw piping jobs.	

Joints and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
1722.05	Common joints and fittings.	
1722.06	Examine common joints.	
1722.07	Examine common fittings.	

Valves		Complete
Content Skill Sets		Knowledge/ Performance
1722.08	Common valve type.	
1722.09	Examine common valve types.	
1722.10	Examine common valve type uses.	

Schematics and Layouts		Complete
Content Skill Sets		Knowledge/ Performance
1722.11	Piping schematics and isometric layouts.	
1722.12	Draw a piping schematic.	
1722.13	Draw an isometric piping layout.	
1722.14	Demonstrate dimensioning of piping systems.	

Course Description: This course will introduce students to the specialization of civil drafting and design. Areas of study include maps and construction and utilization of survey data. Emphasis will be placed on personal and professional ethics and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to drafting, design and related engineering occupations. Safety instruction is integrated into all activities.

Maps and Construction		Complete
Content Skill Sets		Knowledge/ Performance
1723.01	Design techniques, tools and principles involved in production of precision technical plans, blueprints, drawings and models.	
1723.02	Materials, methods, and the tools involved in the construction or repair of houses, buildings, or other structures such as highways and roads.	
1723.03	Examine common mapping concepts including earth directions, latitude, longitude and relationship to sea level.	
1723.04	Convert azimuth to bearings and reverse.	
1723.05	Plot traverses, contours and profiles.	
1723.06	Draw and/or plot land from legal descriptions.	

Application of Survey Data		Complete
Content Skill Sets		Knowledge/ Performance
1723.07	CAD software in order to create drawings from field notes.	
1723.08	Examine field surveying data and its applications to site/plot plan.	
1723.09	Create a model using surveying data.	

Course Description: This course introduces the student to the knowledge base and technical skills necessary for mechanical drafting. Areas of study include advanced dimensioning techniques, assembly drawings, threads and fasteners, gears and cams, welding, and basic solid modeling. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Drawing Creation		Complete
Content Skill Sets		Knowledge/ Performance
1725.01	Insert and modify appropriate dimensions into drawings.	
1725.02	Create, insert, and modify notes and labels into drawings.	
1725.03	Create or insert symbols into drawings with legends.	
1725.04	Construct and modify drawing geometries.	
1725.05	Construct and modify block geometries.	
1725.06	Construct and detail an assembly view.	
1725.07	Identify key components in a title block.	

Drawing Views		Complete
Content Skill Sets		Knowledge/ Performance
1725.08	Select and manipulate the correct orthographic views.	
1725.09	Describe the application of detail views.	
1725.10	Organize and generate exploded assemblies.	

3-D Modeling		Complete
Content Skill Sets		Knowledge/ Performance
1725.11	Create and constrain 3-D assemblies.	
1725.12	Produce alternative output (e.g., rapid prototype, CNC).	

Course Description: This course introduces the student to the knowledge base and technical skills for structural steel drafting. Areas of study include structural steel, high strength bolts, welding symbols and structural truss floor plans. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts and teachers should provide each student with real world learning opportunities and instruction related to drafting, design and related engineering occupations. Safety instruction is integrated into all activities.

Structural Steel		Complete
Content Skill Sets		Knowledge/ Performance
1726.01	A variety of structural steel characteristics.	
1726.02	Examine structural steel shapes.	
1726.03	Draw and label structural steel shapes.	

High Strength Bolts		Complete
Content Skill Sets		Knowledge/ Performance
1726.04	High strength bolts used in structural joints.	
1726.05	Examine high strength bolts.	
1726.06	Draw and label high strength bolts.	

Welding Symbols		Complete
Content Skill Sets		Knowledge/ Performance
1726.07	Welding symbols used in steel fabrication.	
1726.08	Examine welding symbols.	
1726.09	Draw a detail of a welded beam.	

Structural Floor Plans		Complete
Content Skill Sets		Knowledge/ Performance
1726.10	Structural floor plans.	
1726.11	Examine structural floor plans.	
1726.12	Draw and label a structural floor plan.	

Course Description: This course introduces the student to techniques used in advanced orthographic projection. Areas of study include sectioning, pictorial views, auxiliary views, patterns and developments, dimensioning, advanced 2D CAD techniques, and basic 3D modeling in CAD. Students will demonstrate knowledge and technical expertise in various fundamental drafting techniques. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Drawing Creation		Complete
Content Skill Sets		Knowledge/ Performance
1727.01	Locate points using the Cartesian Coordinate System.	
1727.02	Create single and multiple auxiliary views of surfaces and objects.	
1727.03	Construct schedules (e.g., Bill of Materials, parts list).	

Creating Parameters		Complete
Content Skill Sets		Knowledge/ Performance
1727.04	Set up text and fonts.	
1727.05	Create and modify dimensions styles.	
1727.06	Differentiate plot styles and scales.	
1727.07	Identify and interpret industry standards related to engineering drawings (e.g., ISO, ANSI, JIS).	

Drawing Views		Complete
Content Skill Sets		Knowledge/ Performance
1727.08	Identify various types of pictorial views.	
1727.09	Identify and interpret various section views.	
1727.10	Define and apply auxiliary views.	
1727.11	Summarize the applications of rendered views.	

3-D Modeling		Complete
Content Skill Sets		Knowledge/ Performance
1727.12	Create and detail 2-D drawings from a 3-D model.	
1727.13	Create and modify a feature geometry based 3-D model.	

Course Description: This course introduces the student to the knowledge base and technical skills for advanced computer aided drafting. Areas of study include paper space/model space, layout, and add-on software. Students will demonstrate knowledge and technical expertise in the use of CAD software. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts and teachers should provide each student with real world learning opportunities and instruction related to drafting, design, and engineering occupations. Safety instruction is integrated into all activities.

Paper and Model Space		Complete
Content Skill Sets		Knowledge/ Performance
1728.01	The use of paper space/model space as a plotting tool.	
1728.02	Examine the paper space/model space.	
1728.03	Set up a paper space border.	

Layout		Complete
Content Skill Sets		Knowledge/ Performance
1728.04	The creation of a working drawing from a 3D model for production.	
1728.05	Create 2D views of 3D models.	
1728.06	Set up views and create profiles.	
1728.07	Complete a project with dimensions and notes.	

Add-On Software		Complete
Content Skill Sets		Knowledge/ Performance
1728.08	Add-on software.	
1728.09	Examine add-on software options.	
1728.10	Select and complete a project with the instructor's approval.	

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the Drafting Program of Study. Areas of study include tools and equipment, measurement, basic drafting techniques, freehand technical sketching, orthographic projection, dimensioning, basic computer skills, and drawing techniques. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Computer Systems and File Management		Complete
Content Skill Sets		Knowledge/ Performance
1729.01	Hardware and operating systems.	
1729.02	File management and sharing.	

Print Reading		Complete
Content Skill Sets		Knowledge/ Performance
1729.03	Interpret Views in engineering drawings.	
1729.04	Interpret bilateral, unilateral, and limit dimensions.	
1729.05	Interpret drawings, pictures, and drafting symbols.	
1729.06	Interpret GD&T symbols.	
1729.07	Interpret hole dimensioning.	

Measuring		Complete
Content Skill Sets		Knowledge/ Performance
1729.08	Record and report precision measurements (e.g., micrometers, caliper, scale, laser).	
1729.09	Use reverse engineering principles to generate engineering drawings.	

Drawing Creation		Complete
Content Skill Sets		Knowledge/ Performance
1729.10	Determine and create appropriate drawing views and scales.	
1729.11	Organize required drawings and sheet coordination.	

1729.12	Assign and coordinate linetypes and levels.	
1729.13	Create, modify, and apply material properties (e.g., types volume, mass).	
1729.14	Importation and application of standard parts to 3-D assemblies.	

Course Description: This course will provide knowledge and skills for scalp care, shampooing and conditioning as delineated by the WV Board of Barbers and Cosmetologists such as: explaining the importance of pH in shampoo selection, role of surfactants in shampoo, selection of various types of shampoo and conditioners, proper scalp manipulation, shampooing and conditioning procedures. Students will utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 75 hours practical work.

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1730.01	Apply knowledge of hair care (e.g.,) shampoos, conditioners.	
1730.02	Demonstrate knowledge and application services.	

Chemical Services		Complete
Content Skill Sets		Knowledge/ Performance
1730.03	Apply knowledge and proficiency of hair coloring, including corrective coloring.	
1730.04	Apply knowledge and proficiency of hair lightening.	

West Virginia Standards

Cosmetology Chemicals		Complete
Content Skill Sets		Knowledge/ Performance
1730.05	Explain the importance of pH in shampoo selection.	
1730.06	Explain the role of surfactants in shampoo.	
1730.07	Perform proper scalp manipulations as part of shampoo service.	

1730.08	Identify the principles of color theory as related to hair color.	
1730.09	Explain the role of level and tone in formulating hair color.	
1730.10	Explain the chemical effects of basic colors on hair.	
1730.11	Explain the actions of hair lighteners.	
1730.12	Demonstrate application techniques for colors and lighteners.	
1730.13	Demonstrate application techniques in special effects in hair coloring.	

Course Description: This course provides information on the aspects of aesthetics science such as: infection control; general anatomy and physiology; basics of chemistry; basics of electricity and basics of nutrition as delineated by the WV Board of Barbers and Cosmetologist. Students will utilize problemsolving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers will provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-9. Minimum Curriculum for Aestheticians 9.1. A student shall complete a course of study consisting of a minimum of 600 clock hours divided as specified in Table 3-1E of this rule to become a licensed aesthetician. 9.2. An aesthetic student shall have at least 200 clock hours before working on the general public in a licensed school.

This course includes a minimum of 36 hours practical work.

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1731.01	Describe electrical safety including UV and other electrotherapy techniques.	

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1731.02	Demonstrate knowledge and application services.	

West Virginia Standards

Science of Aesthetics		Complete
Content Skill Sets		Knowledge/ Performance
1731.03	Apply the basics of chemistry to cosmetic skin care products.	
1731.04	Explain how various skin conditions react with specific products.	
1731.05	Define classifications of specific ingredients from product contents.	
1731.06	Explain the pH scale in relation to cosmetic and cosmeceutical products.	
1731.07	Review basics of electricity as it relates to aesthetic practices such as how the skin responds to electric current.	
1731.08	Describe the importance of nutrition as it relates to the promotion of growth and health.	

Course Description: This course will provide the student with knowledge and skills to be able to: apply nail tips, wraps and gels; apply facial make-up; and practice various methods of hair removal -- as delineated by the WV Board of Barbers and Cosmetologists. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-9. Minimum Curriculum for Aestheticians 9.1. A student shall complete a course of study consisting of a minimum of 600 clock hours divided as specified in Table 3-1E of this rule to become a licensed aesthetician. 9.2. An aesthetic student shall have at least 200 clock hours before working on the general public in a licensed school.

This course includes a minimum of 90 hours practical work.

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1732.01	Identify scientific components of skin.	
1732.02	Exhibit basic knowledge of histology, anatomy, and physiology.	
1732.03	Describe electrical safety including UV and other electrotherapy techniques.	

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1732.04	Apply knowledge of facial procedures, hair removal, make-up services.	
1732.05	Demonstrate knowledge and application services.	

West Virginia Standards

Skin Sciences		Complete
Content Skill Sets		Knowledge/ Performance
1732.06	Describe the structure of the skin.	
1732.07	Identify the composition of the skin.	
1732.08	Summarize the functions of the skin.	

1732.09	Review bacterium that causes various stages of diseases and its development.	
1732.10	Describe various skin types and conditions.	
1732.11	Demonstrate knowledge of contraindications and screening.	
1732.12	Explain which skin disorders should be referred to a physician.	
1732.13	Describe the factors that impact the aging process of skin.	
1732.14	Describe the impact that environmental factors have on the aging process of skin.	
1732.15	Describe procedures that accelerate skin growth.	
1732.16	Describe various products used in facial treatments including chemistry, ingredients and selection.	

Course Description: This course provides knowledge and skills for working with hair and scalp, scalp treatment, shampoo and rinse, facial shapes, and hair styles as delineated by the WV Board of Barbers and Cosmetologists. Students also gain the professional or skilled knowledge and skills necessary in beginning a career in hairstyling profession. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 115 hours practical work.

Hair Designing		Complete
Content Skill Sets		Knowledge/ Performance
1734.01	Apply knowledge and proficiency of various hair styling techniques, including base control (e.g., braiding, finger waving, pin curls).	
1734.02	Apply knowledge and proficiency of various thermal techniques, including hair pressing, blow-drying, and flat ironing.	
1734.03	Apply the five elements of hair design <i>(WV Only)</i> .	
1734.04	Apply the principles of hair design <i>(WV Only)</i> .	
1734.05	Articulate the influences of hair types on hair design <i>(WV Only)</i> .	
1734.06	Explain different facial shapes <i>(WV Only)</i> .	
1734.07	Demonstrate hairstyles that enhance facial features <i>(WV Only)</i> .	
1734.08	Demonstrate hairstyles that camouflage facial features <i>(WV Only)</i> .	
1734.09	Explain design considerations for men <i>(WV Only)</i> .	

West Virginia Standards

Hair Styling		Complete
Content Skill Sets		Knowledge/ Performance
1734.10	Demonstrate techniques of wet hair styling basics.	
1734.11	Demonstrate techniques of styling long hair.	

1734.12	Demonstrate mastery of specialty hairstyles including long hair and wedding designs, hair twisting and knotting, and trend styles (<i>WV Only</i>).	
---------	---	--

Course Description: This course will provide knowledge and skills for working with wigs, hair additions, braiding and extensions as delineated by the WV Board of Barbers and Cosmetologist. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 115 hours practical work.

Hair Designing		Complete
Content Skill Sets		Knowledge/ Performance
1735.01	Apply knowledge and proficiency of various hair styling techniques, including base control (e.g., braiding, finger waving, pin curls).	
1735.02	Apply understanding of hair enhancement methods and procedures (e.g. wigs, extensions, hair fusions).	

West Virginia Standards

Wig and Hair Additions		Complete
Content Skill Sets		Knowledge/ Performance
1735.03	Outline the elements of a client consultation for wig services.	
1735.04	Explain the difference between human hair and synthetic wigs.	
1735.05	Demonstrate wig measurement.	
1735.06	Demonstrate procedures for putting on a wig.	
1735.07	Explain various types of hair enhancements and their uses.	

Braiding and Extensions		Complete
Content Skill Sets		Knowledge/ Performance
1735.08	Explain the various methods of attaching extensions.	
1735.09	Perform a client consultation regarding hair braiding.	

1735.10	Explain preparation for braiding.	
1735.11	Demonstrate the procedures for the various types of braiding including invisible, rope and fishtail.	
1735.12	Demonstrate procedures for single braids with or without extensions.	
1735.13	Demonstrate procedures for cornrowing with and without extensions.	

Course Description: This course will provide the knowledge and skills for haircutting as delineated by the WV Board of Barbers and Cosmetologists. The program area provides individuals with the principles, practices, and concepts involved in haircutting. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 120 hours practical work.

Hair Designing		Complete
Content Skill Sets		Knowledge/ Performance
1736.01	Apply knowledge and proficiency of various hair cutting or texturizing techniques (male and female).	

West Virginia Standards

Hair Cutting		Complete
Content Skill Sets		Knowledge/ Performance
1736.02	Summarize the reference points on the head and their role in haircutting.	
1736.03	Interpret angles, elevations and guidelines.	
1736.04	Examine the factors involved in successful haircutting client consultations.	
1736.05	Demonstrate the safe and proper procedures in haircutting.	
1736.06	Demonstrate mastery of basic haircuts.	
1736.07	Demonstrate mastery of specialty haircuts.	
1736.08	Demonstrate effective station clean-up.	
1736.09	Demonstrate point-cutting, slithering and notch cutting to create texture within a haircut.	
1736.10	Demonstrate mastery of advanced hair shaping including the bob, the bi-level, the ponytail and asymmetrical cuts and razor, thinning and blending sheer techniques.	

Course Description: This Course provides knowledge and skills in the fundamental theory of professional development as delineated by the WV Board of Barbering and Cosmetologists such as: effective communication, human relations, government organizations, professional organizations and development, first aid and general infection control. The Students will utilize problem-solving techniques and participate in hands-on activities to develop understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

This is the foundational course that must be taken first in Pre-Cosmetology and Barbering.

Safety and Sanitation		Complete
Content Skill Sets		Knowledge/ Performance
1737.01	Apply techniques to ensure client safety and protection.	
1737.02	Identify and demonstrate the three levels of decontamination and disinfection.	
1737.03	Identify concepts of salon-related ecology and bacteriology.	
1737.04	Demonstrate appropriate first aid and workplace safety procedures.	
1737.05	Select and utilize appropriate Personal Protective Equipment (PPE) for specific tasks.	
1737.06	Display knowledge of SDS information and OSHA regulations.	

Salon-Related Business Skills		Complete
Content Skill Sets		Knowledge/ Performance
1737.07	Demonstrate knowledge of pay scales and compensation plans.	
1737.08	Distinguish types of salon ownership and licensures.	
1737.09	Display professional client interactions and sales techniques.	
1737.10	Complete and maintain appropriate client and salon records.	

West Virginia Standards

General Professional Information		Complete
Content Skill Sets		Knowledge/ Performance
1737.11	List principles that contribute to personal and professional success.	
1737.12	Create a mission statement.	

1737.13	Explain the concept off self-management.	
1737.14	Explain how to set short and long-term goals.	
1737.15	Discuss effective methods of time management.	
1737.16	List characteristics of a healthy positive attitude.	
1737.17	Investigate avenues for professional development.	
1737.18	Demonstrate understanding of ergonomically correct principles and behaviors.	

Course Description: This course provides information on the scientific aspects of cosmetology as delineated by the WV Board of Barbers and Cosmetologists such as: human anatomy; the basics of chemistry and electricity; infection control; and tools and equipment. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 25 hours practical work.

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1738.01	Identify scientific components of hair and scalp.	

West Virginia Standards

Cosmetology Science		Complete
Content Skill Sets		Knowledge/ Performance
1738.02	List types and classifications of bacteria.	
1738.03	Describe the structures of the hair root.	
1738.04	Illustrate the layers of the hair shaft.	
1738.05	Explain the factors considered in hair analysis.	
1738.06	Describe the process of hair growth.	
1738.07	Discuss the various types of hair loss.	
1738.08	Describe the treatment for hair loss.	
1738.09	Recognize common hair and scalp disorders that can be treated by Cosmetologists.	

Course Description: This course gives students the knowledge and skills of the aging process of skin, skin analysis and skin care products as delineated by the WV Board of Barbers and Cosmetologists. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers will provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-9. Minimum Curriculum for Aestheticians 9.1. A student shall complete a course of study consisting of a minimum of 600 clock hours divided as specified in Table 3-1E of this rule to become a licensed aesthetician. 9.2. An aesthetic student shall have at least 200 clock hours before working on the general public in a licensed school.

This course includes a minimum of 109 hours practical work.

Physical Services		Complete
Content Skill Sets		Knowledge/ Performance
1739.01	Apply knowledge of facial procedures, hair removal, make-up services.	
1739.02	Demonstrate knowledge and application services.	

West Virginia Standards

General Aesthetics II		Complete
Content Skill Sets		Knowledge/ Performance
1739.03	Describe the elements and methods for hair removal.	
1739.04	Demonstrate the use of various types of cosmetics.	
1739.05	Demonstrate appropriate application of color theory.	
1739.06	Demonstrate application and removal of artificial lashes.	
1739.07	Utilize carrier oil and aromatherapy appropriately into a service.	
1739.08	Describe the elements of a client consultation for hair removal.	
1739.09	Name conditions that contraindicate hair removal in the salon.	
1739.10	Describe methods of permanent hair removal.	
1739.11	Demonstrate procedures in temporary hair removal.	
1739.12	Discuss advanced topics and treatments.	
1739.13	Demonstrate application of basic makeup for various occasions.	

1739.14	Demonstrate basic corrective makeup procedures.	
1739.15	Demonstrate safety procedures used in makeup application.	

Course Description: This course will provide the student with information on electricity and chemical products used in cosmetology and the effects on the human anatomy as delineated by the WV Board of Barbers and Cosmetologists. The program area provides individuals with the principles, practices, and concepts involved in cosmetology. Students also gain the professional or skilled knowledge and concepts involved in cosmetology. Students also gain the professional or skilled knowledge and skills necessary in beginning a career in the cosmetology profession. Students will utilize problem solving concepts involved in cosmetology. Students also gain the professional or skilled knowledge and skills necessary in beginning a career in the cosmetology profession. Students will utilize problem solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 25 hours practical work.

Scientific Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1740.01	Exhibit basic knowledge of histology, anatomy, and physiology.	

West Virginia Standards

General Anatomy and Physiology		Complete
Content Skill Sets		Knowledge/ Performance
1740.02	Recognize terms associated with body systems.	
1740.03	Summarize the functions of the ten body systems.	
1740.04	Describe the structure and reproduction of cells.	
1740.05	Identify the types of tissue in the human body.	

Chemistry Basics		Complete
Content Skill Sets		Knowledge/ Performance

1740.06	Explain the difference between organic and inorganic chemistry.	
1740.07	Discuss the forms of matter, elements, compounds and mixtures.	
1740.08	Compare solutions, suspensions and emulsions.	
1740.09	Summarize the pH scale.	
1740.10	Describe oxidation.	
1740.11	Describe reduction (redox) reactions.	

Electricity Basics		Complete
Content Skill Sets		Knowledge/ Performance
1740.12	Explain the nature of electricity.	
1740.13	Summarize terms related to electricity.	
1740.14	Explain the electric modalities used in Cosmetology.	
1740.15	Utilize the principles of electric equipment safely.	
1740.16	Explain electromagnetic radiation.	
1740.17	Describe the types and benefits of light therapy.	

Course Description: This course introduces the student to the knowledge base and technical skills as they relate to the field of Diesel Equipment Technology. In the Diesel Engine Components class areas of study include basic engine components, primary functions, service, inspection, and assembly procedures. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1741.01	Demonstrate understanding of fire safety.	
1741.02	Demonstrate understanding of personal, environmental, and equipment safety.	

Shop Practices, Tools, and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1741.03	Perform precision measuring (e.g., micrometers).	
1741.04	Identify and select lines and fittings.	
1741.05	Identify, select, and use hand tools.	
1741.06	Identify, select, and use basic shop equipment.	
1741.07	Identify and select proper fasteners.	
1741.08	Assess technical information.	

Diesel Engines		Complete
Content Skill Sets		Knowledge/ Performance
1741.09	Display knowledge of diesel technology terminology.	
1741.10	Display understanding of exhaust and induction systems.	
1741.11	Identify components and functions of cooling systems.	
1741.12	Display understanding of engine electronics.	
1741.13	Identify components and functions of lubricating systems.	
1741.14	Identify components and functions of fuel systems.	
1741.15	Display knowledge of diesel engine component parts and diesel engine operation.	

Preventive Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1741.16	Perform troubleshooting and preventive maintenance on engine systems.	
1741.17	Perform troubleshooting and preventive maintenance on transmissions (i.e., manual, automatic).	
1741.18	Perform troubleshooting and preventive maintenance on cooling systems.	
1741.19	Perform troubleshooting and preventive maintenance on brake systems.	
1741.20	Perform troubleshooting and preventive maintenance on frame and chassis.	
1741.21	Perform troubleshooting and preventive maintenance on HVAC systems.	
1741.22	Perform troubleshooting and preventive maintenance through inspection of tire wear patterns.	
1741.23	Perform troubleshooting and preventive maintenance on clutches.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Diesel Equipment Technology Program of Study. Incorporated into this course are heavy-truck electrical theory, engine and truck wiring circuits, storage batteries and diesel electrical system testing. This course is recommended as an Elective in Diesel Equipment Technology.

Skillset Name		Complete
Content Skill Sets		Knowledge/ Performance
1742.01	Basic electrical theory.	
1742.02	Basic electrical system testing and equipment.	
1742.03	Truck wiring circuits.	
1742.04	Calculate voltage, current, and resistance values using Ohms's law.	
1742.05	Describe terms associated with electrical theory.	
1742.06	Demonstrate the proper use of a test light.	
1742.07	Test circuits using the proper function and range of a multimeter.	
1742.08	Locate open, shorted and grounded circuits.	
1742.09	Demonstrate the proper repair procedures for faulty wiring and connectors.	
1742.10	Construct and test basic circuits involving fuses, relays and solenoids.	
1742.11	Identify three basic circuits used in wiring systems.	

Storage Batteries		Complete
Content Skill Sets		Knowledge/ Performance
1742.12	The use of storage batteries.	
1742.13	Define terms associated with storage batteries.	
1742.14	Define specific gravity.	
1742.15	Explain the chemical make-up of battery electrolyte.	
1742.16	Analyze the effects of cold temperatures in relation to cold cranking amps.	
1742.17	Test batteries to determine the state of charge.	
1742.18	Charge and jump start batteries.	
1742.19	Explain multiple battery installations and wiring procedures to increase voltage or CCA.	
1742.20	Explain safety procedures associated with handling storage batteries.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Diesel Equipment Technology Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in diesel mechanics. This course is recommended as an Elective in Diesel Equipment Technology.

Skillset Name		Complete
Content Skill Sets		Knowledge/ Performance
1743.01	Diagnosing and preparing to test for engine problems.	
1743.02	Inspect an engine and fill out a checklist during normal operation.	
1743.03	Attach test instruments to equipment and read dials and gauges to diagnose malfunctions.	
1743.04	Locate and specify the causes of an engine knock.	
1743.05	Locate causes of an overheated engine.	
1743.06	Analyze four causes of smoky exhaust.	
1743.07	Demonstrate the procedure for emergency shutdown of a diesel engine.	

Troubleshooting		Complete
Content Skill Sets		Knowledge/ Performance
1743.08	Troubleshooting a diesel engine.	
1743.09	Inspect, test, and listen to defective equipment to diagnose malfunctions, using test instruments such as handheld computers, motor analyzers, chassis charts, and pressure gauges.	
1743.10	Diagnose the cause of a no-start condition.	
1743.11	Locate causes of an engine starting but not running.	
1743.12	Diagnose and repair a diesel engine to knock.	
1743.13	Locate and repair the cause of an overheating diesel engine.	
1743.14	Locate and repair the cause of a diesel engine's low power complaint.	
1743.15	Describe what causes a diesel engine to use too much oil.	
1743.16	Describe what causes of high and low oil pressure oil pressure.	

Tune-up and Adjustments		Complete
Content Skill Sets		Knowledge/ Performance
1743.17	Tune-up a diesel engine.	
1743.18	Tune-up a diesel engine to manufacture's specifications.	
1743.19	Inspect, operate, and test completed products to verify functioning machine capabilities.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in diesel electronic engine controls. Areas of study include electronic control modules, electronic fuel injection, and electronic control test equipment. Emphasis will be placed on career exploration, job-seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1744.01	Demonstrate understanding of fire safety.	
1744.02	Demonstrate understanding of personal, environmental, and equipment safety.	

Shop Practices, Tools, and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1744.03	Perform precision measuring (e.g., micrometers).	
1744.04	Identify and select lines and fittings.	
1744.05	Identify, select, and use hand tools.	
1744.06	Identify, select, and use basic shop equipment.	
1744.07	Identify and select proper fasteners.	
1744.08	Assess technical information.	

Diesel Engines		Complete
Content Skill Sets		Knowledge/ Performance
1744.09	Display knowledge of diesel technology terminology.	
1744.10	Display understanding of exhaust and induction systems.	
1744.11	Identify components and functions of cooling systems.	
1744.12	Display understanding of engine electronics.	
1744.13	Identify components and functions of lubricating systems.	
1744.14	Identify components and functions of fuel systems.	
1744.15	Display knowledge of diesel engine component parts and diesel engine operation.	

Electrical and Electronic Systems

Electrical and Electronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1744.16	Apply an understanding of basic electrical principles.	
1744.17	Demonstrate knowledge of electrical schematics.	
1744.18	Service and inspect batteries.	
1744.19	Diagnose and repair starting systems.	
1744.20	Diagnose and repair lighting systems.	
1744.21	Diagnose and repair charging systems.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Diesel Equipment Technology Program of Study. Incorporated into this course include engine system maintenance, under hood and cab maintenance, electrical/electronic systems, frame and chassis maintenance. This course is recommended as an Elective in Diesel Equipment Technology.

Engine System Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1745.01	Maintenance of the engine.	
1745.02	Examine engine components.	
1745.03	Examine engine operation.	
1745.04	Inspect air induction system and replace filters.	
1745.05	Inspect cooling system, check and fill fluid levels, and replace filter as per maintenance schedule.	
1745.06	Check and fill all fluids and replace filters as per maintenance schedule.	

Hood and Cab Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1745.07	Hood and cab maintenance.	
1745.08	Inspect instruments and controls.	
1745.09	Inspect safety equipment.	
1745.10	Inspect hardware.	
1745.11	Inspect heating and AC system.	

Electrical/Electronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1745.12	Electrical/electronic systems.	
1745.13	Inspect battery, starting system, and cable connections.	
1745.14	Inspect charging system.	
1745.15	Inspect lighting system.	

Frame and Chassis Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1745.16	Frame and chassis maintenance.	
1745.17	Inspect air brake system for proper adjustment and operation.	
1745.18	Inspect drive train.	
1745.19	Inspect steering and suspension.	
1745.20	Inspect tires and wheels.	
1745.21	Inspect frame and fifth wheel.	
1745.22	Check and fill all fluid levels and lubricate steering, suspension, and drivelines.	

Course Description: This course introduces the student to the knowledge base and technical skills as they relate to Diesel Support Systems. In the Diesel Support Systems class areas of study include areas such as lubricating and cooling systems, air intake and exhaust systems, starting and charging systems, engine retarders, fuel systems, and governor operation. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1747.01	Demonstrate understanding of fire safety.	
1747.02	Demonstrate understanding of personal, environmental, and equipment safety.	

Shop Practices, Tools, and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1747.03	Perform precision measuring (e.g., micrometers).	
1747.04	Identify and select lines and fittings.	
1747.05	Identify, select, and use hand tools.	
1747.06	Identify, select, and use basic shop equipment.	
1747.07	Identify and select proper fasteners.	
1747.08	Assess technical information.	

Diesel Engines		Complete
Content Skill Sets		Knowledge/ Performance
1747.09	Display knowledge of diesel technology terminology.	
1747.10	Display understanding of exhaust and induction systems.	
1747.11	Identify components and functions of cooling systems.	
1747.12	Display understanding of engine electronics.	
1747.13	Identify components and functions of lubricating systems.	
1747.14	Identify components and functions of fuel systems.	
1747.15	Display knowledge of diesel engine component parts and diesel engine operation.	

Suspension and Steering		Complete
Content Skill Sets		Knowledge/ Performance
1747.16	Identify, maintain, and inspect TPMS and wheels.	
1747.17	Identify and repair chassis components.	
1747.18	Identify, maintain, and repair power steering systems.	
1747.19	Identify, maintain, and repair steering axle components.	
1747.20	Identify, maintain, and repair suspension types (i.e., front, rear).	
1747.21	Maintain proper vehicle alignment.	

Drivetrains		Complete
Content Skill Sets		Knowledge/ Performance
1747.22	Demonstrate understanding of the types of clutches.	
1747.23	Demonstrate understanding of transmissions (e.g., manual, automatic).	
1747.24	Install and replace U-joints and interpret drive line angles.	
1747.25	Diagnose and display an understanding of differentials functionality, including interaxles.	

Preventive Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1747.26	Perform troubleshooting and preventive maintenance on engine systems.	
1747.27	Perform troubleshooting and preventive maintenance on transmissions (e.g., manual, automatic)	
1747.28	Perform troubleshooting and preventive maintenance on cooling systems.	
1747.29	Perform troubleshooting and preventive maintenance on brake systems.	
1747.30	Perform troubleshooting and preventive maintenance on frame and chassis.	
1747.31	Perform troubleshooting and preventive maintenance on HVAC systems.	
1747.32	Perform troubleshooting and preventive maintenance through inspection of tire wear patterns.	
1747.33	Perform troubleshooting and preventive maintenance on clutches.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Diesel Equipment Technology Program of Study. Incorporated into this course include engine system maintenance, under hood and cab maintenance, electrical/electronic systems, frame and chassis maintenance. This course is recommended as an Elective in Diesel Equipment Technology.

Transmissions, Clutches, and Differentials		Complete
Content Skill Sets		Knowledge/ Performance
1745.01	Transmissions, clutches, and differentials.	
1745.02	Remove and replace a manual transmission assembly.	
1745.03	Remove, inspect, and install clutch, pressure plate and release bearing.	
1745.04	Remove, inspect, and install rear differential carrier assembly.	
1745.05	Adjust pinion depth and ring gear backlash.	

Steering, Suspension, Tires, Rims, and Wheels		Complete
Content Skill Sets		Knowledge/ Performance
1745.06	Steering, suspension, tires, rims, and wheels.	
1745.07	Lubricate steering and suspension components.	
1745.08	Inspect steering linkage, u-joints, and tie rod ends.	
1745.09	Diagnose and correct steering and suspension problems.	
1745.10	Adjust toe-in to manufacturers' specifications.	
1745.11	Remove, inspect, replace, lubricate and adjust wheel bearings.	
1745.12	Inspect tires, rims and wheels for defects.	
1745.13	Classify types of tires, rims and wheels.	
1745.14	Install tire/wheel assemblies.	

Air Brakes Systems

Air Brakes Systems		Complete
Content Skill Sets		Knowledge/ Performance
1745.15	Air brake systems.	
1745.16	Inspect brake lines, hoses, and air tanks for damage or leaks.	
1745.17	Remove and replace brake shoes, inspect hardware and adjust brakes.	
1745.18	Measure drums/rotors for wear.	
1745.19	Inspect, remove and replace brake chamber assembly.	
1745.20	Cage and uncage a spring brake chamber.	

Course Description: This course will provide knowledge and skills for working with chemical texture services and hair coloring as delineated by the WV Board of Barbers and Cosmetologist such as: factors in hair analysis for chemical texture services, types of permanent waving, basic wrapping procedures, difference between neutralizers and relaxers, color theory and techniques. Students are encouraged to become active members of a student organization. Teachers should provide each student with real world learning opportunities and instruction related to possible occupations. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This program of study is aligned to meet the requirements set forth by the West Virginia State Board of Barbers and Cosmetologists. <https://wvbbc.com/About-Us/Laws-Regulations>

§ 3-1-10. Minimum Curriculum for Hair Stylist 10.1. A student shall complete a course of study consisting of a minimum of 1,000 clock hours divided as specified in Table 3-1F of this rule to become a licensed hair stylist. 10.2. A hair stylist student shall have at least 250 clock hours before working on the general public in a licensed school.

This course includes a minimum of 75 hours practical work.

Chemical Services		Complete
Content Skill Sets		Knowledge/ Performance
1750.01	Apply knowledge and proficiency of chemical hair relaxing, permanent waving, and restructuring.	

Hair Designing		Complete
Content Skill Sets		Knowledge/ Performance
1750.02	Apply knowledge and proficiency of various hair cutting or texturizing techniques (male and female).	

West Virginia Standards

Chemical Texture Services		Complete
Content Skill Sets		Knowledge/ Performance
1750.03	Explain factors in hair analysis for chemical texture services.	
1750.04	Explain types of permanent waving.	
1750.05	Explain physical and chemical actions that occur in permanent waving.	
1750.06	Demonstrate basic wrapping procedures in permanent waving.	
1750.07	Explain the difference between neutralizers and relaxers.	
1750.08	Explain the procedures for a curl reforming service.	

Course Description: This course introduces the student to the knowledge base and technical skills as they relate to the field of Fundamentals of Diesel Equipment Technology. In the Fundamentals of Diesel Equipment Technology class areas of study include personal and shop safety, career opportunities in the diesel technology industry, the proper use of hand and power tools, basic oxyacetylene cutting, electric welding, and basic shop etiquette. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1751.01	Demonstrate understanding of fire safety.	
1751.02	Demonstrate understanding of personal, environmental, and equipment safety.	

Shop Practices, Tools, and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1751.03	Perform precision measuring (e.g., micrometers).	
1751.04	Identify and select lines and fittings.	
1751.05	Identify, select, and use hand tools.	
1751.06	Identify, select, and use basic shop equipment.	
1751.07	Identify and select proper fasteners.	
1751.08	Assess technical information.	

Diesel Engines		Complete
Content Skill Sets		Knowledge/ Performance
1751.09	Display knowledge of diesel technology terminology.	
1751.10	Display understanding of exhaust and induction systems.	
1751.11	Identify components and functions of cooling systems.	
1751.12	Display understanding of engine electronics.	
1751.13	Identify components and functions of lubricating systems.	
1751.14	Identify components and functions of fuel systems.	
1751.15	Display knowledge of diesel engine component parts and diesel engine operation.	

Suspension and Steering		Complete
Content Skill Sets		Knowledge/ Performance
1751.16	Identify, maintain, and inspect TPMS and wheels.	
1751.17	Identify and repair chassis components.	
1751.18	Identify, maintain, and repair power steering systems.	
1751.19	Identify, maintain, and repair steering axle components.	
1751.20	Identify, maintain, and repair suspension types (i.e., front, rear).	
1751.21	Maintain proper vehicle alignment.	

Brakes		Complete
Content Skill Sets		Knowledge/ Performance
1751.22	Identify, inspect, and repair hydraulic foundation brake system components and functions.	
1751.23	Identify and inspect ABS, ATC, and VSS.	
1751.24	Identify, inspect, and repair air foundation brake system components and functions.	
1751.25	Identify and inspect supply system components.	
1751.26	Identify, inspect, and repair air system components.	

Electrical and Electronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1751.27	Apply an understanding of basic electrical principles.	
1751.28	Demonstrate knowledge of electrical schematics.	
1751.29	Service and inspect batteries.	
1751.30	Diagnose and repair starting systems.	
1751.31	Diagnose and repair lighting systems.	
1751.32	Diagnose and repair charging systems.	

Drivetrains		Complete
Content Skill Sets		Knowledge/ Performance
1751.33	Demonstrate understanding of the types of clutches.	
1751.34	Demonstrate understanding of transmissions (e.g., manual, automatic).	
1751.35	Install and replace U-joints and interpret drive line angles.	
1751.36	Diagnose and display an understanding of differentials functionality, including interaxles.	

Preventive Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1751.37	Perform troubleshooting and preventive maintenance on engine systems.	
1751.38	Perform troubleshooting and preventive maintenance on transmissions (e.g., manual, automatic)	
1751.39	Perform troubleshooting and preventive maintenance on cooling systems.	
1751.40	Perform troubleshooting and preventive maintenance on brake systems.	
1751.41	Perform troubleshooting and preventive maintenance on frame and chassis.	
1751.42	Perform troubleshooting and preventive maintenance on HVAC systems.	
1751.43	Perform troubleshooting and preventive maintenance through inspection of tire wear patterns.	
1751.44	Perform troubleshooting and preventive maintenance on clutches.	

Course Description: This course introduces the student to the knowledge base and technical skills of the HVAC industry. HVAC I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets related to the fundamentals of HVAC such as Introduction to HVAC; and Trade Mathematics. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

OSHA Guidelines and General Safety		Complete
Content Skill Sets		Knowledge/ Performance
1752.01	Apply personal and environmental Safety procedures, including personal protective equipment (PPE).	
1752.02	Demonstrate understanding of Fire Protection equipment and procedures.	
1752.03	Demonstrate knowledge of Electrical Safety procedures.	
1752.04	Demonstrate knowledge of HVAC-specific Safety procedures.	

Related Math, Building Science, Blueprints, and Tools		Complete
Content Skill Sets		Knowledge/ Performance
1752.05	Demonstrate understanding of modes of heat transfer and British Thermal Unit (BTU).	
1752.06	Measure with a ruler, correctly identify fractions.	
1752.07	Calculate GPM, CFM, and CFM per ton.	
1752.08	Understand properties of air.	
1752.09	Accurately interpret Blueprints and Electrical diagrams.	
1752.10	Identify, use, and maintain hand and power tools.	

Course Description: HVAC II will continue to build student skill sets in areas such as Copper and Plastic Piping Practices; Soldering and Brazing; Ferrous Metal Piping Practices; Basic Electricity; Introduction to Cooling; Introduction to Heating; and Air Distribution Systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Electricity		Complete
Content Skill Sets		Knowledge/ Performance
1753.01	Demonstrate understanding of basic electrical theory and codes.	
1753.02	Exhibit knowledge of series and parallel circuits.	

Pipe Fitting, Soldering, and Brazing		Complete
Content Skill Sets		Knowledge/ Performance
1753.03	Solder and /or braze, and leak test tubing and fittings.	
1753.04	Set up and operate torch and equipment.	
1753.05	Properly use various pipe and tubing types and fittings.	

Warm Air Systems		Complete
Content Skill Sets		Knowledge/ Performance
1753.06	Demonstrate knowledge and understanding of sequence of operation.	
1753.07	Properly set up and adjust warm air equipment.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
1753.08	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
1753.09	Benefits of Apprenticeship.	

1753.11	Apprenticeship Components and Models.	
1753.12	Businesses and Partners.	
1753.13	Common Apprenticeship Myths.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
1753.14	Modern Apprenticeship Programs.	
1753.15	Support of Apprenticeship Programs Today.	

Course Description: HVAC III will continue to build student skill sets in areas of Commercial Airside Systems; Chimneys, Vents, and Flues; Introduction to the Hydronic Systems; Air Quality Equipment; Leak Detection, Evacuation, Recovery, and Charging; Alternating Current; Basic Electronics; and Introduction to Control Circuit Troubleshooting. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real-world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Electricity		Complete
Content Skill Sets		Knowledge/ Performance
1754.01	Troubleshoot, service, and repair various electrical circuits and components (thermostats, transformers, fuses, relays, etc.).	
1754.02	Troubleshoot, service, and repair various motors and motor controls.	

Warm Air Systems		Complete
Content Skill Sets		Knowledge/ Performance
1754.03	Demonstrate knowledge and understanding of sequence of operation.	
1754.04	Properly set up and adjust warm air equipment.	

Hydronic Systems		Complete
Content Skill Sets		Knowledge/ Performance
1754.05	Service and repair hydronic systems and components, including zone valves.	
1754.06	Troubleshoot hydronic operating pressures, water flow, and temperatures.	

Air Conditioning- Residential		Complete
Content Skill Sets		Knowledge/ Performance
1754.07	Identify refrigerants by pressure/temperature relationship and select appropriate refrigerants and oils.	
1754.08	Troubleshoot system components and metering devices.	
1754.09	Understand how to recover, pressure-test, evacuate, and charge an electrical system, according to the EPA 608 Clean Air Act.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
1754.10	Simulated Workplace Manual.	

Course Description: HVAC IV will continue to build student skill sets in areas of Troubleshooting Gas Heating; Troubleshooting Cooling; Heat Pumps; Basic Installation and Maintenance Practices; Sheet Metal Duct Systems; and Fiberglass and Flexible Duct Systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Warm Air Systems		Complete
Content Skill Sets		Knowledge/ Performance
1755.01	Install and size flues properly adhering to appropriate gas codes.	
1755.02	Perform preventive maintenance procedures, including combustion analysis and calculating efficiency.	

Heat Pumps, Electric Heat		Complete
Content Skill Sets		Knowledge/ Performance
1755.03	Troubleshoot and test proper operation of heat pumps, reversing valve, defrost controls, etc.	
1755.04	Perform preventive maintenance procedures for heat pumps, including calculating system efficiency.	

Refrigeration		Complete
Content Skill Sets		Knowledge/ Performance
1755.05	Troubleshoot refrigerant components using proper testing procedures.	
1755.06	Describe various refrigerant components using proper testing procedures.	
1755.07	Service and repair defrost system controls and components.	

Airflow and Ductwork		Complete
Content Skill Sets		Knowledge/ Performance
1755.08	Maintain appropriate indoor air quality equipment (air cleaners, humidification, etc.).	
1755.09	Measure temperature change, calculate CFM, and perform other system operation measurements.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance

1755.10	Unions working with Contractors in Construction Trades.	
1755.11	Construction Trade Unions in West Virginia with Apprenticeship Programs.	
1755.12	Apprenticeship opportunities in Construction Trades.	
1755.13	Applying for Apprenticeship in the Construction Trades.	
1755.14	Pre-Job Training.	
1755.15	Working on the Jobsite.	
1755.16	Working with your Supervisor and Others.	
1755.17	Harassment and Discrimination.	

Are You Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1755.18	Qualities of a Successful Apprentice.	
1755.19	Interviewing for Apprenticeships in Construction.	
1755.20	Interviewing tips for Construction Apprenticeships.	
1755.21	Common Interview Questions.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Electrical Trades industry. Electrical Trades I begin with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets related to the fundamentals of Electricity such as Orientation to the Electrical Trade; and Electrical Safety. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Introduction to the Electrical Construction Technology Career		Complete
Content Skill Sets		Knowledge/ Performance
1756.01	Identify various electrical construction technology positions and responsibilities.	
1756.02	Identify career-related professional organizations and their purpose.	

OSHA Regulations and Electrical Safety Practices		Complete
Content Skill Sets		Knowledge/ Performance
1756.03	Identify proper use of personal protective equipment (PPEs) according to NFPA 70E standards.	
1756.04	Explain the purpose of OSHA.	
1756.05	Identify procedures for fire, ladder, and environmental safety according to OSHA standards (including lock-out/tag-out).	

Identification and Selection of Tools, Materials, and Components		Complete
Content Skill Sets		Knowledge/ Performance
1756.06	Identify and correctly use hand and power tools.	
1756.07	Identify and select proper conductor cable type.	
1756.08	Identify the function and purpose of various specialty equipment, including Ground Fault Circuit Interrupter (GFCI), Arc-Fault Circuit Interrupter (AFCI), Tamper Resistant, and Transient Voltage Surge Suppressor (TVSS).	
1756.09	Identify commonly used listed and labeled equipment.	

AC Theory, Magnetic Theory, and DC Theory		Complete
Content Skill Sets		Knowledge/ Performance
1756.10	Identify characteristics of AC circuits.	

1756.11	Explain capacitance, inductance, impedance, current, voltage, and resistance.	
1756.12	Calculate power consumption, dissipation, and loss.	
1756.13	Demonstrate principles of magnetic theory.	
1756.14	Identify materials as insulators, conductors, and semi-conductors.	
1756.15	Identify characteristics and components of DC circuits.	

Circuit Theorems and Conversions		Complete
Content Skill Sets		Knowledge/ Performance
1756.16	Identify and apply various circuit theorems, including Ohm's Law, Kirchoff's Law, Watt's Law, and Electron Theory.	
1756.17	Identify and apply various mathematical conversions, including scientific, engineering and metric notations/conversions.	

Course Description: Electrical Trades II will continue to build student skill sets in areas such as Introduction to Electrical Circuits; Electrical Theory; Introduction to the National Electrical Code ®; Device Boxes; Hand Bending; Raceways and Fittings; Conductors and Cables; Basic Electrical Construction Drawings; Residential Electrical Services; and Electrical Test Equipment. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Identification and Selection of Tools, Materials, and Components		Complete
Content Skill Sets		Knowledge/ Performance
1757.01	Identify and correctly use hand and power tools.	
1757.02	Identify and select proper conductor cable type.	
1757.03	Identify and select proper conduit, boxes, and fittings.	
1757.04	Identify commonly used listed and labeled equipment.	

National Electrical Code (NEC)		Complete
Content Skill Sets		Knowledge/ Performance
1757.05	Explain NEC and how it is organized.	
1757.06	Explain procedures involved in NEC wiring methods, materials, and protection regulations.	
1757.07	Identify basic service entrance requirements.	
1757.08	Properly apply NEC tables and charts.	
1757.09	Describe proper bonding and grounding methods.	

Wiring, Circuits, and Installation		Complete
Content Skill Sets		Knowledge/ Performance
1757.10	Select appropriate wiring for specific installations (residential and Commercial).	

Meters, Measurements, Testing		Complete
Content Skill Sets		Knowledge/ Performance
1757.11	Identify characteristics, uses, and connections of meters and measuring devices.	
1757.12	Identify meter safety procedures.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
1757.13	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
1757.14	Benefits of Apprenticeship.	
1757.15	Apprenticeship Components and Models.	
1757.16	Businesses and Partners.	
1757.17	Common Apprenticeship Myths.	

Course Description: Electrical Trades III will continue to build student skill sets in areas of Alternating Current; Motors: Theory and Application; Electric Lighting; and Conduit Bending. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Identification and Selection of Tools, Materials, and Components		Complete
Content Skill Sets		Knowledge/ Performance
1758.01	Identify and correctly use hand and power tools.	
1758.02	Identify and select proper conductor cable type.	
1758.03	Identify and select proper conduit, boxes, and fittings.	
1758.04	Identify the function and purpose of various specialty equipment, including Ground Fault Circuit Interrupter (GFCI), Arc-Fault Circuit Interrupter (AFCI), Tamper- Resistant, and Transient Voltage Surge Suppressor (TVSS).	
1758.05	Identify commonly used listed and labeled equipment.	

National Electrical Code (NEC)		Complete
Content Skill Sets		Knowledge/ Performance
1758.06	Identify basic service entrance requirements.	
1758.07	Describe proper bonding and grounding methods.	

AC Theory, Magnetic Theory, and DC Theory		Complete
Content Skill Sets		Knowledge/ Performance
1758.08	Identify characteristics of AC circuits.	
1758.09	Explain capacitance, inductance, impedance, current, voltage, and resistance.	
1758.10	Identify characteristics and components of DC circuits.	

Circuit Theorems and Conversions		Complete
Content Skill Sets		Knowledge/ Performance
1758.11	Interpret Meter Readings.	

Motors		Complete
Content Skill Sets		Knowledge/ Performance
1758.12	Describe characteristics of various types of motors.	
1758.13	Identify and connect motor connections per nameplate (Delta/Wye and single-phase).	
1758.14	Test, troubleshoot, and reverse motor rotation.	
1758.15	Select short-circuit and overload protection for specific applications.	
1758.16	Identify and interpret motor nameplate information (e.g., voltage and phases).	

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
1758.17	Apprenticeships used for exploitation.	
1758.18	Examples of early Apprenticeships.	
1758.19	Apprenticeship expansion in the Industrial Revolution.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
1758.20	Modern Apprenticeship Programs.	
1758.21	Support of Apprenticeship Programs Today.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
1758.22	Simulated Workplace Manual.	

Course Description: Electrical Trades IV will continue to build student skill sets in areas of Pull and Junction Boxes; Conductor Installations; Cable Tray; Conductor Terminations and Splices; Grounding and Bonding; Circuit Breakers and Fuses; and Control Systems and Fundamental Concepts. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

National Electrical Code (NEC)		Complete
Content Skill Sets		Knowledge/ Performance
1759.01	Describe proper bonding and grounding methods.	

Wiring, Circuits, and Installation		Complete
Content Skill Sets		Knowledge/ Performance
1759.02	Select appropriate wiring for specific installations.	
1759.03	Install various switching arrangements.	
1759.04	Install cabling, raceways, conduit, boxes, wiring, devices, and trims.	
1759.05	Test and troubleshoot completed installation.	

Green and Renewable Technology		Complete
Content Skill Sets		Knowledge/ Performance
1759.06	Discuss wind turbine, solar energy, and other renewable sources of energy.	
1759.07	Explain the function and characteristics of rectifiers, inverters, and filters.	
1759.08	Describe energy management devices (e.g., LED lighting, CFL's, occupancy sensors).	

Transformers		Complete
Content Skill Sets		Knowledge/ Performance
1759.09	Identify and calculate voltage/current for primary and secondary windings.	
1759.10	Determine KVA capacity and differentiate between Delta and Wye connections.	

Motors		Complete
Content Skill Sets		Knowledge/ Performance
1759.11	Describe characteristics of various types of motors.	
1759.12	Identify and connect motor connections per nameplate (Delta/Wye and single- phases).	
1759.13	Test, troubleshoot, and reverse motor rotation.	
1759.14	Select short-circuit and overload protection for specific applications.	
1759.15	Identify and interpret motor nameplate information (e.g., voltage and phases).	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
1759.16	Unions working with Contractors in Construction Trades.	
1759.17	Construction Trades Unions in West Virginia with Apprenticeship Programs.	
1759.18	Apprenticeship opportunities in the Construction trades.	
1759.19	Pre-Job Training.	
1759.20	Working on the Jobsite.	
1759.21	Working with your Supervisor and Others.	
1759.22	Harassment and discrimination.	

Are You Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1759.23	Qualities of a Successful Apprentice.	
1759.24	Interviewing for Apprenticeships in Construction.	
1759.25	Interviewing Tips for Construction Apprenticeships.	
1759.26	Common Interview Questions.	

Course Description: This course introduces the student to the knowledge base and technical skills regarding Blueprint Reading for Electricians. Areas of study include building plans and specifications and blueprint and schematic reading. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

Building Plans and Specifications for Electrical Installations		Complete
Content Skill Sets		Knowledge/ Performance
1762.01	Building plans, specification, symbols, and notations.	
1762.02	Differentiate between the six major plan groups consisting of civil, architectural, structural, mechanical, plumbing, and electrical.	
1762.03	Analyze the purpose and functions of symbols and notations used within electrical drawings.	

Blueprint Reading for Electrical Installations		Complete
Content Skill Sets		Knowledge/ Performance
1762.04	Electrical projects and electrical blueprints.	
1762.05	Identify basic electrical blueprint components, symbols, and applications.	
1762.06	Classify drawings as pictorial, schematic or ladder.	
1762.07	Interpret and apply drawing dimensions in completing electrical projects.	
1762.08	Compare components shown on a plan to the corresponding schedule.	
1762.09	Evaluate electrical blueprint specifications.	
1762.10	Perform take-offs and estimate material costs.	

Schematic Reading for Electrical Installations		Complete
Content Skill Sets		Knowledge/ Performance
1762.11	Electrical project schematics.	
1762.12	Identify various parts and components using schematic drawings.	
1762.13	List and schematically represent the components that make up a basic electrical circuit.	
1762.14	Demonstrate proper flow sequence in reading a block or ladder diagram.	
1762.15	Construct and analyze a basic electrical circuit using a schematic diagram.	

Course Description: This course introduces the student to the knowledge base and technical skills for Fundamentals of Electricity. Areas of study include electrical safety, electrical math concepts, and basic circuits. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

Electrical Safety		Complete
Content Skill Sets		Knowledge/ Performance
1763.01	Basic electrical safety.	
1763.02	Describe the effect of current on a human body.	
1763.03	Explain what to do for victims of electrical shock.	
1763.04	Describe typical shock hazards in industry.	
1763.05	Identify various types of safety devices used with electricity.	
1763.06	List general safety precautions when working with electricity.	
1763.07	List and describe the safe use of basic hand tools and power tools used in the field of electricity.	
1763.08	Demonstrate and use properly an ammeter, ohmmeter, and a voltmeter.	
1763.09	Explain the difference between power and control circuits.	
1763.10	Define electric charge and electric current.	
1763.11	Differentiate between insulators, conductors, and semi-conductors.	
1763.12	Define current, voltage, and resistance.	
1763.13	Explain the theory of ohm's law.	
1763.14	Utilize a multi-meter.	
1763.15	Describe the law of magnetism.	
1763.16	List the steps to fill out a lock-out tag.	

Electrical Math Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1763.17	Accurate measurement practices.	
1763.18	Algebraic computations.	
1763.19	Critical thinking skills.	
1763.20	Demonstrate the use of English and Metric measurement.	
1763.21	Perform mathematical computations as they relate to electrical control activities.	
1763.22	Interpret various charts, graphs, and drawings.	
1763.23	Generate ideas and design solutions to problems.	
1763.24	Explain the theory of Ohm's law.	

1763.25	List basic terms, components, and symbols.	
1763.26	Demonstrate the basic needs and usages of blueprint specifications.	
1763.27	Utilize a multi-meter.	

Basic Circuits		Complete
Content Skill Sets		Knowledge/ Performance
1763.28	Basic electrical circuitry.	
1763.29	Constructing, troubleshooting, and recording the readings of a circuit.	
1763.30	Select proper settings and ranges, interpret values indicated on digital multimeters (DMM).	
1763.32	Differentiate between alternating current and direct current and identify common applications for each.	
1763.32	Explain the difference between conductors and insulators.	
1763.33	Explain the difference between digital and analog meters.	
1763.34	Explain how voltage, current, and resistance are related to each other.	
1763.35	Calculate electrical values in series and parallel circuits.	
1763.36	Apply solderless terminals and wire nuts.	
1763.37	Properly remove insulation and make pigtail and device terminations.	
1763.38	Exhibit the ability to safely and correctly use electrical instruments to measure voltage and resistance.	
1763.39	Measure velocity, horsepower, revolutions per minute (rpm), amperage, circuitry, and voltage in units or parts to diagnose problems, using ammeters, voltmeters, wattmeters, and other testing devices.	
1763.40	Find the total amount of resistance in a series, parallel, and s series parallel circuit.	
1763.41	Calculate, using Kirchoff's Voltage Law, the voltage drop in series, parallel, and s series-parallel circuit.	
1763.42	Test faulty equipment to diagnose malfunctions using test equipment or software.	

Course Description: This course introduces the student to the knowledge base and technical skills for Industrial and Commercial Wiring. Areas of study include conduit and raceways and commercial load calculations and configurations. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts and teachers should provide each student with real world learning opportunities and instruction related to course concepts.

Conduit and Raceways

Complete

Content Skill Sets		Knowledge/ Performance
1764.01	NEC requirements for raceways systems. conduit bending.	
1764.02	List NEC requirements for installation and construction of various conduit and raceway systems.	
1764.03	Plan layout and installation of electrical wiring, equipment, or fixtures, based on job specifications and local codes.	
1764.04	Place conduit, pipes, or tubing, inside designated partitions, walls, or other concealed areas, and pull insulated wires or cables through the conduit to complete circuits between boxes.	

Commercial Load Calculations and Configurations

Complete

Content Skill Sets		Knowledge/ Performance
1764.05	Calculating commercial loads using NEC. single-phase and three-phase transformers. delta and wye configurations.	
1764.06	Calculate the following: window loads; lighting loads; luminary loads, receptacle loads; general lighting loads.	
1764.07	Inspect electrical connections, wiring, relays, charging resistance boxes, and storage batteries, following wiring diagrams.	
1764.08	Connect wires to circuit breakers and transformers.	
1764.09	Identify safety precautions when working with transformers.	
1764.10	Compare various types of transformer connections.	
1764.11	Terminate dual-voltage transformers for high and low voltage operations.	
1764.12	Inspect electrical systems, equipment, or components to identify hazards, defects, or the need to adjust or repair.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Integrated Electrical Lab. Areas of study include electrical installation project, rough-in procedure, test and check circuits and termination and trim-out. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to course concepts.

Electrical Installation Project		Complete
Content Skill Sets		Knowledge/ Performance
1766.1	An electrical installation project.	
1766.2	Lay out an electrical floor plan.	
1766.3	Calculate the minimum number and type of branch circuits required.	
1766.4	Evaluate the plans to make certain that all codes and specifications are met.	

Rough-In Procedure		Complete
Content Skill Sets		Knowledge/ Performance
1766.5	Rough-in procedures.	
1766.6	Explain the sequential order in rough-in installation.	
1766.7	Complete installation according to floor plan.	

Test and Check Circuits		Complete
Content Skill Sets		Knowledge/ Performance
1766.8	Checking circuits.	
1766.9	Demonstrate proper use and application of electrical test equipment.	
1766.10	Verify that the electrical rough-in is done in a workmanlike manner.	

Terminate and Trim-Out		Complete
Content Skill Sets		Knowledge/ Performance
1766.11	Termination and trim-out projects.	
1766.12	Verify that conductor length is maintained in all boxes for termination.	
1766.13	Conclude that conductors are electrically and mechanically secure.	
1766.14	Install devices and luminaries.	

1766.15	Install faceplates, covers and panel fronts.	
1766.16	Diagnose project.	

NOTES:

Course Description: This course introduces the student to the knowledge base and technical skills for the NEC. Areas of study include demonstrating skills in the use of the NEC, applying calculations to assure NEC standards are met. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

National Electrical Code (NEC) Book Configuration		Complete
Content Skill Sets		Knowledge/ Performance
1767.01	Reading and navigating the NEC.	
1767.02	Explain history and purpose of the Code.	
1767.03	Explain chapter layout of the NEC.	
1767.04	List installations that the NEC covers and those not covered.	
1767.05	List sequence of organizational components of the NEC.	
1767.06	List steps for finding information in the NEC.	

NEC Calculations		Complete
Content Skill Sets		Knowledge/ Performance
1767.07	Math skills to solve NEC calculations to NEC standards.	
1767.08	Determine conductor size and ampacity, overcurrent protection, grounding, bonding, and grounded conductor size.	
1767.09	Determine the steps for calculating a service entrance for a single-family dwelling unit.	
1767.10	Determine the steps for calculating a service entrance for a commercial building.	
1767.11	Determine box fill.	

Course Description: This course introduces the student to the knowledge base and technical skills for Residential Wiring. Areas of study include wiring data, service entrance equipment, luminary and receptacle outlets, protective devices, appliance and special circuits and low-voltage systems. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts.

Wiring Data		Complete
Content Skill Sets		Knowledge/ Performance
1769.01	Floor plans.	
1769.02	Design an electrical layout of a floor plan.	
1769.03	Validate floor plan to meet minimum NEC specifications.	

Service Entrance Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1769.04	Installing service entrance equipment.	
1769.05	List and install components of a service entrance.	
1769.06	Determine clearances for service drop per NEC regulations.	
1769.07	Explain installations of underground (lateral) service entrance.	

Luminaries and Receptacle Outlets		Complete
Content Skill Sets		Knowledge/ Performance
1769.08	The components in a circuit.	
1769.09	Install luminaries, switches, and receptacles.	
1769.10	Troubleshoot luminaries, switches, and receptacles.	

Protective Devices		Complete
Content Skill Sets		Knowledge/ Performance
1769.11	The function of protective devices and the application of protective devices in a circuit.	
1769.12	Explain differences between overload, overcurrent, and short circuit.	
1769.13	Install ground fault circuit interrupter and arc fault circuit interrupter breakers and receptacles.	

1769.14	Describe the operations of fuses and circuit breakers.	
---------	--	--

Appliance and Special Circuits		Complete
Content Skill Sets		Knowledge/ Performance
1769.15	NEC requirements and installing various appliances.	
1769.16	Outline NEC requirements for appliances and special circuits.	
1769.17	Install baseboard and wall mounted heating units with controls.	
1769.18	Install various fans.	
1769.19	Install various appliances.	

Low-Voltage Systems		Complete
Content Skill Sets		Knowledge/ Performance
1769.20	Low-voltage systems.	
1769.21	Install and troubleshoot doorbell and chime systems.	
1769.22	Install low-voltage thermostats for heat controls.	
1769.23	Install and/or explain low-voltage landscape lighting systems.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Rotating Devices and Control Circuitry. Areas of study include control circuitry and motor controls. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to course concepts.

Control Circuitry		Complete
Content Skill Sets		Knowledge/ Performance
1771.01	Wiring diagrams to construct motor control circuits.	
	Electrical symbols and interpretation of electrical diagrams.	
	Properly connecting common types of motors.	
1771.02	Study blueprints, schematics, manuals, or other specifications to determine installation procedures.	
1771.03	Identify and use common electrical symbols on wiring diagrams.	
1771.04	Differentiate between power and control circuits on electrical diagrams.	
1771.05	Remove and replace defective parts such as coil leads, carbon brushes, and wires, using soldering equipment.	
1771.06	Rewire electrical systems, and repair or replace electrical accessories.	

Motor Controls		Complete
Content Skill Sets		Knowledge/ Performance
1771.07	Relays and starters.	
	Automatic circuits.	
	AC and DC motors.	
1771.08	Explain the difference between manual and automatic circuits.	
1771.09	Identify the equipment and parts needed for automatic circuits.	
1771.10	Differentiate between power and control circuits on electrical diagrams.	
1771.11	Explain the operation of basic control circuits.	
1771.12	List and identify motor and motor control symbols.	
1771.13	Explain the purpose and uses of pilot devices.	
1771.14	Install various types of electronic and mechanical sensors and pilot devices.	
1771.15	Design and explain counter circuits.	
1771.16	Construct basic AC and DC circuits for manual and automatic controls.	
1771.17	Install jogging, plugging, and reversing circuits.	
1771.18	Design and explain relays and relay circuits.	

1771.19	Install overload relays in control circuits.	
1771.20	Explain the difference between relay and magnetic starters.	
1771.21	Adjust various types of time delay relays.	
1771.22	Install, test, and troubleshoot various types of single-phase, and three-phase motors in a circuit.	
1771.23	Use a phase rotation meter.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Building Maintenance and Operations industry. Building Maintenance and Operations I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets related to the fundamentals of Building Maintenance and Operations such as Site Layout One: Distance Measurement and Leveling; and Introduction to Concrete, Reinforcing Materials and Forms. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1774.01	Use Tools and Equipment Safely.	
1774.02	Demonstrate Electrical Safety.	
1774.03	Respond to Emergency situations (e.g., First Aid).	
1774.04	Demonstrate safe use of chemicals and hazardous materials (e.g., SDS, OSHA).	
1774.05	Use (PPE) Personal Protective Equipment.	

Tools and Materials		Complete
Content Skill Sets		Knowledge/ Performance
1774.06	Select tools appropriate for task.	
1774.07	Demonstrate appropriate care of tools.	
1774.08	Read instruments and measuring devices.	
1774.09	Install ceramic floor and wall tiles.	

Masonry		Complete
Content Skill Sets		Knowledge/ Performance
1774.10	Form and place concrete.	

General Maintenance**Complete****Content Skill Sets****Knowledge/
Performance**

1774.11	Identify and measure appropriate filters for various equipment.	
1774.12	Employ various practices of weather proofing and energy conservation.	
1774.13	Identify and maintain security and property equipment.	
1774.14	Identify general principles of welding.	

Course Description: Building Maintenance and Operations II will continue to build student skill sets in areas such as Handling and Placing Concrete; Introduction to Masonry; and Masonry Units and Installation Techniques. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Tools and Materials		Complete
Content Skill Sets		Knowledge/ Performance
1775.01	Select Hardware, Fasteners, and Adhesives.	
1775.02	Estimate and order materials.	

Masonry		Complete
Content Skill Sets		Knowledge/ Performance
1775.03	Install moisture barriers.	
1775.04	Lay and repair bricks and blocks.	
1775.05	Form and place concrete.	
1775.06	Install ceramic floor and wall tiles.	

Grounds and Equipment Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1775.07	Maintain power equipment (e.g., filters, oil changes, spark plugs, belts, blade sharpening, batteries).	
1775.08	Exhibit knowledge of proper lawn installation and maintenance.	
1775.09	Plant and maintain trees and shrubs.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
1775.10	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
1775.11	Benefits of Apprenticeship.	
1775.12	Apprenticeship Components and Models.	
1775.13	Businesses and Partners.	
1775.14	Common Apprenticeship Myths.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
1775.15	Modern Apprenticeship Programs.	
1775.16	Support of Apprenticeship Programs Today.	

Course Description: Building Maintenance and Operations III will continue to build student skill sets in areas of Floor Systems; Wall and Ceiling Framing; Roof Framing; and Roofing Applications. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Carpentry		Complete
Content Skill Sets		Knowledge/ Performance
1776.01	Identify and install rough carpentry including sub-flooring and framing.	
1776.02	Identify and install appropriate interior finish carpentry, including insulation, drywall, trim work, and cabinetry.	
1776.03	Identify and install exterior rough carpentry and coverings (e.g., roof coverings, cornices, sheathings).	

Paint and Wall Covering		Complete
Content Skill Sets		Knowledge/ Performance
1776.04	Demonstrate knowledge of cleaning and surface preparation.	
1776.05	Display knowledge of interior wall and ceiling finish products.	
1776.06	Display knowledge of painting and staining applications.	

Plumbing		Complete
Content Skill Sets		Knowledge/ Performance
1776.07	Identify, maintain, and install plumbing equipment.	
1776.08	Identify, maintain, and repair piping.	
1776.09	Repair and replace plumbing fixtures.	
1776.11	Identify plumbing architectural symbols.	
1776.12	Perform weatherization procedures.	
1776.13	Identify and maintain various pumps.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
1776.14	Simulated Workplace Manual.	

Course Description: Building Maintenance and Operations will continue to build student skill sets in areas of Exterior Finishing; Basic Stair Layout; Electrical Safety; and Residential Electrical Services. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Carpentry		Complete
Content Skill Sets		Knowledge/ Performance
1777.01	Identify and install appropriate interior finish carpentry, including insulation, drywall, trim work, and cabinetry.	
1777.02	Identify and install exterior rough carpentry and coverings (e.g., roof coverings, cornices, sheathings).	
1777.03	Identify and install exterior rough carpentry, including siding, decking, and porches.	

HVAC (Heating, Ventilation, and Air Cooling)		Complete
Content Skill Sets		Knowledge/ Performance
1777.04	Demonstrate knowledge of HVAC fundamentals.	
1777.05	Maintain HVAC systems.	

Electrical		Complete
Content Skill Sets		Knowledge/ Performance
1777.06	Remove or replace electrical equipment, components, and appliances.	
1777.07	Install and troubleshoot low-voltage circuits.	
1777.08	Identify electrical architectural symbols.	
1777.09	Maintain electrical systems and emergency generators.	
1777.10	Identify and maintain (GFCI) Ground Fault Circuit Interrupters.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
1777.11	Unions working with Contractors in Construction Trades.	
1777.12	Construction Trade Unions in West Virginia with Apprenticeship Programs.	
1777.13	Apprenticeship opportunities in Construction Trades.	
1777.14	Applying for Apprenticeship in the Construction Trades.	

1777.15	Pre-Job Training.	
1777.16	Working on the Jobsite.	
1777.17	Working with your Supervisor and Others.	
1777.18	Harassment and Discrimination.	

Are You Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1777.19	Qualities of a Successful Apprentice.	
1777.20	Interviewing for Apprenticeships in Construction.	
1777.21	Interviewing tips for Construction Apprenticeships.	
1777.22	Common Interview Questions.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Basic Plumbing and Electricity. Areas of study include basic plumbing skills, advanced plumbing repair and basic electrical skills. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to facilities maintenance occupations.

Basic Plumbing Skills		Complete
Content Skill Sets		Knowledge/ Performance
1803.01	Basic plumbing skills.	
1803.02	Identify terms, tools, materials and fixtures common to plumbing repair.	
1803.03	Measure, cut, join, and apply fittings to various types of pipe and tubing.	
1803.04	Open clogged lines using chemicals, plunger, snake or auger.	
1803.05	Winterize water supply lines, traps and drains.	

Advanced Plumbing Repair		Complete
Content Skill Sets		Knowledge/ Performance
1803.06	Plumbing repair.	
1803.07	Test to detect leaks on water pipes and repair leaking faucets and pipes.	
1803.08	Clean gas furnace burner chamber and thermocouple, test for leaks and ventilate vapor from confined area.	
1803.09	Maintain water heaters and furnaces including: pressure safety valve, temperature adjustment and lighting pilot lights.	

Basic Electrical Skills		Complete
Content Skill Sets		Knowledge/ Performance
1803.10	Basic electrical skills.	
1803.11	Identify terms, tools materials, and fixtures common to electrical repair.	
1803.12	Replace defective fixtures such as: receptacles, switches, outlets, sockets, cords, plugs, and wiring.	
1803.13	Replace fluorescent and incandescent bulbs.	
1803.14	Remove and replace faulty burners and oven heating elements in electric ranges.	
1803.15	Test fuses and electrical circuits for power.	
1803.16	Remove, replace, and adjust thermostats.	
1803.17	Remove and replace ballasts and starters in fluorescent fixtures.	

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the Fundamentals of Facilities Maintenance Program of Study. Areas of study include career planning, basic safety, locating information and following technical instructions, basic carpentry and facility components. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to facilities maintenance occupations.

Career Planning		Complete
Content Skill Sets		Knowledge/ Performance
1805.01	Career opportunities related to facilities maintenance.	
1805.02	Research careers related to facilities maintenance and the training required for those careers.	
1805.03	Develop appropriate attitudes and behaviors needed for success in facilities maintenance.	
1805.04	Identify sources of information about a career in facilities maintenance.	

Basic Safety		Complete
Content Skill Sets		Knowledge/ Performance
1805.05	Basic safety as it relates to maintaining facilities and landscapes.	
1805.06	Recognize and follow general shop safety guidelines.	
1805.07	Utilize appropriate personal protective equipment.	
1805.08	Demonstrate proper lifting techniques.	
1805.09	Select and erect ladders and scaffolding in accordance with safety regulations.	
1805.10	Mix, apply, store, and dispose of job-related chemicals.	
1805.11	Select fire extinguishers for each class of fire.	

Locating Information and Following Technical Instructions		Complete
Content Skill Sets		Knowledge/ Performance
1805.12	Locating information and following technical instructions.	
1805.13	Interpret scale drawings.	
1805.14	Identify and define common architectural drawing symbols.	
1805.15	Research and follow technical information regarding specifications, codes, and instructions.	
1805.16	Read and complete work orders.	

Basic Carpentry Skills

Basic Carpentry Skills		Complete
Content Skill Sets		Knowledge/ Performance
1805.17	Basic Carpentry skills.	
1805.18	Utilize common carpentry tools and equipment.	
1805.19	Maintain tools and equipment used in the carpentry trade.	
1805.20	Construct simple wall, floor, and roof frames.	
1805.21	Repair flooring: including vinyl and ceramic floor tile.	
1805.22	Remove old finishes and apply new ones to a variety of different materials.	
1805.23	Prepare a wall for papering and hang wallpaper.	
1805.24	Repair windows by removing glass, cutting new glass, and glazing in the new window.	
1805.25	Remove and replace damaged window screens.	
1805.26	Repair stairways by removing and replacing stringers, treads and risers.	
1805.27	Repair and replace doors and hardware.	
1805.28	Cut angles and cope joints on moldings and install trim and fill nail holes.	
1805.29	Caulk windows and doors.	
1805.30	Install weather stripping.	
1805.31	Join, level, and install gutters and down spouts.	
1805.32	Clean gutters and downspouts and install leaf guards.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the building construction Program of Study. Areas of study include site layout and preparation, form construction, steel framing, suspended ceilings and floor coverings. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to commercial construction.

Site Layout and Preparation		Complete
Content Skill Sets		Knowledge/ Performance
1820.01	Site layout and preparation.	
1820.02	Summarize basic layout of a commercial site.	
1820.03	Compare various layout instruments and describe their uses.	
1820.04	Assess elevation differences.	
1820.05	Construct batter boards.	
1820.06	Compare, choose, and estimate fill and base materials for site preparation.	

Form Construction		Complete
Content Skill Sets		Knowledge/ Performance
1820.07	Concrete forms.	
1820.08	Design and construct forms for concrete footings.	
1820.09	Design and construct forms for concrete flat work.	
1820.10	Design and construct forms for vertical concrete work.	
1820.11	Select and arrange cylinder forms for a concrete pour.	
1820.12	Design and construct forms for concrete stairs.	

Steel Framing		Complete
Content Skill Sets		Knowledge/ Performance
1820.13	Materials, fasteners, and methods of steel framing.	
1820.14	Compare and evaluate the uses of steel framing components.	
1820.15	Compare and evaluate the uses of various steel fasteners.	
1820.16	Compare and evaluate the uses of various steel construction tools and equipment.	
1820.17	Analyze, choose, and apply steel framing methods.	

Suspended Ceilings

Suspended Ceilings		Complete
Content Skill Sets		Knowledge/ Performance
1820.18	Materials and fasteners needed to complete a suspended ceiling.	
1820.19	Investigate and compare different types of suspended ceilings.	
1820.20	Evaluate and determine the appropriate applications for suspended ceilings.	
1820.21	Measure, layout and install a suspended ceiling.	

Floor Coverings

Floor Coverings		Complete
Content Skill Sets		Knowledge/ Performance
1820.23	Measure, layout and install vinyl tile.	
1820.24	Measure, layout and install ceramic tile.	
1820.25	Measure, layout and install carpet.	
1820.26	Measure, layout and install appropriate floor trim.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Building Construction Program of Study. Areas of study include estimation, concrete construction, finishing concepts, properties of concrete, tools and equipment, concrete placement, work site preparation, finishing techniques, curing and protecting and troubleshooting concrete problems. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to concrete finishing.

Concrete Construction and Finishing Concepts		Complete
Content Skill Sets		Knowledge/ Performance
1821.01	Concrete construction finishing concepts.	
1821.02	Analyze terms and summarize characteristics of concrete.	
1821.03	Analyze and summarize the properties and processes of concrete.	
1821.04	Assess and differentiate in the career potentials in concrete finishing.	

Concrete Safety		Complete
Content Skill Sets		Knowledge/ Performance
1821.05	Concrete safety.	
1821.06	Determine and properly use the proper types of personal protective equipment for the work site.	
1821.07	Analyze and summarize the guidelines for dressing appropriately for concrete work.	
1821.08	Analyze and summarize how to safely handle concrete when forming, placing, curing, and finishing.	
1821.09	Summarize safety precautions to use when working in extreme hot and cold.	
1821.10	Summarize safety precautions to use when working with hazardous materials.	
1821.11	Summarize safety precautions to follow when handling and maintaining concrete construction tools.	

Analyzing Properties of Concrete		Complete
Content Skill Sets		Knowledge/ Performance
1821.12	Concrete properties.	
1821.13	Analyze the properties of concrete.	
1821.14	Summarize how the properties of concrete are used in construction.	
1821.15	Determine how the properties of concrete influence mix, placement, finishing, durability, and performance.	
1821.16	Summarize quality control tests on concrete ingredients, fresh concrete and hardened concrete.	
1821.17	Mix a batch of concrete.	

1821.18	Perform and analyze a slump test on a batch of concrete.	
---------	--	--

Tools and Equipment in Concrete Construction		Complete
Content Skill Sets		Knowledge/ Performance
1821.19	Concrete tools and equipment.	
1821.20	Evaluate tools and equipment used in concrete construction and describe the use of each.	
1821.21	Differentiate and properly use the trade terms associated with concrete, concrete tools, and equipment.	

Worksite Preparation for Concrete Placement		Complete
Content Skill Sets		Knowledge/ Performance
1821.22	Preparing a worksite for concrete placement.	
1821.23	Categorize basic layout using levels and measuring tools.	
1821.24	Evaluate, grade, and build forms for horizontal placement.	
1821.25	Perform compaction activities on sub grades.	
1821.26	Summarize various joints and where to locate them.	
1821.27	Summarize various reinforcements and how to place them.	
1821.28	Evaluate information needed when ordering concrete.	

Placing Concrete		Complete
Content Skill Sets		Knowledge/ Performance
1821.29	Concrete placement.	
1821.30	Summarize how concrete is conveyed and placed.	
1821.31	Create a pre-placement checklist.	
1821.32	Demonstrate the proper use of tools and equipment for placing concrete.	
1821.33	Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form.	
1821.34	Demonstrate the proper use of trade terms with the appropriate processes and equipment.	

Basic Concrete Finishing Techniques		Complete
Content Skill Sets		Knowledge/ Performance
1821.35	Finishing concrete.	
1821.36	Summarize the basic finishing process.	
1821.37	Demonstrate proper use of float, edger, groover, and trowel.	
1821.38	Measure, mark and cut joints with a saw.	

1821.39	Apply a broom finish.	
1821.40	Apply a rubbish finish.	
1821.41	Demonstrate the proper use of trade terms with the appropriate process and equipment.	

Curing and Protecting Concrete		Complete
Content Skill Sets		Knowledge/ Performance
182142	Curing and protecting concrete.	
1821.43	Summarize the process of curing concrete.	
1821.44	Categorize and summarize the methods of curing concrete.	
1821.45	Demonstrate the proper use of trade terms with the appropriate processes and equipment.	

Troubleshooting Basic Concrete Construction Problems		Complete
Content Skill Sets		Knowledge/ Performance
1821.46	Concrete procedures and troubleshooting concepts.	
1821.47	Analyze the basic finishing process.	
1821.48	Demonstrate proper use of float, edger, groover, and trowel.	
1821.49	Measure, mark, and cut joints with a saw.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Building Construction Program of Study. Areas of study include identifying various blueprints, terms, symbols, components, dimensions, classifications and construction task objectives. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to construction blueprints.

Blueprint Identification		Complete
Content Skill Sets		Knowledge/ Performance
1822.01	Blueprints for a construction project.	
1822.02	Categorize and evaluate basic blueprint terminology.	
1822.03	Categorize and evaluate basic blueprint symbols.	
1822.04	Categorize and evaluate basic blueprint components.	
1822.05	Categorize and evaluate various blueprint schedules.	

Using Blueprints to Identify Dimensions		Complete
Content Skill Sets		Knowledge/ Performance
1822.06	Scales used in various blueprints.	
1822.07	Summarize and demonstrate proper use of an architectural scale.	
1822.08	Convert actual measurements to scale measurements.	
1822.09	Design and develop a scale drawing for a specific project.	

Identify Blueprint Classifications		Complete
Content Skill Sets		Knowledge/ Performance
1822.10	Interpreting and summarizing sectional and detail drawings.	
1822.11	Evaluate and interpret plot plans.	
1822.12	Evaluate and interpret foundation plans.	
1822.13	Evaluate and interpret elevation plans.	
1822.14	Evaluate and interpret sectional views.	
1822.15	Evaluate and interpret detail drawings.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Building Construction Program of Study. Areas of study include estimation, insulation, vapor barriers, interior wall coverings, interior finish and exterior finish. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to finishing carpentry.

Insulation and Vapor Barriers

Complete

Content Skill Sets		Knowledge/ Performance
1823.01	Insulation and vapor barriers.	
1823.02	Install insulation in walls, ceilings, and floors.	
1823.03	Evaluate the type and determine the necessity for vapor barriers and properly install them.	
1823.04	Prepare a written cost estimate for insulation of specific project.	

Interior Wall Finish

Complete

Content Skill Sets		Knowledge/ Performance
1823.05	Interior wall finishes.	
1823.06	Estimate and hand drywall on interior walls and ceilings.	
1823.07	Properly finish drywall (nail holes, seams, and corners).	
1823.08	Prime and paint interior walls.	
1823.09	Properly install paneling and appropriate trim.	
1823.10	Prepare a written cost estimate for an interior finish project.	

Interior Finish

Complete

Content Skill Sets		Knowledge/ Performance
1823.11	Interior finishes.	
1823.12	Install doors and door locksets.	
1823.13	Measure, cut, and install baseboards, door and window casings.	
1823.14	Measure, cut and install various wall coverings.	
1823.15	Measure, cut and install various floor coverings.	
1823.16	Install cabinets.	
1823.17	Prepare a written cost estimate for a specific interior project.	

Exterior Finish**Complete****Content Skill Sets****Knowledge/
Performance**

1823.18	Exterior finishes.	
1823.19	Estimate and install fascia and soffit on eaves and rake.	
1823.20	Install attic ventilation.	
1823.21	Properly install exterior siding.	
1823.22	Paint exterior surfaces.	
1823.23	Prepare a written cost estimate for a specific exterior finish project.	

Course Description:

Floor Framing		Complete
Content Skill Sets		Knowledge/ Performance
1824.01	Prefabricated floor components.	
1824.02	Evaluate and compare various prefabricated floor components.	
1824.03	Estimate and lay out various prefabricated floor components.	
1824.04	Evaluate and use various floor framing fasteners.	
1824.05	Prepare a written estimate and complete a project using prefabricated floor components.	

Metal Wall Framing		Complete
Content Skill Sets		Knowledge/ Performance
1824.06	Metal wall framing.	
1824.07	Analyze and compare metal framing components.	
1824.08	Demonstrate metal cutting techniques.	
1824.09	Demonstrate metal fastening techniques.	
1824.10	Estimate materials for and complete a project using metal construction materials.	
1824.11	Assess criteria needed for utility installation in metal framing.	

Roof Framing Systems		Complete
Content Skill Sets		Knowledge/ Performance
1824.12	Roof framing systems.	
1824.13	Measure, lay out, cut, and install hip roof systems.	
1824.14	Measure, lay out, cut, and install gambrel roof systems.	
1824.15	Measure, lay out, cut and install roof dormer.	
1824.16	Measure, lay out, cut, and install valley roof systems.	
1824.17	Measure, lay out, cut, and install roof trusses.	

Post and Beam Construction		Complete
Content Skill Sets		Knowledge/ Performance
1824.18	Post and beam construction.	
1824.19	Analyze and categorize post and beam construction components.	
1824.20	Estimate materials needed for a post and beam construction project.	
1824.21	Perform various cutting and joining techniques for post and beam construction.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Building Construction Program of Study. Areas of study include foundation and framing procedures and foundation and framing applications. Emphasis will be placed on career exploration, job-seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to construction applications.

Review Foundation and Framing Procedures		Complete
Content Skill Sets		Knowledge/ Performance
1828.01	Foundation and framing procedures.	
1828.02	Review, demonstrate, and develop foundations procedures.	
1828.03	Review, demonstrate, and develop floor framing procedures.	
1828.04	Review, demonstrate, and develop wall framing procedures.	
1828.05	Review, demonstrate, and develop roof system framing procedures.	
1828.06	Review, demonstrate, and develop interior finishing procedures.	
1828.07	Review, demonstrate, and develop exterior finishing procedures.	

Implementation of Foundation and Framing Procedures and Applications		Complete
Content Skill Sets		Knowledge/ Performance
1828.08	Foundation and framing procedures and applications.	
1828.09	Choose, implement, and practice foundation applications.	
1828.10	Choose, implement, and practice floor framing applications.	
1828.11	Choose, implement, and practice wall framing applications.	
1828.12	Choose, implement, and practice roof system framing applications.	
1828.13	Choose, implement, and practice interior finish applications.	
1828.14	Choose, implement, and practice exterior finish applications.	
1828.15	Prepare a written cost estimate for a specific construction project.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Building Construction Program of Study. Areas of study include estimation, masonry materials, rough in plumbing systems and installation of finish plumbing. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to masonry and plumbing.

Foundation Objectives

		Complete
Content Skill Sets		Knowledge/ Performance
1829.01	Safety and foundation objectives.	
1829.02	Categorize and demonstrate the safe use of masonry tools and equipment.	
1829.03	Lay out and square a foundation using a transit and the 6, 8, 10 method.	
1829.04	Analyze and explain the size of footings for various masonry applications.	
1829.05	Analyze and justify the components of mortar and properly prepare a usable mortar mixture.	
1829.06	Analyze and demonstrate proper waterproofing and ventilation in a foundation.	
1829.07	Lay out and construct a project using masonry units to produce a corner and install units to a line.	
1829.08	Prepare a written cost estimate for a masonry project.	

Rough in a Plumbing System

		Complete
Content Skill Sets		Knowledge/ Performance
1829.09	Safety skills and rough plumbing systems.	
1829.10	Categorize and demonstrate the safe use of plumbing tools and equipment.	
1829.11	Categorize and demonstrate the proper use of various materials and processes.	
1829.12	Assemble DWV system according to code.	
1829.13	Complete a plastic plumbing project using pipe and fittings per given diagram.	
1829.14	Complete a copper plumbing project using pipe and fittings per given diagram.	
1829.15	Prepare a written cost estimate for a plumbing project.	

Install Finish Plumbing

Complete

Content Skill Sets

Knowledge/
Performance

1829.16 Installing finish plumbing.

1829.17 Properly install various plumbing fixtures (commode, lavatory, bath tub, and/or shower).

1829.18 Install shut off valves, faucets, and screw-on fittings.

1829.19 Evaluate and/or demonstrate the installation of a hot water heater.

1829.20 Prepare a given fixture cost estimate for a given structure.

Course Description: This course introduces the student to the knowledge base and technical skills of the carpentry industry. Carpentry I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets related to the fundamentals of Carpentry such as Orientation to the Trade; Building Materials, Fasteners, and Adhesives; and Hand and Power Tools. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1842.01	Demonstrate safe material handling practices.	
1842.02	Display comprehension of workplace/job-site Safety procedures (OSHA).	
1842.03	Exhibit knowledge of SDS and personal protective equipment (PPE).	
1842.04	Display understanding of Hand tool Safety issues.	
1842.05	Display understanding of Power Tool safety issues.	

Carpentry-Related Mathematics		Complete
Content Skill Sets		Knowledge/ Performance
1842.06	Perform basic mathematical operations: whole numbers, fractions, and decimals.	
1842.07	Perform linear, square, and cubic computations.	
1842.08	Perform algebraic and geometric functions.	

Tools and Accessories		Complete
Content Skill Sets		Knowledge/ Performance
1842.09	Use and maintain hand tools.	
1842.10	Use and maintain power tools.	
1842.11	Use and maintain measuring, layout, and marking tools.	

Course Description: Carpentry II will continue to build student skill sets in areas such as Reading Plans and Elevations; Floor Systems, Wall and Ceiling Framing; Roof Framing; Introduction to Concrete, Reinforcing Materials, and Forms; Windows and Exterior Doors; Basic Stair Layout. Students utilize problem- solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Tools and Accessories		Complete
Content Skill Sets		Knowledge/ Performance
1843.01	Use and maintain hand tools.	
1843.02	Use and maintain power tools.	
1843.03	Use and maintain measuring, layout, and marking tools.	

Foundations, Forms, and Concrete		Complete
Content Skill Sets		Knowledge/ Performance
1843.04	Lay out foundation.	
1843.05	Construct and align footing and foundation forms.	
1843.06	Install, brace, align, and remove formwork.	
1843.07	Understand concrete characteristics.	

Rough Framing		Complete
Content Skill Sets		Knowledge/ Performance
1843.08	Demonstrate understanding of floor systems.	
1843.09	Demonstrate understanding of wall systems.	
1843.10	Demonstrate understanding of roof systems.	
1843.11	Calculate, lay out, and install stairs.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
1843.12	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
1843.13	Benefits of Apprenticeship.	
1843.14	Apprenticeship Components and Models.	
1843.15	Businesses and Partners.	
1843.16	Common Apprenticeship Myths.	

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
1843.17	Apprenticeships used for exploitation.	
1843.18	Examples of early Apprenticeships.	
1843.19	Apprenticeship expansion in the Industrial Revolution.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
1843.20	Modern Apprenticeship Programs.	
1843.21	Support of Apprenticeship Programs Today.	

Course Description: Carpentry III will continue to build student skill sets in areas of Commercial Drawings; Roofing Applications; Thermal and Moisture Protection; and Exterior Finishing. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Exterior Finish		Complete
Content Skill Sets		Knowledge/ Performance
1844.01	Identify and install cornice and trim.	
1844.02	Calculate and install roofing.	
1844.03	Identify, prepare, and install windows and doors.	
1844.04	Calculate, lay out, and install siding.	

Interior Finish		Complete
Content Skill Sets		Knowledge/ Performance
1844.05	Install insulation.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
1844.06	Simulated Workplace Manual.	

Course Description: Carpentry IV will continue to build student skill sets in areas of Cold-Formed Steel Framing; Drywall Installation; Drywall Finishing; Doors and Door Hardware; Suspended Ceilings; Window, Door, Floor, and Ceiling Trim; Cabinet Installation; and Cabinet Fabrication. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Interior Finish		Complete
Content Skill Sets		Knowledge/ Performance
1845.01	Install Insulation.	
1845.02	Install and finish interior walls.	
1845.03	Install interior doors.	
1845.04	Install standing and running trim.	
1845.05	Install cabinets and associated hardware.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
1845.06	Unions working with Contractors in Construction Trades.	
1845.07	Construction Trade Unions in West Virginia with Apprenticeship Programs.	
1845.08	Apprenticeship opportunities in Construction Trades.	
1845.09	Applying for Apprenticeship in the Construction Trades.	
1845.10	Pre-Job Training.	
1845.11	Working on the Jobsite.	
1845.12	Working with your Supervisor and Others.	
1845.13	Harassment and Discrimination.	

Are You Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1845.14	Qualities of a Successful Apprentice.	
1845.15	Interviewing for Apprenticeships in Construction.	
1845.16	Interviewing tips for Construction Apprenticeships.	
1845.17	Common Interview Questions.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Masonry industry. Masonry I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets related to the fundamentals of Masonry such as Introduction to Masonry; and Masonry Tools and Equipment. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1846.01	Identify and use PPE (personal protective equipment).	
1846.02	Demonstrate knowledge of workplace/jobsite safety procedures, including lock-out/tag-out.	
1846.03	Exhibit understanding of OSHA safety standards and SDS.	
1846.04	Erect and use scaffolds safely.	
1846.05	Display understanding of ladder safety.	

Craft Knowledge		Complete
Content Skill Sets		Knowledge/ Performance
1846.06	Explain the history of the craft.	
1846.07	Identify job opportunities in the masonry industry.	
1846.08	Identify craft terminology.	

Hand and Power Tools		Complete
Content Skill Sets		Knowledge/ Performance
1846.09	Identify, use, and properly care for hand tools.	
1846.10	Identify, use and properly care for power tools.	

Math and Measurements		Complete
Content Skill Sets		Knowledge/ Performance
1846.11	Exhibit comprehension of construction masonry-related mathematics.	

1846.12	Exhibit understanding of measurements and conversions.	
1846.13	Estimate/calculate materials needed.	

Professionalism		Complete
Content Skill Sets		Knowledge/ Performance
1846.14	Exhibit understanding of communication/leadership skills.	
1846.15	Display understanding of professional ethics and behavior.	

Course Description: Masonry II will continue to build student skill sets in areas such as Measurements, Drawings, and Specifications; Mortar; and Masonry Units and Installation Techniques. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Hand and Power Tools		Complete
Content Skill Sets		Knowledge/ Performance
1847.01	Identify, use, and properly care for hand tools.	
1847.02	Identify, use, and properly care for power tools.	

Materials		Complete
Content Skill Sets		Knowledge/ Performance
1847.03	Identify and select materials, including synthetic stone and brick products.	
1847.04	Identify various mortars (M, S, N, O) and cements (Type I, II, III) and their uses.	
1847.05	Identify material sizes.	

Blueprints and Specifications		Complete
Content Skill Sets		Knowledge/ Performance
1847.06	Read and interpret written specifications.	
1847.07	Identify and interpret lines and symbols.	
1847.08	Read and interpret drawings and plans.	

Masonry Structure Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1847.09	Restore and repoint masonry units.	
1847.10	Select and use masonry cleaning agents.	

Apprenticeship Awareness

Complete

Content Skill Sets

Knowledge/
Performance

1847.11	Apprenticeship Basics.	
---------	------------------------	--

What is Apprenticeship?

Complete

Content Skill Sets

Knowledge/
Performance

1847.12	Benefits of Apprenticeship.	
---------	-----------------------------	--

1847.13	Apprenticeship Components and Models.	
---------	---------------------------------------	--

1847.14	Businesses and Partners.	
---------	--------------------------	--

1847.15	Common Apprenticeship Myths.	
---------	------------------------------	--

Course Description: Masonry III will continue to build student skill sets in areas of Residential Plans and Drawing Interpretation; Residential Masonry; Grout and Other Reinforcement; and Metal Work in Masonry. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Blueprints and Specifications		Complete
Content Skill Sets		Knowledge/ Performance
1848.01	Read and interpret written specifications.	
1848.02	Identify and interpret lines and symbols.	
1848.03	Read and interpret drawings and plans.	

Project Layout		Complete
Content Skill Sets		Knowledge/ Performance
1848.04	Square a building, use 3-4-5/Pythagorean theory.	
1848.05	Install a corner/story pole and determine heights.	
1848.06	Identify masonry bond types.	
1848.07	Install a metal door/window frame.	
1848.08	Lay out and construct control joints.	
1848.09	Identify and install anchor bolts and masonry fasteners.	

Brick		Complete
Content Skill Sets		Knowledge/ Performance
1848.10	Set up job site.	
1848.11	Lay brick to the line.	
1848.12	Tool off/joint units.	
1848.13	Build brick leads and corners.	
1848.14	Identify and construct steps and components.	
1848.15	Install masonry pavers.	
1848.16	Identify and install wall ties and accessories.	
1848.17	Identify and position various types of lintels.	
1848.18	Identify types of arches.	

1848.19	Exhibit understanding of arch applications.	
---------	---	--

Fireplaces and Chimneys		Complete
Content Skill Sets		Knowledge/ Performance
1848.20	Identify parts of fireplace/chimney.	
1848.21	Install fireplace/chimney components.	
1848.22	Display familiarity with building codes.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
1848.23	Simulated Workplace Manual.	

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
1848.24	Apprenticeships used for Exploitation.	
1848.25	Examples of Early Apprenticeships.	
1848.26	Apprenticeship expansion in the Industrial Revolution.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
1848.27	Modern Apprenticeships Programs.	
1848.28	Support of Apprenticeship Programs today.	

Course Description: Masonry IV will continue to build student skill sets in areas of Advanced Laying Techniques; Construction Techniques and Moisture Control; and Construction Inspection and Quality Control. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Flashing, Weeps, and Insulation

Complete

Content Skill Sets		Knowledge/ Performance
1849.01	Install Flashing correctly.	
1849.02	Install Weep Holes correctly.	
1849.03	Install Insulation correctly.	

Project Layout

Complete

Content Skill Sets		Knowledge/ Performance
1849.04	Identify masonry bond types.	
1849.05	Lay out and construct control joints.	
1849.06	Identify and install anchor bolts and masonry fasteners.	

Unions and Apprenticeship Programs

Complete

Content Skill Sets		Knowledge/ Performance
1849.07	Unions working with Contractors in Construction trades.	
1849.08	Construction Trades Unions in West Virginia with Apprenticeship Programs.	
1849.09	Apprenticeship opportunities in Construction trades.	
1849.10	Applying for Apprenticeship in the Construction trades.	
1849.11	Pre-Job training.	
1849.12	Working on the Jobsite.	
1849.13	Working with your Supervisor and others.	
1849.14	Harassment and discrimination.	

Are you Apprenticeship Ready?

Are you Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1849.15	Qualities of a Successful Apprentice.	
1849.16	Interviewing for Apprenticeships in Construction.	
1849.17	Interviewing tips for Construction Apprenticeships.	
1849.18	Common Interview questions.	

Course Description: This course introduces the student to the knowledge base and technical skills necessary for all courses in the Graphic Design Program of Study. Areas of study include media applications, perspective, drawing and painting, and student organizations. Students will demonstrate knowledge and technical expertise in illustration. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to graphic design occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Skillset Name		Complete
Content Skill Sets		Knowledge/ Performance
1851.01	Demonstrate knowledge of computer terminology.	
1851.02	Identify and operate peripherals and other network devices.	
1851.03	Demonstrate appropriate knowledge, security, and use of software.	
1851.04	Apply basic troubleshooting and maintenance skills.	
1851.05	Demonstrate file management and storage skills.	
1851.06	Describe procedures involved with importing and exporting.	
1851.07	Identify legal restrictions.	

Typography		Complete
Content Skill Sets		Knowledge/ Performance
1851.08	Demonstrate knowledge of typographic terminology.	
1851.09	Calculate type measurements.	
1851.10	Diagnose and solve typography problems (e.g., tracking, kerning, readability, legibility).	
1851.11	Manipulate type through character and paragraph formatting.	
1851.12	Choose and apply appropriate typeface.	

Design Literacy and Application		Complete
Content Skill Sets		Knowledge/ Performance
1851.13	Demonstrate knowledge of basic design terminology (e.g., bleed, live area, trim, orientation).	
1851.14	Exhibit knowledge of design elements and principles.	
1851.15	Apply skills of database management and variable data printing.	

1851.16	Describe characteristics of design for different media (e.g., logos, magazines).	
1851.17	Choose appropriate ideas through the visual stages of layout (e.g., thumbnail, rough, comprehensive).	
1851.18	Demonstrate understanding of related math(e.g., proportion, percentages, basic measurements).	
1851.19	Demonstrate ability to solve design problems.	

Color Theory and Application		Complete
Content Skill Sets		Knowledge/ Performance
1851.20	Identify color theory terminology.	
1851.21	Demonstrate the use of color to create impact or effect.	
1851.22	Mix colors to obtain shades, tints, or neutrals.	
1851.23	Choose and apply appropriate color scheme.	
1851.24	Identify correct use of RGB and CMYK colors.	

Digital Illustration and Drawing		Complete
Content Skill Sets		Knowledge/ Performance
1851.25	Identify basic tools and materials (e.g.,computer software, pencils, paper).	
1851.26	Identify drawing and digital illustration terminology.	
1851.27	Utilize different drawing techniques (e.g., line art, continuous tone, stipple, watercolor).	
1851.28	Modify illustrations (e.g., size, color, stroke).	
1851.29	Identify ways to import, export, and save images (e.g., scanning, digitizing).	

Photography		Complete
Content Skill Sets		Knowledge/ Performance
1851.30	Identify photography terminology.	
1851.31	Demonstrate use of cameras and accessories.	
1851.32	Apply copyright laws pertaining to photographs (e.g., stock photos, clip art, studioportraits).	

Production and Printing		Complete
Content Skill Sets		Knowledge/ Performance
1851.33	Identify production/printing terminology.	
1851.34	Manage fonts for distribution and production using various software and techniques.	
1851.35	Provide job specifications for printer.	

Communication and Career Skills

Complete

Content Skill SetsKnowledge/
Performance

1851.36	Demonstrate personal presentation skills (e.g., speaking, listening, writing).	
1851.37	Demonstrate ability to accept and/or give constructive criticism.	
1851.38	Apply communication skills for marketing (e.g., researching, brainstorming, sales techniques).	

Work Environment

Complete

Content Skill SetsKnowledge/
Performance

1851.39	Identify basic tools and equipment.	
1851.40	Maintain a safe and clean work environment.	

Digital Image Manipulation

Complete

Content Skill SetsKnowledge/
Performance

1851.41	Identify image terminology (e.g., raster, vector, continuous tone, half tone, line art).	
1851.42	Identify and explain various file formats (e.g., .pdf, .jpg, .png, .eps).	
1851.43	Identify appropriate resolution for projects.	
1851.44	Manipulate images (e.g., restore, colorcorrect, masking).	

Course Description: This course introduces the student to the knowledge base and technical skills necessary to create and manipulate computer graphics. Areas of study include production, design projects, intermediate processes, digital cameras, animation, and student organizations. Students will demonstrate knowledge and technical expertise in digital editing.

Production		Complete
Content Skill Sets		Knowledge/ Performance
1853.01	Prepress concepts.	
1853.02	Graphic design production skills.	
1853.03	Incorporate photography into graphic design using digital photographic techniques.	
1853.04	Scan and import images and text into graphic designs.	
1853.05	Examine various input and storage devices.	
1853.06	Recognize PDF format.	
1853.07	Produce color separations for both spot and process color (CMYK) design projects.	

Graphic Design		Complete
Content Skill Sets		Knowledge/ Performance
1853.08	Graphic layouts.	
1853.09	Design projects.	
1853.10	Layout a sign.	
1853.11	Design a billboard layout.	
1853.12	Design a logo.	
1853.13	Convert numerical data to charts and graphs.	
1853.14	Layout a package design.	
1853.15	Design a point-of-purchase display.	
1853.16	Retouch photographs using imaging software.	
1853.17	Design a multi-page printed piece that incorporates signatures.	
1853.18	Develop a digital portfolio.	

Intermediate Processes		Complete
Content Skill Sets		Knowledge/ Performance
1853.19	Techniques of digital image editing.	
1853.20	Use image-editing software to adjust brightness, contrast, levels, and color balance.	

1853.21	Incorporate dodging and burning techniques.	
1853.22	Use image editing software to change a color photograph to black and white.	
1853.23	Use a digital airbrush.	

Digital Cameras		Complete
Content Skill Sets		Knowledge/ Performance
1853.24	Use of digital cameras.	
1853.25	Manipulating digital images.	
1853.26	Recognize the features of different types of digital cameras.	
1853.27	Operate a camera and various accessories.	
1853.28	Transfer images to the computer.	
1853.29	Manipulate and organize images transferred from digital cameras.	

Course Description: This course provides the student the opportunity to study advanced concepts and master technical skills in the creation and manipulation of graphics.

Working in the Design Industry		Complete
Content Skill Sets		Knowledge/ Performance
1854.01	Identify the purpose, audience, and audience needs for preparing images.	
1854.02	Determine whether content is relevant to the purpose, audience, and audience needs.	
1854.03	Communicate with colleagues and clients about design plans.	
1854.04	Demonstrate knowledge of techniques for communicating about design plans with peers and clients.	
1854.05	Demonstrate knowledge of basic project management concepts.	
1854.06	Determine the type of copyright, permissions, and licensing required to use specific content.	
1854.07	Identify legal and ethical considerations for using third-party content, such as copyright, permissions, and licensing.	
1854.08	Identify when and how to obtain permission to use images of people and locations.	
1854.09	Demonstrate knowledge of key terminology related to digital images.	
1854.10	Demonstrate knowledge of digital image terminology.	
1854.11	Demonstrate knowledge of how color is created in digital images.	

Project Setup and Interface		Complete
Content Skill Sets		Knowledge/ Performance
1854.12	Create a document with the appropriate settings for web, print, and video.	
1854.13	Set appropriate document settings for printed and onscreen image.	
1854.14	Create a new document preset to reuse for specific project needs.	
1854.15	Identify and manipulate elements of the Photoshop interface.	
1854.16	Organize and customize the workspace.	
1854.17	Configure application preferences.	
1854.18	Use non-printing design tools in the interface to aid in design or workflow.	
1854.19	Navigate a project.	
1854.20	Use rulers.	
1854.21	Use guides and grids.	
1854.22	Import assets into a project.	
1854.23	Open or import images from various devices.	

Organizing Documents

Complete

Content Skill Sets

Knowledge/
Performance

1854.24	Use layers to manage design elements.	
1854.25	Use the Layers panel to modify layers.	
1854.26	Manage layers in a complex project.	
1854.27	Work with multiple layers.	
1854.28	Flatten and merge layers.	
1854.29	Recognize the different types of layers in the Layers panel.	
1854.30	Modify layer visibility using opacity, blending modes, and masks.	
1854.31	Adjust a layer's opacity, blending mode, and fill opacity.	
1854.32	Create, apply, and manipulate masks.	
1854.33	Understand the difference between destructive and nondestructive editing.	
1854.34	Nondestructive editing: Smart Objects, Smart Filters, and adjustment layers.	
1854.35	Destructive editing: painting, adjustments, erasing, and rasterizing.	

Creating and Modifying Visual Elements

Complete

Content Skill Sets

Knowledge/
Performance

1854.36	Use core tools and features to create visual elements.	
1854.37	Create images using a variety of tools.	
1854.38	Modify and edit vector images using a variety of vector tools.	
1854.39	Add and manipulate text using appropriate typographic settings.	
1854.40	Use type tools to add typography to a design.	
1854.41	Adjust character settings in a design.	
1854.42	Adjust paragraph settings in a design.	
1854.43	Convert text to graphics.	
1854.44	Modify and refine selections using various methods.	
1854.45	Make selections using a variety of tools.	
1854.46	Save and load selections.	
1854.47	Transform digital graphics and media.	

Course Description: This course introduces the student to the knowledge base and technical skills in desktop publishing. Areas of study include production skills, design projects, portfolio development, and student organizations. Students will demonstrate knowledge and technical expertise in page layout.

Working in the Design Industry		Complete
Content Skill Sets		Knowledge/ Performance
1855.01	Identify the purpose, audience, and audience needs for preparing images.	
1855.02	Determine whether content is relevant to the purpose, audience, and audience needs.	
1855.03	Communicate with colleagues and clients about design plans.	
1855.04	Demonstrate knowledge of techniques for communicating about design plans with peers and clients.	
1855.05	Demonstrate knowledge of basic project management concepts.	
1855.06	Determine the type of copyright, permissions, and licensing required to use specific content.	
1855.07	Identify legal and ethical considerations for using third-party content, such as copyright, permissions, and licensing.	
1855.08	Identify when and how to obtain permission to use images of people and locations.	
1855.09	Demonstrate an understanding of key terminology related to digital images.	
1855.10	Demonstrate knowledge of digital image terminology.	
1855.11	Demonstrate knowledge of how color is created in digital images.	
1855.12	Demonstrate knowledge of basic design principles and best practices employed in the design industry.	

Project Setup and Interface		Complete
Content Skill Sets		Knowledge/ Performance
1855.13	Create a document with the appropriate settings for web, print, and video.	
1855.14	Set appropriate document settings for printed and onscreen images.	
1855.15	Create document presets to reuse for specific project needs.	
1855.16	Navigate, organize, and customize the application workspace.	
1855.17	Identify and manipulate elements of the Illustrator interface.	
1855.18	Organize and customize the workspace.	
1855.19	Configure application preferences.	
1855.20	Use non-printing design tools in the interface to aid in design or workflow.	
1855.21	Navigate documents.	
1855.22	Use rulers.	
1855.23	Use guides and grids.	
1855.24	Use views and modes to work efficiently with vector graphics.	

Organizing Documents

		Complete
Content Skill Sets		Knowledge/ Performance
1855.25	Use layers to manage design elements.	
1855.26	Use the Layers panel to modify layers.	
1855.27	Manage layers in a complex project.	
1855.28	Work with multiple layers.	
1855.29	Modify layer visibility using opacity and masks.	
1855.30	Adjust a layer's opacity.	
1855.31	Create, apply, and manipulate clipping masks.	

Creating and Modifying Visual Elements

		Complete
Content Skill Sets		Knowledge/ Performance
1855.32	Use core tools and features to create visual elements.	
1855.33	Create images using a variety of tools.	
1855.34	Modify and edit vector images using a variety of vector tools.	
1855.35	Add and manipulate text using appropriate typographic settings.	
1855.36	Use type tools to add typography to a design.	
1855.37	Use appropriate character settings in a design.	
1855.38	Use appropriate paragraph settings in a design.	
1855.39	Convert text to graphics.	
1855.40	Manage text flow across multiple text areas.	
1855.41	Make, manage, and manipulate selections.	
1855.42	Select objects using a variety of tools.	
1855.43	Modify and refine selections using various methods.	

Course Description: This course improves the student’s ability to produce real-world designs for clients. Areas of study include advanced page layout, employability skills, and student organizations. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to graphic design occupations.

Working in the Design Industry		Complete
Content Skill Sets		Knowledge/ Performance
1856.01	Identify the purpose, audience, and audience needs for preparing images.	
1856.02	Determine whether content is relevant to the purpose, audience, and audience needs.	
1856.03	Communicate with colleagues and clients about design plans.	
1856.04	Demonstrate knowledge of techniques for communicating about design plans with peers and clients.	
1856.05	Demonstrate knowledge of basic project management concepts.	
1856.06	Determine the type of copyright, permissions, and licensing required to use specific content.	
1856.07	Identify legal and ethical considerations for using third-party content, such as copyright, permissions, and licensing.	
1856.08	Identify when and how to obtain permission to use images of people and locations.	
1856.09	Demonstrate an understanding of key terminology related to digital images.	
1856.10	Demonstrate knowledge of digital image terminology.	
1856.11	Demonstrate knowledge of how color is created in digital images.	
1856.12	Demonstrate knowledge of basic design principles and best practices employed in the design industry.	

Project Setup and Interface		Complete
Content Skill Sets		Knowledge/ Performance
1856.13	Create a document with the appropriate settings for web, print, and video.	
1856.14	Set appropriate document settings for printed and onscreen images.	
1856.15	Create document presets to reuse for specific project needs.	
1856.16	Navigate, organize, and customize the application workspace.	
1856.17	Identify and manipulate elements of the Illustrator interface.	
1856.18	Organize and customize the workspace.	
1856.19	Configure application preferences.	
1856.20	Use non-printing design tools in the interface to aid in design or workflow.	
1856.21	Navigate documents.	
1856.22	Use rulers.	

1856.23	Use guides and grids.	
1856.24	Use views and modes to work efficiently with vector graphics.	

Organizing Documents		Complete
Content Skill Sets		Knowledge/ Performance
1856.25	Use layers to manage design elements.	
1856.26	Use the Layers panel to modify layers.	
1856.27	Manage layers in a complex project.	
1856.28	Work with multiple layers.	
1856.29	Modify layer visibility using opacity and masks.	
1856.30	Adjust a layer's opacity.	
1856.31	Create, apply, and manipulate clipping masks.	

Creating and Modifying Visual Elements		Complete
Content Skill Sets		Knowledge/ Performance
1856.32	Use core tools and features to create visual elements.	
1856.33	Create images using a variety of tools.	
1856.34	Modify and edit vector images using a variety of vector tools.	
1856.35	Add and manipulate text using appropriate typographic settings.	
1856.36	Use type tools to add typography to a design.	
1856.37	Use appropriate character settings in a design.	
1856.38	Use appropriate paragraph settings in a design.	
1856.39	Convert text to graphics.	
1856.40	Manage text flow across multiple text areas.	
1856.41	Make, manage, and manipulate selections.	
1856.42	Select objects using a variety of tools.	
1856.43	Modify and refine selections using various methods.	

Principles of Page Layout		Complete
Content Skill Sets		Knowledge/ Performance
1856.44	Page set up.	
1856.45	Page layout.	
1856.46	Complete real-world page layout projects for local businesses, industries, and organizations.	
1856.47	Create a complicated business form and prepare it for reproduction.	

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the Graphic Design Program of Study. Areas of study include equipment and materials, computer skills, copyright, design principles, customer specifications, and student organizations. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to graphic design occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Computer Literacy

Complete

Content Skill Sets

Knowledge/
Performance

1857.01 Demonstrate appropriate knowledge, security, and use of software.

1857.02 Apply basic troubleshooting and maintenance skills.

1857.03 Demonstrate file management and storage skills.

Color Theory and Application

Complete

Content Skill Sets

Knowledge/
Performance

1857.04 Identify color theory terminology.

1857.05 Demonstrate the use of color to create impact or effect.

1857.06 Mix colors to obtain shades, tints, or neutrals.

1857.07 Choose and apply appropriate color scheme.

1857.08 Identify correct use of RGB and CMYK colors.

Digital Illustration and Drawing

Complete

Content Skill Sets

Knowledge/
Performance

1857.09 Identify drawing and digital illustration terminology.

1857.10 Identify basic tools and materials (e.g., computer software, pencils, paper).

1857.11 Render drawings to reflect various perspectives (e.g., atmospheric, three point).

1857.12 Utilize different drawing techniques (e.g., lineart, continuous tone, stipple, watercolor).

1857.13 Modify illustrations (e.g., size, color, stroke).

1857.14 Identify ways to import, export, and save images (e.g., scanning, digitizing).

Communication and Career Skills

Complete

Content Skill SetsKnowledge/
Performance

1857.15	Demonstrate personal presentation skills (e.g., speaking, listening, writing).	
1857.16	Demonstrate ability to accept and/or give constructive criticism.	
1857.17	Apply communication skills for marketing (e.g., researching, brainstorming, sales techniques).	

Work Environment

Complete

Content Skill SetsKnowledge/
Performance

1857.18	Identify basic tools and equipment.	
1857.19	Maintain a safe and clean work environment.	

Digital Image Manipulation

Complete

Content Skill SetsKnowledge/
Performance

1857.20	Identify image terminology (e.g., raster, vector, continuous tone, half tone, line art).	
1857.21	Identify and explain various file formats (e.g., .pdf, .jpg, .png, .eps).	
1857.22	Identify appropriate resolution for projects.	
1857.23	Manipulate images (e.g., restore, colorcorrect, masking).	

Course Description: This course introduces the student to basic advertising concepts and advanced layout procedures. Areas of study include demographics, mechanical preparation, vector and raster graphics, and student organizations. Students will demonstrate knowledge and technical expertise in the mechanical preparation of design projects. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to graphic design occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co-curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1859.01	Demonstrate appropriate knowledge, security, and use of software.	

Typography		Complete
Content Skill Sets		Knowledge/ Performance
1859.02	Demonstrate knowledge of typographic terminology.	
1859.03	Identify the anatomy and classification of type.	
1859.04	Calculate type measurements.	
1859.05	Identify and use proofreader's marks.	
1859.06	Diagnose and solve typography problems (e.g., tracking, kerning, readability, legibility).	
1859.07	Manipulate type through character and paragraph formatting.	

Design Literacy and Application		Complete
Content Skill Sets		Knowledge/ Performance
1859.08	Demonstrate knowledge of basic design terminology (e.g., bleed, live area, trim, orientation).	
1859.09	Exhibit knowledge of design elements and principles.	
1859.10	Apply skills of database management and variable data printing.	
1859.11	Demonstrate techniques of 2-D design.	
1859.12	Demonstrate techniques of 3-D design.	
1859.13	Produce project to client specifications.	
1859.14	Describe characteristics of design for different media (e.g., logos, magazines).	

1859.15	Choose appropriate ideas through the visualstages of layout (e.g., thumbnail, rough, comprehensive).	
1859.16	Demonstrate understanding of related math(e.g., proportion, percentages, basic measurements).	
1859.17	Demonstrate ability to solve design problems.	

Digital Illustration and Drawing		Complete
Content Skill Sets		Knowledge/ Performance
1859.18	Identify drawing and digital illustration terminology.	
1859.19	Identify basic tools and materials (e.g.,computer software, pencils, paper).	

Production and Printing		Complete
Content Skill Sets		Knowledge/ Performance
1859.20	Identify production/printing terminology.	
1859.21	Manage fonts for distribution and production using various software and techniques.	
1859.22	Demonstrate proofing and pre-lighting (preparing for output).	
1859.23	Provide job specifications for printer.	
1859.24	Demonstrate knowledge of job flow, various printing, and finishing processes.	
1859.25	Determine what media/medium works best for a project.	
1859.26	Identify media by common size, weight,number, and finish.	

Communication and Career Skills		Complete
Content Skill Sets		Knowledge/ Performance
1859.27	Demonstrate personal presentation skills (e.g., speaking, listening, writing).	
1859.28	Demonstrate ability to accept and/or give constructive criticism.	
1859.29	Apply communication skills for marketing (e.g.,researching, brainstorming, sales techniques).	

Work Environment		Complete
Content Skill Sets		Knowledge/ Performance
1859.30	Identify basic tools and equipment.	
1859.31	Maintain a safe and clean work environment.	

Digital Image Manipulation		Complete
Content Skill Sets		Knowledge/ Performance

1859.32	Identify image terminology (e.g., raster, vector, continuous tone, half tone, line art).	
1859.33	Identify and explain various file formats (e.g., .pdf, .jpg, .png, .eps).	
1859.34	Identify appropriate resolution for projects.	
1859.35	Manipulate images (e.g., restore, color correct, masking).	

Course Description: This course introduces the student to advanced topics in illustration. Areas of study include color theory, proportion, portfolios, and student organizations. Students will demonstrate knowledge and technical expertise in advanced illustration techniques. Emphasis will be placed on personal and professional ethics, and students will explore a variety of career opportunities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to graphic design occupations. Safety instruction is integrated into all activities. Students are encouraged to become active members of Skills USA for additional co- curricular opportunities that enhance student achievement, develop student leadership, and support experiential learning. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Computer Literacy		Complete
Content Skill Sets		Knowledge/ Performance
1861.01	Demonstrate appropriate knowledge, security, and use of software.	
1861.02	Identify legal restrictions.	

Color Theory and Application		Complete
Content Skill Sets		Knowledge/ Performance
1861.03	Identify color theory terminology.	
1861.04	Demonstrate the use of color to create impactor effect.	
1861.05	Mix colors to obtain shades, tints, or neutrals.	
1861.06	Choose and apply appropriate color scheme.	
1861.07	Identify correct use of RGB and CMYK colors.	
1861.08	Identify and utilize Pantone Matching System (PMS).	

Digital Illustration and Drawing		Complete
Content Skill Sets		Knowledge/ Performance
1861.09	Identify drawing and digital illustration terminology.	
1861.10	Identify basic tools and materials (e.g., computer software, pencils, paper).	
1861.11	Render drawings to reflect various perspectives (e.g., atmospheric, three point).	
1861.12	Utilize different drawing techniques (e.g., lineart, continuous tone, stipple, watercolor).	
1861.13	Modify illustrations (e.g., size, color, stroke).	
1861.14	Identify ways to import, export, and save images (e.g., scanning, digitizing).	

Communication and Career Skills

Complete

Content Skill SetsKnowledge/
Performance

1861.15	Demonstrate personal presentation skills (e.g., speaking, listening, writing).	
1861.16	Demonstrate ability to accept and/or give constructive criticism.	
1861.17	Apply communication skills for marketing (e.g., researching, brainstorming, sales techniques).	

Work Environment

Complete

Content Skill SetsKnowledge/
Performance

1861.18	Identify basic tools and equipment.	
1861.19	Maintain a safe and clean work environment.	

Digital Image Manipulation

Complete

Content Skill SetsKnowledge/
Performance

1861.20	Identify image terminology (e.g., raster, vector, continuous tone, half tone, line art).	
1861.21	Identify and explain various file formats (e.g., .pdf, .jpg, .png, .eps).	
1861.22	Identify appropriate resolution for projects.	
1861.23	Manipulate images (e.g., restore, colorcorrect, masking).	

Course Description: This course is designed to introduce the student to the knowledge base and technical skills of the Welding industry. Welding I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets in the fundamentals of Welding such as Welding Safety; Oxyfuel Cutting; and Plasma Arc Cutting. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1862.01	Demonstrate proper and safe use of PPE, Hand tools, and Power equipment.	
1862.02	Identify various Welding hazards and safe practices.	
1862.03	Display familiarity with industrial and OSHA safety standards.	
1862.04	Demonstrate knowledge of oxyfuel safety procedures.	
1862.05	Demonstrate knowledge of arc welding and cutting safety procedures.	

Oxyfuel Cutting (OFC)		Complete
Content Skill Sets		Knowledge/ Performance
1862.06	Identify Oxyfuel cutting principles.	
1862.07	Identify and maintain Oxyfuel equipment.	
1862.08	Assemble and disassemble Oxyfuel equipment.	
1862.09	Handle and store Compressed Gas cylinders.	
1862.10	Cut and form metal with Oxyfuel equipment.	

Arc Cutting Process (Carbon)		Complete
Content Skill Sets		Knowledge/ Performance
1862.11	Identify Arc cutting process principles.	

Arc and Plasma Arc		Complete
Content Skill Sets		Knowledge/ Performance

1862.12	Assemble and disassemble Arc cutting equipment.	
1862.13	Identify and maintain Arc cutting equipment.	
1862.14	Exhibit an understanding of Arc cutting consumables.	
1862.15	Demonstrate appropriate use of Arc cutting equipment.	

Course Description: Welding II will continue to build student skill sets in areas of Air Carbon Arc Cutting and Gouging; Base Metal Preparation; Weld Quality; SMAW-Equipment and Setup; Shielded Metal Arc Electrodes; SMAW-Beads and Fillet Welds; Joint Fit Up and Alignment; SMAW-Groove Welds with Backing; and SMAW-Open V-Groove Welds. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Physical Characteristics and Mechanical Properties of Metals		Complete
Content Skill Sets		Knowledge/ Performance
1863.01	Exhibit understanding of distortion control methods.	

Weld Fit-Up and Quality		Complete
Content Skill Sets		Knowledge/ Performance
1863.02	Identify welding defects and/or discontinuities.	
1863.03	Test Welds using various techniques.	
1863.04	Use standard measuring and layout tools.	
1863.05	Describe Welding industry codes, standards, and procedures.	

Shielded Metal Arc Welding (SMAW)		Complete
Content Skill Sets		Knowledge/ Performance
1863.06	Explain principles of SMAW.	
1863.07	Set up and maintain SMAW equipment.	
1863.08	Use standard measuring and layout tools.	
1863.09	Describe Welding industry codes, standards, and procedures.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
1863.10	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
1863.11	Benefits of Apprenticeship.	
1863.12	Apprenticeship Components and Models.	
1863.13	Businesses and Partners.	
1863.14	Common Apprenticeship Myths.	

Course Description: Welding III will continue to build student skill sets in areas of Welding Symbols; Reading Welding Detail Drawings; Physical Characteristics and Mechanical Properties of Metals; Preheating and Post heating of Metals; GMAW and FCAW-Equipment and Filler Metals; and GMAW and FCAW- Plate. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Welding Symbols and Blueprint Reading		Complete
Content Skill Sets		Knowledge/ Performance
1864.01	Interpret weld and welding symbols.	
1864.02	Read and interpret blueprints and sketches.	

Physical Characteristics and Mechanical Properties of Metals		Complete
Content Skill Sets		Knowledge/ Performance
1864.03	Identify Metals by physical characteristics.	
1864.04	Explain the pre-heating and post-heating processes.	
1864.05	Exhibit understanding of distortion control methods.	
1864.06	Identify basic mechanical properties of metals.	

Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW)		Complete
Content Skill Sets		Knowledge/ Performance
1864.07	Explain the principles of GMAW and FCAW.	
1864.08	Set up and maintain GMAW and FCAW equipment.	
1864.09	Demonstrate selection and application of GMAW and FCAW consumables.	
1864.10	Perform fillet and groove welds on plate in all positions.	

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
1864.11	Apprenticeship used for Exploitation.	
1864.12	Examples of Early Apprenticeships.	
1864.13	Apprenticeship Expansion in the Industrial Revolution.	

Apprenticeship Programs Today**Complete****Content Skill Sets****Knowledge/
Performance**

1864.14 Modern Apprenticeship Programs.

1864.15 Support of Apprenticeship Programs.

Code of Conduct**Complete****Content Skill Sets****Knowledge/
Performance**

1864.16 Simulated Workplace Manual.

Course Description: Welding IV will continue to build student skill sets in areas of GTAW-Equipment and Filler Metals; and GTAW-Plate. Students utilize problem-solving techniques and participate in hands- on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

A Gas Tungsten Arc Welding (GTAW)		Complete
Content Skill Sets		Knowledge/ Performance
1865.01	Explain principles of GTAW Elective Course 1989.	
1865.02	Set up and maintain GTAW equipment.	
1865.03	Demonstrate selection and application of GTAW consumables.	
1865.04	Perform fillet and groove welds on ferrous and nonferrous metals in all positions.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
1865.05	Unions working with Contractors in Construction trades.	
1865.06	Construction Trades Unions in West Virginia with Apprenticeship Programs.	
1865.07	Apprenticeship Opportunities in Construction trades.	
1865.08	Applying for Apprenticeship in the Construction trades.	
1865.09	Pre-Job Training.	
1865.10	Working on the Jobsite.	
1865.11	Working with your Supervisor and Others.	
1865.12	Harassment and Discrimination.	

Are you Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
1865.13	Qualities of a Successful Apprentice.	
1865.14	Interviewing for Apprenticeships in Construction.	
1865.15	Interviewing Tips for Construction Apprenticeships.	
1865.16	Common Interview Questions.	

Course Description: REC 1 includes an introduction to Robotics and to VEX programming. Students utilize problem- solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization, SkillsUSA West Virginia. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1866.01	Use social media appropriately and effectively, in personal and professional situations.	
1866.02	Exhibit flexibility and adaptability.	
1866.03	Demonstrate leadership skills.	
1866.04	Recognize others for their contributions.	
1866.05	Demonstrate group process techniques.	
1866.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1866.07	Exhibit professional practices.	
1866.08	Apply for employment.	
1866.09	Demonstrate employability skills needed to keep a job.	
1866.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1866.11	Exhibit responsibility.	
1866.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1866.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1866.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	

1866.15	Ensure healthful working conditions.	
1866.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1866.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1866.18	Exhibit interest in making the organization more effective and productive.	
1866.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1866.20	Explain the necessity and benefits/disadvantages of organizational change.	
1866.21	Identify ways to reduce or prevent injuries and illness.	
1866.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1866.23	Ensure safe working conditions.	
1866.24	Demonstrate safe use of tools and equipment.	
1866.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1866.26	Participate in group or team discussions.	
1866.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1866.28	Explain the importance of teamwork to the overall operation of the business.	
1866.29	Perform work tasks in a team.	
1866.30	Look for ways to help others.	
1866.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1866.32	Perform math operations using whole numbers, fractions, and percentages.	
1866.33	Gather information.	
1866.34	Provide clear documentation of assignments, goals, and timelines.	
1866.35	Define the problem.	

1866.36	Analyze the problem and identify the solution.	
1866.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1866.38	Identify the company's mission and the individual employee's contribution to that mission.	
1866.39	Interpret organizational policies and procedures.	
1866.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1866.41	Engage in conversations with coworkers, supervisors, and clients.	
1866.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1866.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1866.44	Interpret and comprehend technical and general interest in written material.	
1866.45	Identify how the company functions within the broad world of business, industry, and service.	
1866.46	Identify ways in which the individual employee represents the organization.	
1866.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1866.48	Identify aspects of owning or starting up a small business.	
1866.49	Share information using a range of appropriate communications technologies.	
1866.50	Explain the importance of using data to improve company productivity.	

Course Description: In REC 2, students build and program the BaseBot, then use it to conduct experiments demonstrating physics and mechanical properties, adding sensors and mechanism. REC 1 concludes with a capstone project featuring competitive instructional strategies. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization, SkillsUSA West Virginia. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1867.01	Use social media appropriately and effectively, in personal and professional situations.	
1867.02	Exhibit flexibility and adaptability.	
1867.03	Demonstrate leadership skills.	
1867.04	Recognize others for their contributions.	
1867.05	Demonstrate group process techniques.	
1867.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1867.07	Exhibit professional practices.	
1867.08	Apply for employment.	
1867.09	Demonstrate employability skills needed to keep a job.	
1867.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1867.11	Exhibit responsibility.	
1867.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1867.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1867.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1867.15	Ensure healthful working conditions.	
1867.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1867.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1867.18	Exhibit interest in making the organization more effective and productive.	
1867.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1867.20	Explain the necessity and benefits/disadvantages of organizational change.	
1867.21	Identify ways to reduce or prevent injuries and illness.	
1867.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1867.23	Ensure safe working conditions.	
1867.24	Demonstrate safe use of tools and equipment.	
1867.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1867.26	Participate in group or team discussions.	
1867.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1867.28	Explain the importance of teamwork to the overall operation of the business.	
1867.29	Perform work tasks in a team.	
1867.30	Look for ways to help others.	
1867.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance

1867.32	Perform math operations using whole numbers, fractions, and percentages.	
1867.33	Gather information.	
1867.34	Provide clear documentation of assignments, goals, and timelines.	
1867.35	Define the problem.	
1867.36	Analyze the problem and identify the solution.	
1867.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1867.38	Identify the company's mission and the individual employee's contribution to that mission.	
1867.39	Interpret organizational policies and procedures.	
1867.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1867.41	Engage in conversations with coworkers, supervisors, and clients.	
1867.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1867.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1867.44	Interpret and comprehend technical and general interest in written material.	
1867.45	Identify how the company functions within the broad world of business, industry, and service.	
1867.46	Identify ways in which the individual employee represents the organization.	
1867.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1867.48	Identify aspects of owning or starting up a small business.	
1867.49	Share information using a range of appropriate communications technologies.	
1867.50	Explain the importance of using data to improve company productivity.	

Course Description: In REC 3, students continue with deeper engineering topics, building more advanced robots. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization, SkillsUSA West Virginia. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1868.01	Use social media appropriately and effectively, in personal and professional situations.	
1868.02	Exhibit flexibility and adaptability.	
1868.03	Demonstrate leadership skills.	
1868.04	Recognize others for their contributions.	
1868.05	Demonstrate group process techniques.	
1868.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1868.07	Exhibit professional practices.	
1868.08	Apply for employment.	
1868.09	Demonstrate employability skills needed to keep a job.	
1868.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1868.11	Exhibit responsibility.	
1868.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1868.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1868.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	

1868.15	Ensure healthful working conditions.	
1868.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1868.17	Apply previous learning to situations where problems must be solved, or decisions made quickly.	
1868.18	Exhibit interest in making the organization more effective and productive.	
1868.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1868.20	Explain the necessity and benefits/disadvantages of organizational change.	
1868.21	Identify ways to reduce or prevent injuries and illness.	
1868.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1868.23	Ensure safe working conditions.	
1868.24	Demonstrate safe use of tools and equipment.	
1868.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1868.26	Participate in group or team discussions.	
1868.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1868.28	Explain the importance of teamwork to the overall operation of the business.	
1868.29	Perform work tasks in a team.	
1868.30	Look for ways to help others.	
1868.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1868.32	Perform math operations using whole numbers, fractions, and percentages.	
1868.33	Gather information.	
1868.34	Provide clear documentation of assignments, goals, and timelines.	
1868.35	Define the problem.	

1868.36	Analyze the problem and identify the solution.	
1868.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1868.38	Identify the company's mission and the individual employee's contribution to that mission.	
1868.39	Interpret organizational policies and procedures.	
1868.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1868.41	Engage in conversations with coworkers, supervisors, and clients.	
1868.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1868.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1868.44	Interpret and comprehend technical and general interest in written material.	
1868.45	Identify how the company functions within the broad world of business, industry, and service.	
1868.46	Identify ways in which the individual employee represents the organization.	
1868.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1868.48	Identify aspects of owning or starting up a small business.	
1868.49	Share information using a range of appropriate communications technologies.	
1868.50	Explain the importance of using data to improve company productivity.	

Course Description: In REC 4, students are engaged in a Capstone project: Bucket Battle. Students utilize problem- solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of a student organization, SkillsUSA West Virginia. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1869.01	Use social media appropriately and effectively, in personal and professional situations.	
1869.02	Exhibit flexibility and adaptability.	
1869.03	Demonstrate leadership skills.	
1869.04	Recognize others for their contributions.	
1869.05	Demonstrate group process techniques.	
1869.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1869.07	Exhibit professional practices.	
1869.08	Apply for employment.	
1869.09	Demonstrate employability skills needed to keep a job.	
1869.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1869.11	Exhibit responsibility.	
1869.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1869.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1869.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	

1869.15	Ensure healthful working conditions.	
1869.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1869.17	Apply previous learning to situations where problems must be solved, or decisions made quickly.	
1869.18	Exhibit interest in making the organization more effective and productive.	
1869.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1869.20	Explain the necessity and benefits/disadvantages of organizational change.	
1869.21	Identify ways to reduce or prevent injuries and illness.	
1869.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1869.23	Ensure safe working conditions.	
1869.24	Demonstrate safe use of tools and equipment.	
1869.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1869.26	Participate in group or team discussions.	
1869.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1869.28	Explain the importance of teamwork to the overall operation of the business.	
1869.29	Perform work tasks in a team.	
1869.30	Look for ways to help others.	
1869.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1869.32	Perform math operations using whole numbers, fractions, and percentages.	
1869.33	Gather information.	
1869.34	Provide clear documentation of assignments, goals, and timelines.	
1869.35	Define the problem.	

1869.36	Analyze the problem and identify the solution.	
1869.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1869.38	Identify the company's mission and the individual employee's contribution to that mission.	
1869.39	Interpret organizational policies and procedures.	
1869.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1869.41	Engage in conversations with coworkers, supervisors, and clients.	
1869.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1869.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1869.44	Interpret and comprehend technical and general interest in written material.	
1869.45	Identify how the company functions within the broad world of business, industry, and service.	
1869.46	Identify ways in which the individual employee represents the organization.	
1869.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1869.48	Identify aspects of owning or starting up a small business.	
1869.49	Share information using a range of appropriate communications technologies.	
1869.50	Explain the importance of using data to improve company productivity.	

Course Description: This course introduces the student to the knowledge base and technical skills for entry level skills in industrial Electrical Maintenance. Areas of study include basic electrical theory and calculations, electrical tools, instruments and safety, electrical symbols and diagrams, industrial power and control circuits, electrical equipment and devices, electrical motors, and an introduction to programmable logic controllers, as applied in industrial locations.

Basic Electrical Theory and Calculations		Complete
Content Skill Sets		Knowledge/ Performance
1871.01	Select proper settings and ranges, interpret values indicated on digital multimeters (DMM).	
1871.02	Differentiate between alternating current and direct current and identify common applications for each.	
1871.03	Explain the difference between conductors and insulators.	
1871.04	Explain the difference between digital and analog meters.	
1871.05	Explain how voltage, current, and resistance are related to each other.	
1871.06	Calculate electrical values in series and parallel circuits.	
1871.07	Exhibit the ability to safely and correctly use electrical instruments to measure voltage and resistance.	
1871.08	Find the total amount of resistance in a series, parallel, and s series-parallel circuit.	
1871.09	Calculate, using Kirchhoff's voltage Law, the voltage drop in series, parallel, and s series-parallel circuit.	
1871.10	Test faulty equipment to diagnose malfunctions using test equipment or software.	
1871.11	Calibrate testing instruments and installed or repaired equipment to prescribed specifications.	

Basic Electrical Safety in Industrial Locations		Complete
Content Skill Sets		Knowledge/ Performance
1871.12	Explain the purpose and history of the National Electric Code (NEC).	
1871.13	Describe the layout and how to navigate the NEC.	
1871.14	Explain the difference between equipment grounding and system grounding as required by the NEC.	
1871.15	Discuss the purpose and operation of a Ground Fault Circuit Interrupter (GFCI).	
1871.16	Describe voltage ratings of conductors and cables.	
1871.17	Use the tables in the NEC to determine the ampacity of a conductor.	
1871.18	Differentiate between power and control circuits on electrical diagrams.	
1871.19	Study blueprints, schematics, manuals, or other specifications to determine installation procedures.	

Industrial Power and Control Circuits

Industrial Power and Control Circuits		Complete
Content Skill Sets		Knowledge/ Performance
1871.20	Explain the (NEC) requirements concerning wiring devices.	
1871.21	State the functions of limit switches and relays.	
1871.22	List voltage levels commonly used in industrial locations.	
1871.23	Calculate and select service-entrance equipment.	
1871.24	Explain basic transformer action.	
1871.25	Explain the NEC requirements for grounding separately derived systems, including transformers and generators.	
1871.26	Discuss the differences between single-phase, three-phase, and direct current power circuits.	
1871.27	Compare and contrast manual and automatic control circuits and describe the applications for each.	
1871.28	Assess the operation and application of solenoids.	
1871.29	Explain the purpose of Programmable Logic Controllers (PLC) and their applications in industrial locations.	
1871.30	Identify the component parts of a PLC system.	
1871.31	Explain how to program and trouble shoot PLC's.	
1871.32	Explain the purpose and application of an electric coil.	
1871.33	Study blueprints, schematics, manuals, or other specifications to determine installation procedures.	

Electrical Motors

Electrical Motors		Complete
Content Skill Sets		Knowledge/ Performance
1871.34	Explain the following terms that are associated with electrical motors: duty, full-load amps, thermal cutout, overcurrent, overload, power factor, rated full-load speed, rated horsepower, and thermal protector.	
1871.35	Describe how rated voltage of a motor differs from the system voltage.	
1871.36	Explain how the direction and rotation of a DC motor is changed.	
1871.37	Describe how to connect a dual-voltage motor for operation and the methods used to reverse rotation.	
1871.38	Explain how direction in a three-phase motor is reversed.	
1871.39	Describe how torque is developed in an inductive motor.	
1871.40	Describe the methods for determining various motor connections.	
1871.41	Repair, rewire, and troubleshoot electrical systems.	
1871.42	Repair or adjust equipment, or defective components.	
1871.43	Assemble, install, or repair wiring, electrical or electronic components.	
1871.44	order parts, supplies, and equipment from catalogs and suppliers, or obtain them from storerooms.	

Course Description: This course introduces the student to the knowledge base and technical skills for entry level skills in Industrial Maintenance. Areas of study include workplace safety, measurement and calculation, tools, fasteners, lubrication and bearings, mechanical and belt drives, and mechanical alignment and vibration. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Machinery and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
1873.01	Disassemble, repair, and reassemble machinery/equipment.	
1873.02	Maintain operating condition and perform preventive maintenance of machinery/equipment.	
1873.03	Identify and troubleshoot component defects and malfunctions.	
1873.04	Test operation of newly repaired machinery/equipment.	
1873.05	Analyze test results, machine error messages, and information from operators in order to diagnose machinery/equipment problems.	
1873.06	Maintain record of repairs and maintenance performed.	

Tools and Safety		Complete
Content Skill Sets		Knowledge/ Performance
1873.07	Select and differentiate appropriate use of various hand tools.	
1873.08	Demonstrate appropriate care of hand tools.	
1873.09	Identify and safely use large machine tools, including lathes, mills, hoists, rigging equipment, and presses.	
1873.10	Demonstrate understanding of lock-out/tag-out procedures.	
1873.11	Exhibit understanding of shop safety.	

Blueprints and Schematics		Complete
Content Skill Sets		Knowledge/ Performance
1873.12	Interpret various lines.	
1873.13	Exhibit knowledge of legends.	
1873.14	Interpret blueprint and schematic components.	
1873.15	Interpret title block information.	
1873.16	Demonstrate knowledge of views, angles, and tolerances.	

Course Description: This course introduces the student to the knowledge base and technical skills related to industrial Hydraulic and Pneumatic Systems. Areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Hydraulics and Pneumatics		Complete
Content Skill Sets		Knowledge/ Performance
1875.01	Interpret basic hydraulic and pneumatic symbols.	
1875.02	Apply knowledge of hydraulic and pneumatic components.	
1875.03	Interpret hydraulic and pneumatic principles.	

Course Description: Personal hobbyists, police, fire and rescue personnel, engineers, real estate agents, photographers, roofers and other professionals are using unmanned aerial systems (UAS) for tasks ranging from racing and photography to surveillance and damage assessment. During this course, highly qualified UAS curriculum provide industry-leading classroom training and prepare drone pilots for the Part 107 Drone License exam. Topics include regulations, airspace, weather, loading and performance, and operations.

Notes: [Certificated Remote Pilots including Commercial Operators \(faa.gov\)](https://www.faa.gov)

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1887.01	Use social media appropriately and effectively, in personal and professional situations.	
1887.02	Exhibit flexibility and adaptability.	
1887.03	Demonstrate leadership skills.	
1887.04	Recognize others for their contributions.	
1887.05	Demonstrate group process techniques.	
1887.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1887.07	Exhibit professional practices.	
1887.08	Apply for employment.	
1887.09	Demonstrate employability skills needed to keep a job.	
1887.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1887.11	Exhibit responsibility.	
1887.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1887.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance

1887.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1887.15	Ensure healthful working conditions.	
1887.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1887.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1887.18	Exhibit interest in making the organization more effective and productive.	
1887.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1887.20	Explain the necessity and benefits/disadvantages of organizational change.	
1887.21	Identify ways to reduce or prevent injuries and illness.	
1887.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1887.23	Ensure safe working conditions.	
1887.24	Demonstrate safe use of tools and equipment.	
1887.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1887.26	Participate in group or team discussions.	
1887.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1887.28	Explain the importance of teamwork to the overall operation of the business.	
1887.29	Perform work tasks in a team.	
1887.30	Look for ways to help others.	
1887.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1887.32	Perform math operations using whole numbers, fractions, and percentages.	
1887.33	Gather information.	
1887.34	Provide clear documentation of assignments, goals, and timelines.	

1887.35	Define the problem.	
1887.36	Analyze the problem and identify the solution.	
1887.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1887.38	Identify the company's mission and the individual employee's contribution to that mission.	
1887.39	Interpret organizational policies and procedures.	
1887.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1887.41	Engage in conversations with coworkers, supervisors, and clients.	
1887.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1887.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1887.44	Interpret and comprehend technical and general interest in written material.	
1887.45	Identify how the company functions within the broad world of business, industry, and service.	
1887.46	Identify ways in which the individual employee represents the organization.	
1887.47	Apply industry quality standards and practices.	

Accountability		Complete
Content Skill Sets		Knowledge/ Performance
1887.48	Identify aspects of owning or starting up a small business.	
1887.49	Share information using a range of appropriate communications technologies.	
1887.50	Explain the importance of using data to improve company productivity.	

Course Description: UVU Small UAV Ground School which consists of the following topics: Checklists, General characteristics, Dimensions & weight, Motors, Propellers, Electronic speed controls, Wireless links, Fuel/Flight, Battery, Flight Parameters, Limitations, Emergency Procedures, Normal procedures, Performance Flight times & wireless transmission, Weight and balance, Air Vehicle Systems Description Handling, service and maintenance.

Notes: [Certificated Remote Pilots including Commercial Operators \(faa.gov\)](http://faa.gov)

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
1888.01	Use social media appropriately and effectively, in personal and professional situations.	
1888.02	Exhibit flexibility and adaptability.	
1888.03	Demonstrate leadership skills.	
1888.04	Recognize others for their contributions.	
1888.05	Demonstrate group process techniques.	
1888.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
1888.07	Exhibit professional practices.	
1888.08	Apply for employment.	
1888.09	Demonstrate employability skills needed to keep a job.	
1888.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
1888.11	Exhibit responsibility.	
1888.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
1888.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
1888.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
1888.15	Ensure healthful working conditions.	
1888.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
1888.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
1888.18	Exhibit interest in making the organization more effective and productive.	
1888.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
1888.20	Explain the necessity and benefits/disadvantages of organizational change.	
1888.21	Identify ways to reduce or prevent injuries and illness.	
1888.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
1888.23	Ensure safe working conditions.	
1888.24	Demonstrate safe use of tools and equipment.	
1888.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
1888.26	Participate in group or team discussions.	
1888.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
1888.28	Explain the importance of teamwork to the overall operation of the business.	
1888.29	Perform work tasks in a team.	
1888.30	Look for ways to help others.	
1888.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
1888.32	Perform math operations using whole numbers, fractions, and percentages.	
1888.33	Gather information.	
1888.34	Provide clear documentation of assignments, goals, and timelines.	
1888.35	Define the problem.	
1888.36	Analyze the problem and identify the solution.	
1888.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
1888.38	Identify the company's mission and the individual employee's contribution to that mission.	
1888.39	Interpret organizational policies and procedures.	
1888.40	Apply management techniques.	

Company Meetings		Complete
Content Skill Sets		Knowledge/ Performance
1888.41	Engage in conversations with coworkers, supervisors, and clients.	
1888.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
1888.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
1888.44	Interpret and comprehend technical and general interest in written material.	
1888.45	Identify how the company functions within the broad world of business, industry, and service.	
1888.46	Identify ways in which the individual employee represents the organization.	
1888.47	Apply industry quality standards and practices.	

Accountability

Complete

Content Skill Sets

**Knowledge/
Performance**

1888.48	Identify aspects of owning or starting up a small business	
1888.49	Share information using a range of appropriate communications technologies	
1888.50	Explain the importance of using data to improve company productivity	

Course Description: This course introduces the students to basic robotic skills necessary for operation, programming, root cause system troubleshooting, recovery and efficient teach pendant navigation. Students learn core robotic concepts such as coordinate systems, tool center point verification, program, macro selection and program flow. Students will gain hands-on experience with Fanuc’s RJ-3, RJ3iB, R30iA and R30iB controllers. Following completion of this course, students will understand basic techniques for improving and validating cycle time.

Robot Safety and Safety Devices		Complete
Content Skill Sets		Knowledge/ Performance
1889.1	Demonstrate knowledge of internal robot safety devices and functions	
1889.2	Demonstrate knowledge of external safety devices	

Robot Systems and Components		Complete
Content Skill Sets		Knowledge/ Performance
1889.3	Identify teach pendant features and functions	
1889.4	Demonstrate knowledge of function of robot controller	
1889.5	Demonstrate knowledge of function of end-of-arm tool (EOAT)	
1889.6	Demonstrate knowledge of axis configuration and functions	

Initial Installation and Start Up		Complete
Content Skill Sets		Knowledge/ Performance
1889.7	Prepare robot for installation and start up	
1889.8	Determine and perform various start up methods	
1889.9	Perform software setup	

Basic Robot Operations Using Teach Pendant		Complete
Content Skill Sets		Knowledge/ Performance
1889.10	Jog the robot using teach pendant	
1889.11	Master and re-master robot	
1889.12	Identify common keys in teach pendant	
1889.13	Setup robot coordinate frames	
1889.14	Identify basic error and fault recovery	

Basic Robot Programming		Complete
Content Skill Sets		Knowledge/ Performance
1889.15	Create various robot programs	
1889.16	Identify variables to include in motion program	
1889.17	Plan a motion path	
1889.18	Program inputs/outputs	
1889.19	Program non-motion logic structures	
1889.20	Program Macros	

Program File Manipulations		Complete
Content Skill Sets		Knowledge/ Performance
1889.20	Backup individual and system files	
1889.21	Restore individual and system files	
1889.22	Perform image backup and restore	

Robot Integration		Complete
Content Skill Sets		Knowledge/ Performance
1889.23	Establish communication to peripheral devices	
1889.24	Configure input/output	
1889.25	Set end-of-arm tool parameters	

Troubleshoot System Errors		Complete
Content Skill Sets		Knowledge/ Performance
1889.26	Troubleshoot configuration errors	
1889.27	Troubleshoot dual check safety (DCS) errors	

Simulation		Complete
Content Skill Sets		Knowledge/ Performance
1889.28	Determine the function and use of simulations	
1889.29	Demonstrate knowledge of simulation screen layout	
1889.30	Prepare simulation model robot	
1889.31	Jog the robot	

1889.32	Define parts and fixtures in simulation	
1889.33	Create robot TP program for simulation	
1889.34	Create a simulation	
1889.35	Execute simulation program	
1889.36	Match real cell to Roboguide	
1889.37	Transfer to and from robot	

NOTES:

[NOCTI FANUC Partner Blueprint-FCR-01 FANUC Certified Robot - Operator 1 \(fanucamerica.com\)](https://www.fanucamerica.com)

Course Description: This course introduces the Students to valuable knowledge of robot communication methods, inputs and output types and program instructions that are critical for operation and troubleshooting. Our course also covers robot mastering verification, mastering and calibration method, file utilities, backup & restore functions.

Robot Safety and Safety Devices		Complete
Content Skill Sets		Knowledge/ Performance
1890.1	Demonstrate knowledge of internal robot safety devices and functions	
1890.2	Demonstrate knowledge of external safety devices	

Robot Systems and Components		Complete
Content Skill Sets		Knowledge/ Performance
1890.3	Identify teach pendant features and functions	
1890.4	Demonstrate knowledge of function of robot controller	
1890.5	Demonstrate knowledge of function of end-of-arm tool (EOAT)	
1890.6	Demonstrate knowledge of axis configuration and functions	

Initial Installation and Start Up		Complete
Content Skill Sets		Knowledge/ Performance
1890.7	Prepare robot for installation and start up	
1890.8	Determine and perform various start up methods	
1890.9	Perform software setup	

Basic Robot Operations Using Teach Pendant		Complete
Content Skill Sets		Knowledge/ Performance
1890.10	Jog the robot using teach pendant	
1890.11	Master and re-master robot	
1890.12	Identify common keys in teach pendant	
1890.13	Setup robot coordinate frames	
1890.14	Identify basic error and fault recovery	

Basic Robot Programming		Complete
Content Skill Sets		Knowledge/ Performance
1890.15	Create various robot programs	
1890.16	Identify variables to include in motion program	
1890.17	Plan a motion path	
1890.18	Program inputs/outputs	
1890.19	Program non-motion logic structures	
1890.20	Program Macros	

Program File Manipulations		Complete
Content Skill Sets		Knowledge/ Performance
1890.20	Backup individual and system files	
1890.21	Restore individual and system files	
1890.22	Perform image backup and restore	

Robot Integration		Complete
Content Skill Sets		Knowledge/ Performance
1890.23	Establish communication to peripheral devices	
1890.24	Configure input/output	
1890.25	Set end-of-arm tool parameters	

Troubleshoot System Errors		Complete
Content Skill Sets		Knowledge/ Performance
1890.26	Troubleshoot configuration errors	
1890.27	Troubleshoot dual check safety (DCS) errors	

Simulation		Complete
Content Skill Sets		Knowledge/ Performance
1890.28	Determine the function and use of simulations	
1890.29	Demonstrate knowledge of simulation screen layout	
1890.30	Prepare simulation model robot	
1890.31	Jog the robot	

1890.32	Define parts and fixtures in simulation	
1890.33	Create robot TP program for simulation	
1890.34	Create a simulation	
1890.35	Execute simulation program	
1890.36	Match real cell to Roboguide	
1890.37	Transfer to and from robot	

NOTES:

[NOCTI FANUC Partner Blueprint-FCR-01 FANUC Certified Robot - Operator 1 \(fanucamerica.com\)](https://www.fanucamerica.com)

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Machine Tool Technology Program of Study. Incorporated into this course are fundamentals related to high performance engine machining skills necessary for a career in a machine shop. This course is recommended as an Elective in Machine Tool Technology.

High Performance Engines		Complete
Content Skill Sets		Knowledge/ Performance
1901.01	How to identify and evaluate different types of high performance engines.	
1901.02	Evaluate engine components for wear.	
1901.03	Analyze hardness of valve.	
1901.04	Calculate the new face angles to which the valve should be machined.	
1901.05	Assess the bore size to which the cylinder should be honed.	
1901.06	Hone the cylinder depending on usage.	
1901.07	Recondition and resize rods.	
1901.08	Bore out valve guides, install new guides and ream to the appropriate size for valve.	
1901.09	Resurface cylinder head to appropriate finish per application.	
1901.10	Inspect crankshaft for cracks, pits, abrasions and the polish or grind depending on condition of crankshaft.	
1901.11	Determine and install camshaft according to application.	
1901.12	Evaluate passages and restrictions in oiling systems of motor.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Machine Tool Technology Program of Study. Incorporated into this course are elements of advanced measuring, drill press, metal lathe, and milling machine operations skills necessary for a career in machine tool technology. This course is recommended as an Elective in Machine Tool Technology.

Measuring		Complete
Content Skill Sets		Knowledge/ Performance
1902.01	Advanced measuring skills and machining techniques.	
1902.02	Properly use measuring equipment.	
1902.03	Demonstrate usage of an inch based inside and outside vernier micrometer.	
1902.04	Calculate dimensions and tolerances using knowledge of mathematics and instruments such as micrometers and vernier calipers.	

Drill Press Operations		Complete
Content Skill Sets		Knowledge/ Performance
1902.05	Operating a drill press and its applications.	
1902.06	Select, mount and secure jigs and fixtures for a drill press.	
1902.07	Perform tapping and boring operations on a drill press.	

Metal Lathe Operations		Complete
Content Skill Sets		Knowledge/ Performance
1902.08	Operating a metal lathe and its applications.	
1902.09	Mount work in independent lathe chuck, face workpiece and center drill workpiece.	
1902.10	Perform set-up using dial indicator to measure offsets on a lathe.	
1902.11	Perform a variety of lathe operations.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Machine Tool Technology industry. In the Fundamentals of Machine Tool Technology class areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Organization and Shop Safety Practices		Complete
Content Skill Sets		Knowledge/ Performance
1903.01	Demonstrate safe work habits and operating procedures.	
1903.02	Clean and maintain personal work area and equipment.	
1903.03	Select and appropriately use cutting fluids.	
1903.04	Identify and appropriately use Personal Protective Equipment (PPE).	
1903.05	Identify environmental and safety considerations established by the EPA, OSHA, and listed in SDS publications.	

Measurement and Inspection		Complete
Content Skill Sets		Knowledge/ Performance
1903.06	Identify, select, and calibrate precision and semi-precision measuring tools.	
1903.07	Measure workpiece to verify compliance with print specifications.	

Metallurgical Processes and Heat Treating		Complete
Content Skill Sets		Knowledge/ Performance
1903.08	Identify the properties and characteristics of common metals and their effect on machinability.	
1903.09	Identify the AISI/SAE and UNS steel identification systems.	
1903.10	Identify heat treating processes and objectives.	

Blueprint Interpretation and Process Planning		Complete
Content Skill Sets		Knowledge/ Performance
1903.11	Interpret blueprints including geometric dimensioning and tolerancing (GD&T) symbols.	
1903.12	Develop an order of operations (process plan) based on blueprint specifications.	

Layout and Benchwork		Complete
Content Skill Sets		Knowledge/ Performance
1903.13	Identify and appropriately use hand tools.	
1903.14	Identify and safely use power hand tools.	
1903.15	Perform semi-precision and precision layout.	

Drill Press		Complete
Content Skill Sets		Knowledge/ Performance
1903.16	Identify parts and preventive maintenance of a drill press.	
1903.17	Determine appropriate tooling and workholding devices.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Machine Tool Technology Program of Study. Incorporated into this course are elements of advanced lathe, milling machine, and CNC operations necessary for a career in machine tool technology. This course is recommended as an Elective in Machine Tool Technology.

Advanced Lathe Operations		Complete
Content Skill Sets		Knowledge/ Performance
1906.01	Measuring skills needed for the machine tool industry.	
1906.02	Perform measuring skills using a vernier protractor.	
1906.03	Layout a hole pattern using dividers.	

Advanced Milling Machine Operations		Complete
Content Skill Sets		Knowledge/ Performance
1906.04	Operate a metal lathe.	
1906.05	Counter bore hole in a work piece using a boring tool.	
1906.06	Cut a groove in a work piece.	
1906.07	Machine an external taper using a taper attachment.	
1906.08	Set-up a follower rest to support a long work piece.	
1906.09	Machine internal and external snap-ring grooves.	

Milling Machine		Complete
Content Skill Sets		Knowledge/ Performance
1906.10	Operate a milling machine.	
1906.11	End mill opposing key seats in work piece.	
1906.12	Drill equally spaced holes on a bolt circle using a rotary table.	

Course Description: Fundamentals of Machine Processes will continue to build student skills in areas such as intermediate hand tools, power tools, measuring tools, vertical band saw, surface grinding, metal lathe operations, and milling machine operations. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Layout and Benchwork		Complete
Content Skill Sets		Knowledge/ Performance
1905.01	Grind and shape tools using a pedestal/bench grinder.	

Band Saw Machines		Complete
Content Skill Sets		Knowledge/ Performance
1905.02	Identify parts and preventive maintenance of a band saw.	
1905.03	Explain safe principles of operation.	
1905.04	Set up and perform band saw machine operations.	

Lathes		Complete
Content Skill Sets		Knowledge/ Performance
1905.05	Grind and form lathe tools.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Machine Tool Technology Program of Study. Incorporated into this course are elements of advanced lathe, milling machine, and CNC operations necessary for a career in machine tool technology. This course is recommended as an Elective in Machine Tool Technology.

Advanced Lathe Operations		Complete
Content Skill Sets		Knowledge/ Performance
1906.01	Advanced lathe operations.	
1906.02	Cut internal taper surface using the compound rest.	
1906.03	Chase internal right hand and left-hand acme-threads.	
1906.04	Chase internal pipe threads.	

Advanced Milling Machine Operations		Complete
Content Skill Sets		Knowledge/ Performance
1906.05	Advanced milling machine operations.	
1906.06	Machine a t-nut.	
1906.07	Boring holes in a work piece.	
1906.08	Advanced machining operations using an indexing head.	

Advanced CNC Machining		Complete
Content Skill Sets		Knowledge/ Performance
1906.09	Advanced CNC machining processes.	
1906.10	Contrast and compare parts of CNC equipment and describe how it operates.	
1906.11	Demonstrate set-up procedure for and properly operate CNC equipment.	
1906.12	Calculate CNC programming geometry problems.	
1906.13	Create CNC programs using g and m codes.	
1906.14	Create incremental and absolute CNC programs.	
1906.15	Formulate angles for CNC program.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Machine Tool Operations. Areas of study include grinding techniques, lathe operations, milling operations, and CNC machining. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Lathes		Complete
Content Skill Sets		Knowledge/ Performance
1907.01	Identify parts and preventive maintenance of a lathe.	
1907.02	Explain safe principles of operation.	
1907.03	Select and maintain appropriate tools.	
1907.04	Calculate appropriate cutting speed, feed rate, and depth of cut.	
1907.05	Grind and form lathe tools.	
1907.06	Demonstrate knowledge of various workholding methods (e.g., independent and universal chucks, collets, faceplate, between centers, steady and follower rests).	
1907.07	Set up and perform lathe machine operations (e.g., turning, boring, threading, taper turning, knurling, grooving and cut-off, drilling and tapping, _ling, polishing).	
1907.08	Identify appropriate uses for carbide inserts.	

Milling Machines		Complete
Content Skill Sets		Knowledge/ Performance
1907.09	Identify parts and preventive maintenance of a mill.	
1907.10	Explain safe principles of operation.	
1907.11	Select and maintain appropriate tools.	
1907.12	Calculate appropriate cutting speed, feed rate, and depth of cut.	
1907.13	Explain various workholding methods (e.g., mill vise, table set-ups, angle plates, indexing heads, v-blocks).	
1907.14	Set up milling machines (e.g., head alignment, vise alignment, tool holder selection, establishing a part zero, set DRO use).	
1907.15	Perform milling operations (e.g., pocketing, slotting, hole-making, peripheral and face milling).	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Machine Tool Technology Program of Study. Incorporated into this course are elements of advanced machining operations and program creation skills necessary for a career in machine tool technology. This course is recommended as an Elective in Machine Tool Technology.

Machining Operations		Complete
Content Skill Sets		Knowledge/ Performance
1906.01	Advanced machining operations.	
1906.02	Demonstrate advanced programming to create parts.	
1906.03	Create programs using row hole pattern canned cycles.	
1906.04	Create programs using pocket canned cycles.	
1906.05	Create incremental and absolute programs.	
1906.06	Create engraving programs.	
1906.07	Create programs using bolt hole pattern canned cycles.	
1906.08	Set up and operate computer-controlled machines or robots to perform one or more machine functions on plastic or metal workpieces.	
1906.09	Monitor machine operation and control panel displays and compare readings to specifications to detect malfunctions.	
1906.10	Implement changes to machine programs and enter new specifications using computers.	
1906.11	Modify cutting programs to account for problems encountered during operation and save modified programs.	

Course Description: Metal Trades Processes and Applications will continue to build student skills in areas of power saw operations, metal lathe operations, milling machine operations, and CNC machining operations. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Surface Grinding		Complete
Content Skill Sets		Knowledge/ Performance
1909.01	Identify parts and preventive maintenance of a surface grinder.	
1909.02	Select appropriate grinding wheel.	
1909.03	Explain safe principles of operation (e.g., wheel mounting and dressing, ring testing, workholding, grinding parallel and perpendicular surfaces).	

Computer Numerical Control (CNC) Programming, Preparation, Operations		Complete
Content Skill Sets		Knowledge/ Performance
1907.04	Demonstrate knowledge of the axis and coordinate systems.	
1907.05	Read and write basic G and M codes.	
1907.06	Perform basic setup and operation for CNC lathe (e.g., work offset, tool offset, workholding devices, toolholding devices).	
1907.07	Perform basic setup and operation for CNC mill (e.g., work offset, tool offset, workholding, devices, toolholding devices).	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Block Laying. Areas of study include block foundation, concrete block and block leads. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to Block Laying.

Block Foundations		Complete
Content Skill Sets		Knowledge/ Performance
1911.01	Constructing a block foundation.	
1911.02	Show how to pin corners for a block foundation.	
1911.03	Estimate materials for a foundation project.	
1911.04	Layout, bond, build and waterproof a foundation.	
1911.05	Install wire reinforcement and lintels in a block wall.	
1911.06	Explain terms associated with laying block.	
1911.07	Demonstrate methods of putting up a line.	
1911.08	Write a description of laying block leads accurately.	
1911.09	Build an outside and inside corner lead several courses high.	

Special Applications		Complete
Content Skill Sets		Knowledge/ Performance
1911.10	Control joints, using masonry saw, metal door frames, and windows and bond beam installation.	
1911.11	Build a block partition wall with control joints.	
1911.12	Cut block with a masonry saw.	
1911.13	Lay block against a metal door frame.	
1911.14	Incorporate bond beam within a block wall.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Bricklaying. Areas of study include joint finishing, laying brick to the line, constructing brick leads, laying brick positions and brick paving. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to Bricklaying.

Building Plans and Specifications for Electrical Installations		Complete
Content Skill Sets		Knowledge/ Performance
1913.01	Laying brick leads.	
1913.02	Explain terms associated with laying leads.	
1913.03	Write a short paragraph describing the purpose of leads.	
1913.04	Lay brick leads.	

Laying Brick to the Line		Complete
Content Skill Sets		Knowledge/ Performance
1913.05	Laying brick to the line.	
1913.06	Explain terms associated with laying brick to the line.	
1913.07	Demonstrate methods of putting up a line and setting a trig brick.	
1913.08	Dry bond a wall.	
1913.09	Lay brick to the line using established leads and corner poles.	
1913.10	Reinforce the importance of having a plumb bond.	
1913.11	Explain how to install wall ties.	

Brick Positions		Complete
Content Skill Sets		Knowledge/ Performance
1913.12	Laying brick using different brick positions.	
1913.13	Distinguish between the different meanings of bonding and types of bonds.	
1913.14	Explain terms associated with wall layout.	
1913.15	Construct a double wall that contains stretchers, headers, soldiers, shiners, row locks, and sailors.	

Tooling Mortar Joints		Complete
Content Skill Sets		Knowledge/ Performance
1913.16	Mortar joints.	
1913.17	Contrast the different types of jointers and their uses.	
1913.18	Strike, brush, and polish mortar joints.	

Brick Paving		Complete
Content Skill Sets		Knowledge/ Performance
1913.19	Laying brick pavers.	
1913.20	Compare the various types of bricks and pattern bonds in paving.	
1913.21	Show how brick pavers are laid with and without mortar.	
1913.22	Lay various brick patterns within a 2' x 4' frame.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Bricklaying Applications. Areas of study include installing brick paving, building chimneys and fireplaces, constructing brick steps, and building brick archways. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to Advanced Bricklaying.

Brick Paving		Complete
Content Skill Sets		Knowledge/ Performance
1914.01	Installing brick paving.	
1914.02	Analyze various types of brick pattern bonds used for paving.	
1914.03	Compare and contrast the differences of brick paving with and without mortar.	
1914.04	Lay various patterns within a 2'x 4' frame.	

Chimneys and Fireplaces		Complete
Content Skill Sets		Knowledge/ Performance
1914.05	Building chimneys and fireplaces.	
1914.06	Utilize terms associated with chimneys and fireplaces.	
1914.07	Compare and contrast the types of fireplaces.	
1914.08	Analyze the factors to consider in constructing fireplaces and chimneys.	
1914.09	Butter a firebrick.	
1914.10	Assess the characteristics of a firebox.	
1914.11	Construct a fireplace with chimney.	

Steps		Complete
Content Skill Sets		Knowledge/ Performance
1914.12	Constructing steps.	
1914.13	Classify parts of a step.	
1914.14	Compare and contrast the relationship between riser and tread.	
1914.15	Map out the procedures for the layout of brick steps.	
1914.16	Build a set of brick steps.	

Arches		Complete
Content Skill Sets		Knowledge/ Performance
1914.17	Constructing arches.	
1914.18	Utilize terms associated with arch construction.	
1914.19	Compare and contrast the major types of arches used today.	
1914.20	Assess the function of archways.	
1914.21	Build an arch template.	
1914.22	Construct a semi-circular arch.	

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in Decorative Masonry Work. Areas of study include building with the six different brick positions, building with landscape block, integrating arches into openings and setting ceramic tile. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to Decorative Masonry Work.

Brick Positions		Complete
Content Skill Sets		Knowledge/ Performance
1916.01	The six different brick positions and how to use them.	
1916.02	Analyze the six different brick positions.	
1916.03	Build a brick wall for each of the six brick positions.	
1916.04	Layout a herringbone pattern.	
1916.05	Lay a radius step using brick position.	

Landscape Block		Complete
Content Skill Sets		Knowledge/ Performance
1916.06	Laying landscape block.	
1916.07	Identify the tools associated with laying landscape block.	
1916.08	Compare and contrast the different dimensions of landscape block.	
1916.09	Define and discuss the use and purpose of landscape block.	
1916.10	Utilize terms associated with laying landscape block.	
1916.11	Formulate methods for estimating landscape block.	
1916.12	Layout and build a landscape block project.	

Arch Construction		Complete
Content Skill Sets		Knowledge/ Performance
1916.13	Designing and constructing an archway.	
1916.14	Utilize terms associated with arch construction.	
1916.15	Compare and contrast the types of arches used in the construction industry.	
1916.16	Analyze the use of keystone in arch construction.	
1916.17	Construct an archway.	

Ceramic Tile		Complete
Content Skill Sets		Knowledge/ Performance
1916.18	Laying ceramic tile.	
1916.19	Identify tools associated with setting ceramic tile.	
1916.20	Assess methods for estimating ceramic tile.	
1916.21	Layout and construct a ceramic tile project.	

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in the masonry Program of Study, specifically foundations and footings. Areas of study include blueprint reading, site layout and footer and foundation installation. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to masonry occupations.

Blueprint Reading		Complete
Content Skill Sets		Knowledge/ Performance
1917.01	Blueprint reading.	
1917.02	Interpret working drawings.	
1917.03	Apply terms, abbreviations, and symbols associated with basic blueprint reading.	

Foundation Layout		Complete
Content Skill Sets		Knowledge/ Performance
1917.04	Foundation layout.	
1917.05	Reinforce the importance of accuracy in foundation layout.	
1917.06	Measure the diagonal to square a foundation.	
1917.07	Explain the important features of a foundation.	
1917.08	Set up level devices and transits.	
1917.09	Construct batter boards.	
1917.10	Determine the size of footings for different widths of walls.	
1917.11	Compare and contrast the two major types of footings.	
1917.12	Demonstrate the use of steel reinforcement in concrete footers.	
1917.13	Explain how a footer is placed and cured.	
1917.14	Determine the size of footings for different widths of walls.	

Robot Safety and Safety Devices

Complete

Content Skill Sets

**Knowledge/
Performance**

1929.1 Demonstrate knowledge of internal robot safety devices and functions

1929.2 Demonstrate knowledge of external safety devices

Basic Robot Operations Using Teach Pendant

Complete

Content Skill Sets

**Knowledge/
Performance**

1929.3 Master and re-master robot

1929.4 Setup robot coordinate frames

Basic Programming

Complete

Content Skill Sets

**Knowledge/
Performance**

1929.5 Create various robot programs

1929.6 Program non-motion logic structures

Program File Manipulations

Complete

Content Skill Sets

**Knowledge/
Performance**

1929.7 Backup individual and system files

1929.8 Restore individual and system files

1929.9 Perform image backup and restore

Robot Integration

Complete

Content Skill Sets

**Knowledge/
Performance**

1929.10 Establish communication to peripheral devices

1929.11 Configure Input/Output

1929.12 Set end-of-arm tool parameters

Advanced Operations and Programming (RoboGuide)		Complete
Content Skill Sets		Knowledge/ Performance
1929.13	Apply advanced program functions and options	
1929.14	Program auxiliary axis	
1929.15	Program advanced motion and non-motion statements	

Troubleshoot System Errors		Complete
Content Skill Sets		Knowledge/ Performance
1929.16	Troubleshoot configuration errors	
1929.17	Troubleshoot Dual Check Safety (DCS) errors	

iRVision		Complete
Content Skill Sets		Knowledge/ Performance
1929.18	Identify iRVision application requirements	
1929.19	Demonstrate knowledge of iRVision components	
1929.20	Demonstrate knowledge of iRVision system hardware setup	
1929.21	Identify iRVision processes	
1929.22	Determine and establish frame locations	
1929.23	Perform iRVision setup	
1929.24	Perform 2D Calibration (automatic and manual)	
1929.25	Perform Error Proofing process	
1929.26	Apply 2D Vision process	
1929.27	Program instructions for 2D Vision	

NOTES:

[NOCTI FANUC Partner Blueprint-FCR-T1 FANUC Certified Robot- Technician 1 \(fanucamerica.com\)](http://fanucamerica.com)

Robot Safety and Safety Devices

Complete

Content Skill Sets

**Knowledge/
Performance**

1930.1 Demonstrate knowledge of internal robot safety devices and functions

1930.2 Demonstrate knowledge of external safety devices

Basic Robot Operations Using Teach Pendant

Complete

Content Skill Sets

**Knowledge/
Performance**

1930.3 Master and re-master robot

1930.4 Setup robot coordinate frames

Basic Programming

Complete

Content Skill Sets

**Knowledge/
Performance**

1930.5 Create various robot programs

1930.6 Program non-motion logic structures

Program File Manipulations

Complete

Content Skill Sets

**Knowledge/
Performance**

1930.7 Backup individual and system files

1930.8 Restore individual and system files

1930.9 Perform image backup and restore

Robot Integration

Complete

Content Skill Sets

**Knowledge/
Performance**

1930.10 Establish communication to peripheral devices

1930.11 Configure Input/Output

1930.12 Set end-of-arm tool parameters

Advanced Operations and Programming (RoboGuide)		Complete
Content Skill Sets		Knowledge/ Performance
1930.13	Apply advanced program functions and options	
1930.14	Program auxiliary axis	
1930.15	Program advanced motion and non-motion statements	

Troubleshoot System Errors		Complete
Content Skill Sets		Knowledge/ Performance
1930.16	Troubleshoot configuration errors	
1930.17	Troubleshoot Dual Check Safety (DCS) errors	

iRVision		Complete
Content Skill Sets		Knowledge/ Performance
1930.18	Identify iRVision application requirements	
1930.19	Demonstrate knowledge of iRVision components	
1930.20	Demonstrate knowledge of iRVision system hardware setup	
1930.21	Identify iRVision processes	
1930.22	Determine and establish frame locations	
1930.23	Perform iRVision setup	
1930.24	Perform 2D Calibration (automatic and manual)	
1930.25	Perform Error Proofing process	
1930.26	Apply 2D Vision process	
1930.27	Program instructions for 2D Vision	

NOTES:

[NOCTI FANUC Partner Blueprint-FCR-T1 FANUC Certified Robot- Technician 1 \(fanucamerica.com\)](http://fanucamerica.com)

Course Description: This course introduces the student to the knowledge base and technical skills for Fundamentals of Power Equipment I as a component of all courses in the Power Equipment Systems Program of Study. Areas of study include job seeking and keeping skills, safety, basic principles of engine operation, and air and fuel systems. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1962.01	Identify and test equipment safety devices.	
1962.02	Demonstrate proper techniques for hand tools (e.g., screwdriver, torque wrenches).	
1962.03	Demonstrate proper techniques for power tools and machinery.	
1962.04	Demonstrate proper handling, containment, and clean-up of hazardous materials (e.g., SDS).	
1962.05	Demonstrate proper usage of personal protective equipment (PPE).	
1962.06	Demonstrate safe operation of small engines and equipment.	

General Shop Practices		Complete
Content Skill Sets		Knowledge/ Performance
1962.07	Locate parts and equipment information using printed and electronic media.	
1962.08	Write a parts and labor invoice.	
1962.09	Calculate materials mark-up, labor time, and state tax.	
1962.10	Demonstrate timekeeping and parts usage on worksheet and job ticket.	

Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1962.11	Identify and conduct manufacturer's recommended service procedures.	
1962.12	Inspect, test, and adjust safety-stop devices.	

Fuel Systems Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance

1962.13	Inspect fuel tank, lines, and –filters.	
1962.14	Identify and service fuel delivery system components, including carburetor and.	
1962.15	Adjust and service fuel system controls and linkages.	
1962.16	Explain fuel injection theory.	
1962.17	Explain carburetor theory.	
1962.18	Inspect and service air –filtration system.	
1962.19	Disassemble, clean, inspect, and reassemble carburetor (diaphragm and oat bowl).	

Governor		Complete
Content Skill Sets		Knowledge/ Performance
1962.20	Identify governor parts, functions, and types.	
1962.21	Inspect, service, and adjust governor.	
1962.22	Identify governor-related problems.	

Cylinder Head and Valve, Service and Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1962.23	Explain theory of compression.	
1962.24	Perform compression test and cylinder leak down test.	
1962.25	Remove, inspect, reinstall, and adjust valves.	
1962.26	Inspect and measure valve guides and valve stems.	
1962.27	Remove, inspect, and reinstall cylinder head to manufacturer’s specifications.	

Engine Assembly		Complete
Content Skill Sets		Knowledge/ Performance
1962.28	Identify correct timing of crankshaft, camshaft, balance shaft, gears, and flywheel.	
1962.29	Identify and inspect, crankshaft, camshaft, balance shaft, gears, and flywheel.	
1962.30	Identify, inspect, and measure piston, rings, and cylinder.	
1962.31	Identify, inspect, and measure bearing clearances and journal sizes of the crankshaft and connecting rod.	
1962.32	Identify proper usage of gaskets and sealants.	

Course Description: This course introduces the student to the knowledge base and technical skills for Fundamentals of Power Equipment II as a component of concepts in the Power Equipment Systems Program of Study. Areas of study include lubrication, cooling, electrical, and exhaust systems. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1964.01	Identify and test equipment safety devices.	
1964.02	Demonstrate proper techniques for hand tools (e.g., screwdriver, torque wrenches).	
1964.03	Demonstrate proper techniques for power tools and machinery.	
1964.04	Demonstrate proper handling, containment, and clean-up of hazardous materials (e.g., SDS).	
1964.05	Demonstrate proper usage of personal protective equipment (PPE).	
1964.06	Demonstrate safe operation of small engines and equipment.	

General Shop Practices		Complete
Content Skill Sets		Knowledge/ Performance
1964.07	Locate parts and equipment information using printed and electronic media.	
1964.08	Write a parts and labor invoice.	
1964.09	Calculate materials mark-up, labor time, and state tax.	
1964.10	Demonstrate timekeeping and parts usage on worksheet and job ticket.	

Lubrication Systems		Complete
Content Skill Sets		Knowledge/ Performance
1964.11	Inspect and service engine lubrication system including breathers, filters, and strainers.	
1964.12	Identify types of lubricating mechanisms.	
1964.13	Identify proper types of oil and lubricants.	

Ignition		Complete
Content Skill Sets		Knowledge/ Performance
1964.14	Explain ignition theory and coil output.	
1964.15	Identify, inspect, test, and adjust ignition components.	
1964.16	Disassemble, service, and reassemble ignition system and/or components.	

Starters and Charging Systems		Complete
Content Skill Sets		Knowledge/ Performance
1964.17	Identify, inspect, and test charging and starting systems.	
1964.18	Service and repair charging and starting systems.	
1964.19	Inspect and perform battery service.	

Course Description: This course introduces the student to the knowledge base and technical skills for Power Equipment Service I as a component of concepts in the Power Equipment Systems Program of Study. Areas of study include: basic shop skills, safety, measurement, and complete engine system service. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1966.01	Identify and test equipment safety devices.	
1966.02	Demonstrate proper techniques for hand tools (e.g., screwdriver, torque wrenches).	
1966.03	Demonstrate proper techniques for power tools and machinery.	
1966.04	Demonstrate proper handling, containment, and clean-up of hazardous materials (e.g., SDS).	
1966.05	Demonstrate proper usage of personal protective equipment (PPE).	
1966.06	Demonstrate safe operation of small engines and equipment.	

General Shop Practices		Complete
Content Skill Sets		Knowledge/ Performance
1966.07	Locate parts and equipment information using printed and electronic media.	
1966.08	Write a parts and labor invoice.	
1966.09	Calculate materials mark-up, labor time, and state tax.	
1966.10	Demonstrate timekeeping and parts usage on worksheet and job ticket.	

Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1966.11	Identify and conduct manufacturer’s recommended service procedures.	
1966.12	Inspect, test, and adjust safety-stop devices.	

Lubrication Systems		Complete
Content Skill Sets		Knowledge/ Performance
1966.13	Inspect and service engine lubrication system including breathers, filters, and strainers.	
1966.14	Identify types of lubricating mechanisms.	
1966.15	Identify proper types of oil and lubricants.	

Governor		Complete
Content Skill Sets		Knowledge/ Performance
1966.16	Identify governor parts, functions, and types.	
1966.17	Inspect, service, and adjust governor.	
1966.18	Identify governor-related problems.	

Course Description: This course introduces the student to the knowledge base and technical skills for Power Equipment Service II as a component of concepts in the Power Equipment Systems Program of Study. Areas of study include: drive systems, chainsaws, and miscellaneous outdoor power equipment applications. Emphasis will be placed on career exploration, job seeking skills, and personal and professional ethics. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
1968.01	Identify and test equipment safety devices.	
1968.02	Demonstrate proper techniques for hand tools (e.g., screwdriver, torque wrenches).	
1968.03	Demonstrate proper techniques for power tools and machinery.	
1968.04	Demonstrate proper handling, containment, and clean-up of hazardous materials (e.g., SDS).	
1968.05	Demonstrate proper usage of personal protective equipment (PPE).	
1968.06	Demonstrate safe operation of small engines and equipment.	

General Shop Practices		Complete
Content Skill Sets		Knowledge/ Performance
1968.07	Locate parts and equipment information using printed and electronic media.	
1968.08	Write a parts and labor invoice.	
1968.09	Calculate materials mark-up, labor time, and state tax.	
1968.10	Demonstrate timekeeping and parts usage on worksheet and job ticket.	

Maintenance		Complete
Content Skill Sets		Knowledge/ Performance
1968.11	Identify and conduct manufacturer’s recommended service procedures.	
1968.12	Inspect, test, and adjust safety-stop devices.	
1968.13	Inspect and service intake and exhaust systems.	
1968.14	Identify and inspect PTO and drive train (e.g., belts, blades, pulleys, spindles).	
1968.15	Inspect and service cooling system components (air and liquid cooled).	
1968.16	Inspect and service cooling system components (air and liquid cooled).	

Troubleshooting

Complete

Content Skill Sets

Knowledge/
Performance

1968.17	Troubleshoot ignition system problems.	
1968.18	Troubleshoot starting and charging system problems.	
1968.19	Troubleshoot cooling system problems.	
1968.20	Troubleshoot fuel system problems.	
1968.21	Troubleshoot lubrication system problems.	
1968.22	Troubleshoot compression problems related to cylinder head and valves.	
1968.23	Troubleshoot low power and rough running conditions.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Power Equipment Systems Program of Study. Incorporated into this course are required forms for service department operation, motorcycle and ATV brake systems, transmissions, and suspension systems for a career in power equipment systems. This course is recommended as an Elective in Power Equipment Systems.

Franchise Records		Complete
Content Skill Sets		Knowledge/ Performance
1970.01	Record keeping forms for franchised and non-franchised businesses.	
1970.02	Complete pre-delivery, repair order, parts order, inventory, and warranty claims forms.	
1970.03	Perform pre-delivery service.	

Brakes		Complete
Content Skill Sets		Knowledge/ Performance
1970.04	Servicing brake systems on motorcycles.	
1970.05	Perform service on single and double leading shoe drum brakes.	
1970.06	Service disc brake systems.	
1970.07	Inspect, repair or replace brake rotors and drums.	
1970.08	Inspect, repair or replace a master cylinder.	
1970.09	Bleed and adjust hydraulic brake systems.	

Transmissions and Drives		Complete
Content Skill Sets		Knowledge/ Performance
1970.10	Adjusting the clutch on motorcycles.	
1970.11	Disassemble, inspect, and reassemble motorcycle and ATV transmissions.	
1970.12	Service final drives.	
1970.13	Service various types of motorcycle and ATV clutches.	
1970.14	Disassemble, inspect, and reassemble manual gear transmissions.	
1970.15	Disassemble, inspect, and reassemble a centrifugal clutch with a variable ratio belt drive.	
1970.16	Inspect, lubricate and adjust a chain drive.	
1970.17	Calculate final drive ratio.	
1970.18	Inspect, service shaft drive assemblies.	

Suspension and Wheels		Complete
Content Skill Sets		Knowledge/ Performance
1970.19	Adjust, repair and service motorcycle suspension and wheel service.	
1970.20	Adjust wheel tracking and alignment.	
1970.21	Inspect, and reassemble manual gear transmissions.	
1970.22	Lace and true a spoke type wheel.	
1970.23	Measure a wheel for run-out.	
1970.24	Change tube and tubeless tires.	
1970.25	Balance a wheel assembly.	
1970.26	Service rear suspension components.	
1970.27	Service steering head assembly.	
1970.28	Rebuild telescoping fork assembly.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Power Equipment Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in power equipment sales and service. This course is recommended as an Elective in Power Equipment Systems.

Fuel Systems		Complete
Content Skill Sets		Knowledge/ Performance
1972.01	Servicing multiple carburetor and fuel injection engines.	
1972.02	Service and adjust twist grip throttle assemblies.	
1972.03	Perform service on slide, vacuum controlled and butterfly-controlled carburetors.	
1972.04	Synchronize and adjust multiple carburetor systems.	
1972.05	Calculate changes due to geographic regions.	
1972.06	Test throttle body and port fuel injection system components.	

Outboard Motor Repair		Complete
Content Skill Sets		Knowledge/ Performance
1972.07	Service and maintenance to outboard motors and their controls.	
1972.08	Properly propeller selection for optimum operation.	
1972.09	Preparing motor for the off-season.	
1972.10	Perform routine service to the engine and rigging.	
1972.11	Select propellers to maximize planning speed and thrust.	
1972.12	Explain the effect of blade numbers on propeller performance.	
1972.13	Distinguish between propeller, slippage, cavitation and ventilation.	
1972.14	Winterize an outboard for storage.	

Personal Watercraft		Complete
Content Skill Sets		Knowledge/ Performance
1972.15	Service and maintenance to personal watercraft.	
1972.16	Service the steering nozzle pivot and cables.	
1972.17	Service jet pump.	
1972.18	Adjust throttle cable linkage.	
1972.19	Test engine shut-off lanyard.	
1972.20	Maintain engine cooling and bilge systems.	

Personal Watercraft

Complete

Content Skill Sets

**Knowledge/
Performance**

1972.21	Service and maintenance to snowmobiles.	
1972.22	Service the clutch and drive chain assembly.	
1972.23	Service on bogie wheel and slide rail track suspension systems.	
1972.24	Evaluate track condition.	
1972.25	Replace skis and align steering.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Power Equipment Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in power equipment sales and service. This course is recommended as an Elective in Power Equipment Systems.

Diesel Engine Fundamentals		Complete
Content Skill Set		Knowledge/ Performance
1973.01	Characteristics of compact diesel engines.	
1973.02	Components unique to diesel engines.	
1973.03	Cold weather operation.	
1973.04	Describe the difference between a diesel and a gasoline engine.	
1973.05	Describe fuel characteristics that are unique to diesel engines.	
1973.06	Identify components of a compact diesel engine.	
1973.07	Describe the diesel fuel injection system.	
1973.08	Describe how to start up a diesel engine in cold weather.	
1973.09	Startup a diesel engine in cold weather.	

Diesel Engine Maintenance, Diagnosis and Service		Complete
Content Skill Sets		Knowledge/ Performance
1973.10	Servicing and maintaining a compact diesel engine.	
1973.11	Maintain diesel engine fuel system.	
1973.12	Test fuel injectors and check injector timing according to manufacturer specifications.	
1973.13	Inspect, test and replace engine starting aids.	
1973.14	Troubleshoot the engine based on engine exhaust output.	
1973.15	Analyze engine compression.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Power Equipment Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in power equipment sales and service. This course is recommended as an Elective in Power Equipment Technology.

Principals of Operation		Complete
Content Skill Sets		Knowledge/ Performance
1974.01	The principals of operation of generators.	
1974.02	Estimating generator size for customer requirements.	
1974.03	Review units of electrical measurement.	
1974.04	Describe the components of a generator.	
1974.05	Differentiate between brushless and brush type generators.	
1974.06	Identify factors that affect starting and running loads.	
1974.07	Select the appropriate tools, machines, and materials to be used in preparation for welding.	
1974.08	Explain starting and running load demands for the selection of a generator and the specification.	
1974.09	Explain the difference between a transfer and a disconnect switch.	

Generator Service		Complete
Content Skill Sets		Knowledge/ Performance
1974.10	Operating a portable generator.	
1974.11	Servicing a portable generator to manufacturer's specifications.	
1974.12	Set-up a portable generator for service.	
1974.13	Test generator components and circuits.	
1974.14	Analyze generator output for correct voltage and hertz.	
1974.15	Test and adjust automatic idler.	

Course Description: This course focuses on the basic preparation and service of safe food, basic introduction to industry safety standards, restaurant equipment, kitchen essentials, and communication concepts in the baking industry. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

Safety and Sanitation		Complete
Content Skill Sets		Knowledge / Performance
1980.01	Identify causes and prevention of kitchen accidents.	
1980.02	Demonstrate safe and sanitary procedures for operating and maintaining large equipment, hand tools, and small wares.	
1980.03	Exhibit familiarity with laws and rules, pertaining to the food service industry, of regulatory agencies such as OSHA.	
1980.04	Identify safe food handling processes.	
1980.05	Identify causes and signs of biological, physical, and chemical contamination.	
1980.06	Describe use, storage, and disposal of types of cleaners and sanitizers, and their proper use.	
1980.07	Identify proper methods of waste disposal and recycling.	
1980.08	Identify and describe microorganisms related to food spoilage and food-borne illness, including growth environments.	

Business and Math Skills		Complete
Content Skill Sets		Knowledge / Performance
1980.09	Perform basic mathematical operations pertaining to the food service industry (e.g., addition, subtraction, multiplication, division, conversions).	
1980.10	Weigh and measure accurately.	
1980.11	Calculate preparation temperatures based on known variables (e.g., friction factor).	

Purchasing, Receiving, Inventory, and Storage		Complete
Content Skill Sets		Knowledge / Performance
1980.12	Describe proper techniques of receiving and storing fresh, frozen, refrigerated, and staple goods.	
1980.13	Examine various inventory systems (e.g., FIFO).	
1980.14	Discuss ethical issues as they relate to purchasing.	
1980.15	Order food requisitions from appropriate/reliable sources.	

Nutrition		Complete
Content Skill Sets		Knowledge / Performance
1980.16	Discuss various alternatives to increase the wholesomeness of baked goods.	
1980.17	Interpret food labels in terms of the portion size, ingredients, and nutritional value.	
1980.18	Discuss ways of preventing food allergies (e.g., gluten).	

Human Relations and Career Skills		Complete
Content Skill Sets		Knowledge / Performance
1980.19	Demonstrate effective communication and interpersonal skills.	
1980.20	Identify career opportunities in the baking industry.	
1980.21	Identify professional organizations and explain their purposes and benefits to the industry.	

Ornamental Metal Work

Course #: 1982

Course Description: This course introduces the student to the knowledge base and technical skills for concepts in the Ornamental Metal Work. Areas of study include measurement, metal layout and bending, operation of the drill press, band saw, and the iron worker. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in welding. This course is recommended as an Elective in Welding.

Welding Math		Complete
Content Skill Sets		Knowledge/ Performance
1982.01	Adding, subtracting, multiplying, and dividing whole numbers and fractions.	
	Use of measuring devices.	
	Converting fractions to decimals.	
	Converting fractions to angular measurements.	
1982.02	Practice addition, subtraction, multiplication, and division of whole numbers and fractions.	
1982.03	Describe and use measuring devices.	
1982.04	Describe and discuss how to convert fractions to decimals.	
1982.05	Understand and use the decimal equivalent table.	
1982.06	Explain linear measurement, angular measurement, and circular measurement.	

Layout and Bending Techniques		Complete
Content Skill Sets		Knowledge/ Performance
1982.07	Layout tools.	
	Lay out straight lines, angles, and circles.	
	Calculating bend tolerances.	
1982.08	Demonstrate the proper use and care of layout tools.	
1982.09	Demonstrate straight line layout within tolerances.	
1982.10	Demonstrate layout procedures using a square.	
1982.11	Perform circle layout.	
1982.12	Identify and use different tools used in ornamental metalworking.	
1982.13	Demonstrate 90 and 45 degree bends.	
1982.14	Check for joint misalignment or poor fit-up when bending different types of metals.	

1982.15	Explain how a CNC metal cutting machine works and how it is used in ornamental welding fabrication.	
1982.16	Draw a sketch in isometric and orthographic views.	
1982.17	Determine materials needed and specific tools needed to complete the project within tolerances.	

Drill Press Operations		Complete
Content Skill Sets		Knowledge/ Performance
1982.18	Personal protective equipment (PPE) needed when using a drill press.	
	Set up and operate a drill press within tolerance specifications.	
1982.19	Demonstrate the proper use of PPE methods and procedures when operating a drill press.	
1982.20	Explain the safety precautions of all accessories.	
1982.21	Demonstrate how to set up a drill press.	
1982.22	Demonstrate how to operate and shut down a drill press.	
1982.23	Examine and compare drill speed ratios of material thickness and specific drill sizes.	
1982.24	Describe the role of lubricants when using a drill press.	
1982.25	Demonstrate knowledge of drill sizes, letters, fractions and decimal equivalents.	

Band Saw Operations		Complete
Content Skill Sets		Knowledge/ Performance
1982.26	Personal protective equipment (PPE) perform safety inspections and minor repairs.	
	Set up and operate a band saw within tolerances.	
1982.27	Demonstrate the proper use of PPE methods and procedures when operating a band saw.	
1982.28	Explain the safety precautions of all accessories.	
1982.29	Demonstrate how to set up, adjust, operate, and cut metal using a band saw.	
1982.30	Demonstrate how to change the blade on a band saw.	
1982.31	Examine and compare different blade types and their applications.	
1982.32	Describe the role of lubricants when using a band saw.	
1982.33	Demonstrate knowledge of how to cut angles using a band saw.	

Shielded Metal Arc Welding Equipment and Set-up		Complete
Content Skill Sets		Knowledge/ Performance
1982.34	Safe (SMAW) welding practices.	
	Tool and equipment safety.	
	How to set up a machine for welding.	
1982.35	Review and practice general welding shop safety guidelines.	
1982.36	Describe and discuss electrical safety precautions when using arc welding equipment.	
1982.37	Identify factors that affect electrode selection.	
1982.38	Set up, adjust, and demonstrate the use of all of the basic welding tools and machines.	
1982.39	Position and adjust work pieces.	
1982.40	Identify and explain weld imperfections and their causes.	

SMAW Weld Processes		Complete
Content Skill Sets		Knowledge/ Performance
1982.41	Operate SMAW equipment.	
	Properly striking and extinguish an arc.	
	Distortion and how it is controlled.	
1982.42	Perform safety inspections of equipment and accessories.	
1982.43	Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques.	
1982.44	Weld components in flat, vertical and overhead positions.	
1982.45	Check for joint misalignment or poor fit-up before and after welding.	
1982.46	Monitor the fitting, burning, and welding processes to avoid over-heating of parts or warping, shrinking, distortion, or expansion of material.	
1982.47	Chip or grind off excessive weld, slag, or spatter to finish metal surfaces.	

Blueprint Reading and Metallurgy

Course #: 1983

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Education Welding Program of Study. Areas of study include drawing fundamentals, sketching and fabricating, basic welding symbols, and properties of metals and alloys. This course is recommended as an Elective in the Welding Program of Study.

Drawing Fundamentals		Complete
Content Skill Sets		Knowledge/ Performance
1983.01	Basic dimensioning skills.	
	Distinguishing between notes and specs and being able to analyze the title block.	
	Creating a title block and a bill of materials.	
1983.02	Identify the accepted standards and methods of dimensioning a welding blueprint.	
1983.03	Explain the procedures for dimensioning welding drawings.	
1983.04	Differentiate between notes and specifications.	
1983.05	Explain processing requirements from the title block.	
1983.06	Explain why tolerances are used in blueprints.	
1983.07	Develop a bill of materials from a drawing.	
1983.08	Explain the concepts related to sketching.	
1983.09	Construct an isometric sketch.	
1983.10	Construct an orthographic sketch.	

Sketching and Fabrication		Complete
Content Skill Sets		Knowledge/ Performance
1983.11	Basic sketching skills and techniques.	
	Fabricating parts from drawings.	
1983.12	Identify the concepts related to sketching.	
1983.13	Explain the concepts related to sketching multi-views.	
1983.14	Construct an isometric and orthographic views.	
1983.15	Fabricate parts from a drawing or sketch or blueprint.	

Basic Welding Symbols		Complete
Content Skill Sets		Knowledge/ Performance
1983.16	Basic welding symbols.	
	Structural and non-structural steel.	
1983.17	Draw welding symbols on a sketch or blueprint.	
1983.18	Describe common types of welds and joints.	
1983.19	Draw fillet and groove welding symbols.	
1983.20	Interpret common abbreviations for blueprints and welding processes.	
1983.21	Identify the different types of structural and non-structural steel and their uses.	

Metal and Alloy Properties		Complete
Content Skill Sets		Knowledge/ Performance
1983.22	Metallurgy properties and related terminology.	
	Heat treating ferrous and non-ferrous metals.	
1983.23	Define metallurgy terms.	
1983.24	Distinguish between mechanical and physical properties.	
1983.25	Describe various heat-treating processes.	
1983.26	Explain welding characteristics of low, medium, and high-carbon steel.	
1983.27	Explain welding techniques used on alloy steels and cast iron.	

Fundamentals of Welding Technology

Course #: 1985

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in Welding Technology. Areas of study include career opportunities in welding, welding terms and processes, oxyfuel cutting, lab, and equipment safety. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Welding Safety		Complete
Content Skill Sets		Knowledge/ Performance
1985.01	Safe welding practices.	
	Tool and equipment safety.	
	The processes in relation to welding.	
	The basic nomenclature and symbols for welding.	
1985.02	Review and practice general welding shop safety guidelines.	
1985.03	Describe the precautions to be taken when welding in confined areas.	
1985.04	Describe and discuss electrical safety precautions when using arc welding equipment.	
1985.05	Solve problems involving heat flow and temperature.	
1985.06	Review sample parts, blueprints, drawings, and engineering information to determine methods and sequences of operations needed to fabricate products.	
1985.07	Select the appropriate tools, machines, and materials to be used in preparation for welding.	
1985.08	Position and adjust work pieces.	
1985.09	Set up, adjust, and demonstrate the use of all of the basic welding tools and machines.	

Thermal Welding and Cutting Processes		Complete
Content Skill Sets		Knowledge/ Performance

1985.10	Welding processes.	
	Preparing base metal for welding.	
	Setting up oxy-fuel equipment.	
	Welding and cutting techniques using oxy-fuel equipment.	
1985.11	Perform safety inspections of equipment and accessories.	
1985.12	Explain how to transport oxy-fuel cylinders, assemble and set up fuel welding and cutting equipment.	
1985.13	Connect and turn regulator valves to activate and adjust gas flow and pressure so that desired flames are obtained.	
1985.14	Explain and describe base metal preparation techniques for cutting and welding.	
1985.15	Prepare base metal for cutting and welding.	
1985.16	Select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thickness of metals.	
1985.17	Solve problems involving heat flow and temperature.	
1985.18	Perform oxy-fuel gas cutting and bevel cutting on plain carbon steel.	
1985.19	Perform shape cutting and bevel cutting on plain carbon steel.	
1985.20	Position and weld mild steel using oxy-fuel equipment.	
1985.21	Position and braze mild steel using oxy-fuel equipment.	
1985.22	Operate a motorized, portable oxy-fuel gas cutting machine.	

Air Carbon Arc Cutting and Gouging		Complete
Content Skill Sets		Knowledge/ Performance
1985.23	Air carbon arc equipment.	
	Air carbon arc cutting process.	
	Metal removal using air carbon arc equipment.	
1985.24	Perform set-up procedures for manual air carbon arc gouging and cutting on mild steel.	
1985.25	Demonstrate using air carbon arc, the process of gouging.	
1985.26	Demonstrate using the air carbon arc, the process of cutting.	

Plasma Arc Cutting		Complete
Content Skill Sets		Knowledge/ Performance
1985.27	Plasma arc equipment	
	Plasma arc cutting process.	
1985.28	Perform set-up procedures for manual plasma arc cutting operations on plain carbon steel, aluminum, and stainless steel	
1985.29	Demonstrate using the plasma arc, the process for cutting	
1985.30	Demonstrate using the plasma arc, the process of shape cutting on plain carbon steel, aluminum, and stainless steel	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Welding Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in welding. This course is recommended as an Elective in Metals Technology and Welding.

Gas Metal Arc Welding Equipment and Setup		Complete
Content Skill Sets		Knowledge/ Performance
1987.01	Safe (GMAW) welding practices.	
1987.02	Tool and equipment safety.	
1987.03	The processes in relation to welding.	
1987.04	How to set up a machine for welding.	
1987.05	Review and practice general welding shop safety guidelines.	
1987.06	Describe the precautions to be taken when welding in confined areas.	
1987.07	Describe and discuss electrical safety precautions when using gas arc welding equipment.	
1987.08	Select the appropriate tools, machines, and materials to be used in preparation for welding.	
1987.09	Explain joint design considerations based on a welding procedure specification.	
1987.10	Set up, adjust, and demonstrate the use of all of the basic welding tools and machines.	
1987.11	Position and adjust work pieces.	
1987.12	Identify and explain weld imperfections and their causes.	

GMAW-Bead and Fillet Welds		Complete
Content Skill Sets		Knowledge/ Performance
1987.13	Operate GMAW equipment.	
1987.14	Distortion and how it is controlled.	
1987.15	Welding carbon steel and aluminum.	
1987.16	Perform safety inspections of equipment and accessories.	
1987.17	Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques.	
1987.18	Weld components in flat and horizontal positions.	
1987.19	Perform 1f and 2f welds on plain carbon steel.	
1987.20	Perform 1g welds on plain carbon steel.	
1987.21	Perform 1f, 2f, and 3f welds on aluminum.	
1987.22	Perform fillet welds in all positions.	
1987.23	Perform groove welds in all positions.	
1987.24	Check for joint misalignment or por fit-up before and after welding.	
1987.25	Solve problems involving heat flow and temperature.	

1987.26	Monitor the fitting, burning, and welding processes to avoid over-heating of parts or warping, shrinking, distortion, or expansion of metal.	
---------	--	--

Flux Cored Arc Welding		Complete
Content Skill Sets		Knowledge/ Performance
1987.27	Operate FCAW equipment.	
1987.28	Welding carbon steel.	
1987.29	Perform safety inspections of equipment and accessories.	
1987.30	Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques.	
1987.31	Perform fillet welds.	
1987.32	Perform groove welds.	
1987.33	Check for joint misalignment or poor fit-up before and after welding.	
1987.34	Solve problems involving heat flow and temperature.	

Course Description: The Skill Sets in this course are representative of the basic knowledge included in a Career and Technical Welding Program of Study. Incorporated into this course are elements of introductory knowledge and skills necessary for a career in welding. This course is recommended as an Elective in Metals Technology and Welding

Gas Tungsten Arc Welding Equipment and Set-up		Complete
Content Skill Sets		Knowledge/ Performance
1989.01	Safe (GTAW) welding practices.	
1989.02	Tool and equipment safety.	
1989.03	How to set up a machine for welding.	
1989.04	Review and practice general welding shop safety guidelines.	
1989.05	Describe the precautions to be taken when welding in confined areas.	
1989.06	Describe and discuss electrical safety precautions when using gas arc welding equipment.	
1989.07	Select the appropriate tools, machines, and materials to be used in preparation for welding.	
1989.08	Explain joint design considerations based on a welding procedure specification.	
1989.09	Set up, adjust, and demonstrate the use of all of the basic welding tools and machines.	
1989.10	Position and adjust work pieces.	
1989.11	Identify and explain weld imperfections and their causes.	

GTAW Welding		Complete
Content Skill Sets		Knowledge/ Performance
1989.12	Operate GTAW equipment.	
1989.13	Welding on carbon steel.	
1989.14	Welding aluminum.	
1989.15	Perform safety inspections of equipment and accessories.	
1989.16	Determine required equipment and welding methods, applying knowledge of metallurgy, geometry, and welding techniques.	
1989.17	Perform 1f, 2f, and 3f welds on aluminum.	
1989.18	Perform fillet welds in all positions.	
1989.19	Perform groove welds in all positions.	
1989.20	Check for joint misalignment on poor fit-up before and after welding.	
1989.21	Monitor the fitting, burning, and welding processes to avoid over heating of parts and warping, shrinking, distortion, or expansion of material.	

Course Description: This course is an elective course in the Agriculture, Food and Natural Resources cluster. The skill sets focused in this course to develop a students' knowledge and abilities in the theory of operation, maintenance, troubleshooting and repair of small gasoline engines. Safety instruction is integrated into relevant activities. Teachers should provide each student with real world learning opportunities and instruction related to selection, development, and maintenance of individual Supervised Agricultural Experience (SAE) programs. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Small Gas Engines Maintenance and Repair		Complete
Content Skill Sets		Knowledge/ Performance
2002.01	Cycles of a small engine—4 stroke and 2 stroke.	
2002.02	Small engine part identification.	
2002.03	Part manuals.	
2002.04	Small engine tool use.	
2002.05	Small engine maintenance.	
2002.06	Ignition systems.	
2002.07	Carburetion systems.	
2002.08	Lubrication systems.	
2002.09	2 cycle mix ratios.	
2002.10	Tear down engines and identify parts.	
2002.11	Repair and maintain gasoline engines used to power equipment such as portable saws, lawn mowers, generators, and compressors.	
2002.12	Adjust points, valves, carburetors, distributors, and spark plug gaps, using feeler gauges.	
2002.13	Reassemble engines after repair or maintenance work is complete.	
2002.14	Record repairs made, time spent, and parts used.	
2002.15	Perform routine maintenance such as cleaning and oiling parts, honing cylinders, and tuning ignition systems.	
2002.16	Obtain problem descriptions from customers and prepare cost estimates for repairs.	
2002.17	Test and inspect engines to determine malfunctions, to locate missing and broken parts, and to verify repairs, using diagnostic instruments.	
2002.18	Repair or replace defective parts such as magnetos, water pumps, gears, pistons, and carburetors, using hand tools.	
2002.19	Dismantle engines, using hand tools, and examine parts for defects.	
2002.20	Remove engines from equipment, and position and bolt engines to repair stands.	
2002.21	Mix oil/gas to correct ratios for 2 cycle engines.	

Course Description: This course is an elective course in the Agriculture, Food and Natural Resources cluster. The skill sets focused in this course to develop a students’ knowledge and abilities to read and interpret blueprints and make mechanical drawings. Safety instruction is integrated into relevant activities. Teachers should provide each student with real world learning opportunities and instruction related to selection, development, and maintenance of individual Supervised Agricultural Experience (SAE) programs. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Fundamentals of Drafting		Complete
Content Skill Sets		Knowledge/ Performance
2004.1	Basic drafting equipment and use	
2004.2	Read and interpret technical drawings	
2004.3	Read and transfer measurements	
2004.4	Identify standard media for drawing	
2004.5	Use proper layout techniques on drawings	
2004.6	Read and interpret the following drawings-welding, construction, electrical and mechanical	

Basic Sketches		Complete
Content Skill Sets		Knowledge/ Performance
2004.7	Sketching geometric shapes	
2004.8	Develop orthographic sketches of geometric shapes	
2004.9	Develop isometric sketches of geometric shapes	
2004.10	Develop skills in size and proportion of shapes	

Line Types and Symbols		Complete
Content Skill Sets		Knowledge/ Performance
2004.11	Interpretation and application of common line types and symbols to geographical representatives	
2004.12	Use alphabet of lines when drawing	
2004.13	Draw geometric line constructions	
2004.14	Draw geometric circle and arc constructions	

2004.15	Draw geometric polygon constructions	
2004.16	Draw geometric ellipse constructions	

Basic CAD System Operations		Complete
Content Skill Sets		Knowledge/ Performance
2004.17	CAD operation	
2004.18	Peripheral equipment operation	
2004.19	Operate plotters and printers	
2004.20	Create plotter files	
2004.21	Create disk files	
2004.22	Copy plotter files	
2004.23	Develop back-up files	

Orthographic Projections		Complete
Content Skill Sets		Knowledge/ Performance
2004.24	Principles of orthographic projections to select proper views and projections techniques	
2004.25	Orthographic terminology	
2004.26	Apply orthographic projection techniques to complete multi-view drawings	
2004.27	Select proper views to define given objects (1-view, 2-view, and 3 view drawings)	
2004.28	Draw revision blocks	
2004.29	Draw title blocks	
2004.30	Specify shop notes	
2004.31	Create detailed working assembly drawings	
2004.32	Create sectional drawings	

Drawing Threads and Fastener		Complete
Content Skill Sets		Knowledge/ Performance
2004.33	Thread forms, series, and classification of fits	
2004.34	Specify keys, keyways, taper pins and common threaded fasteners	
2004.35	Draw threaded fasteners using detailed representation	
2004.36	Draw threaded fasteners using schematic representations	

Advanced CAD Systems		Complete
Content Skill Sets		Knowledge/ Performance
2004.37	Operating CAD systems	
2004.38	Use advanced drawing and editing features within a CAD system	
2004.39	Obtain numerical and database information from CAD system	
2004.40	Use operating system functions within the CAD program	
2004.41	Demonstrate ability to efficiently print and plot specified drawings	
2004.42	Develop 3-D objects on a CAD system	

Applications in Technical Drawings		Complete
Content Skill Sets		Knowledge/ Performance
2004.43	Operating CAD systems	
2004.44	Create and use different prototype drawings	
2004.45	Develop new line types, hatch patterns, and text styles	
2004.46	Modify CAD menu to perform additional and/or new operations	
2004.47	Load and run lisp routine	
2004.48	Modify operating system files to facilitate CAD operations.	

NOTES:

Course Description: This course is an elective course in the Agriculture, Food and Natural Resources cluster. The skill sets focused in this course to develop a student’s knowledge and abilities in SMAW and MIG Welding, Oxy Fuel Cutting, Welding and Brazing. Safety instruction is integrated into relevant activities. Teachers should provide each student with real world learning opportunities and instruction related to selection, development, and maintenance of individual Supervised Agricultural Experience (SAE) programs. Students are encouraged to become active members of FFA, the national youth organization for those enrolled in agricultural education. FFA is an integral component of the program and provides curricular opportunities that enhance student achievement. Teachers should utilize relevant FFA activities to support experiential learning.

Oxy Fuel Cutting, Welding and Brazing		Complete
Content Skill Sets		Knowledge/ Performance
2006.1	Operating CAD systems	
2006.2	Create and use different prototype drawings	
2006.3	Develop new line types, hatch patterns, and text styles	
2006.4	Modify CAD menu to perform additional and/or new operations	
2006.5	Load and run lisp routine	
2006.6	Modify operating system files to facilitate CAD operations	

SMAW & MIG Welding		Complete
Content Skill Sets		Knowledge/ Performance
2006.7	identify common safety hazards of welding	
2006.8	identify and explain specific PPE needs of welding	
2006.9	know how to avoid welding fumes	
2006.10	know how to prepare base metal for welding	
2006.11	know and identify types of welding joints (butt, fillet, lap, etc)	
2006.12	identify and explain characteristics of Shielded Metal Arc Welding (SMAW)	
2006.13	know how welding electrodes are coded	
2006.14	identify factors for electrode selection	
2006.15	know how to set up a welder before use	
2006.16	know the difference between Gas Metal Arc Welding (GMAW) and Flux Core Arc Welding (FCAW)	
2006.17	know the uses of GMAW and FCAW	
2006.18	know how to set up a MIG welding machine	
2006.19	weld components in flat, vertical, or overhead positions	

2006.20	ignite torches or start power supplies and strike arcs by touching electrodes to metals being welded, completing electrical circuits	
2006.21	clamp, hold, tack-weld, heat-bend, grind or bolt component parts to obtain required configurations and positions for welding	
2006.22	operate manual or semi-automatic welding equipment to fuse metal segments, using processes such as gas tungsten arc, gas metal arc, flux-cored arc, plasma arc, shielded metal arc, resistance welding, and submerged arc welding	
2006.23	monitor the fitting, burning, and welding processes to avoid overheating of parts or warping, shrinking, distortion, or expansion of material	
2006.24	examine workpieces for defects and measure workpieces with straightedges or templates to ensure conformance with specifications	
2006.25	recognize, set up, and operate hand and power tools common to the welding trade, such as shielded metal arc and gas metal arc welding equipment	
2006.26	lay out, position, align, and secure parts and assemblies prior to assembly, using straightedges, combination squares, calipers, and rulers	
2006.27	chip or grind off excess weld, slag, or spatter, using hand scrapers or power chippers, portable grinders, or arc-cutting equipment	
2006.28	weld separately or in combination, using aluminum, stainless steel, cast iron, and other alloys	
2006.29	prepare all material surfaces to be welded, ensuring that there is no loose or thick scale, slag, rust, moisture, grease, or other foreign matter	
2006.30	select and install torches, torch tips, filler rods, and flux, according to welding chart specifications or types and thicknesses of metals	
2006.31	remove rough spots from workpieces, using portable grinders, hand files, or scrapers	
2006.32	position and secure workpieces, using hoists, cranes, wire, and banding machines or hand tools	
2006.33	guide and direct flames or electrodes on or across workpieces to straighten, bend, melt, or build up metal	
2006.34	clean or degrease parts, using wire brushes, portable grinders, or chemical baths	
2006.35	cut, contour, and bevel metal plates and structural shapes to dimensions as specified by blueprints, layouts, work orders, and templates, using powered saws, hand shears, or chipping knives	
2006.36	preheat workpieces prior to welding or bending, using torches or heating furnaces	

NOTES:

Course Description: This specialization course focuses on the basic scientific principles and processes related equine physiology, breeding, nutrition, and management practices involved in the equine industry. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Equine Nutrition		Complete
Content Skill Sets		Knowledge/ Performance
2007.01	Equine nutrition and nutrients.	
2007.02	Equine feeds.	
2007.03	Equine digestive system.	
2007.04	Balancing rations for equines.	
2007.05	Feeding equines.	
2007.06	Provide feeding recommendations to meet nutritional needs of horses.	
2007.07	Feed and water horses according to schedules and feeding instructions.	
2007.08	Mix food, liquid formulas, medications, or food supplements according to instructions, prescriptions, and knowledge of horses.	
2007.09	Collect and record animal information such as weight, size, physical condition, treatments received, medications given and food intake.	

Equine Care and Management		Complete
Content Skill Sets		Knowledge/ Performance
2007.10	Equine management needs.	
2007.11	Safety in equine management and handling.	
2007.12	Training a horse.	
2007.13	Horse grooming practices.	
2007.14	Accustoming animals to human voice and contact.	
2007.15	Perform animal grooming duties such as washing, brushing, clipping, and trimming coats, cutting nails, and cleaning ears.	
2007.16	Exercise animals to maintain their physical and mental health.	
2007.17	Train horses or other equines for riding, harness, show, racing, or other work, using knowledge of breed characteristics, training methods, performance, and the peculiarities of each animal.	
2007.18	Use oral, spur, rein, or hand commands to condition horses to carry riders or to pull horse-drawn equipment.	
2007.19	Place tack or harnesses on horses to accustom horses to the feel of equipment.	
2007.20	Cue or signal animals during performances.	
2007.21	Evaluate animals to determine their temperaments, abilities, or aptitude for training.	

2007.22	Feed or exercise animals or provide other general care, such as cleaning or maintaining holding or performance areas.	
2007.23	Talk to or interact with animals to familiarize them to human voices or contact.	
2007.24	Conduct training programs in order to develop and maintain desired animal behaviors for competition, entertainment, obedience, security, riding and related areas.	

Equine Health and Reproduction		Complete
Content Skill Sets		Knowledge/ Performance
2007.25	Diseases and injuries and appropriate medications for equines.	
2007.26	Records on heats, birth intervals, pedigree, and health practices of equines.	
2007.27	Examine animals to detect illness, injury, or disease, and to check physical characteristics, such as rate of weight gain.	
2007.28	Provide medical treatment, such as administering medications and vaccinations; or arrange veterinarians to provide more extensive treatment.	
2007.29	Mix feed, additives, and medications in prescribed portions.	
2007.30	Keep records documenting animal health, diet, or behavior.	
2007.31	Students will demonstrate knowledge of selection, breeding and artificial insemination of equines.	
2007.32	Select animals to be bred, and semen specimens to be used, according to knowledge of animals, genealogies, traits, and desired offspring characteristics.	
2007.33	Observe animals in heat to detect approach of estrus, and exercise animals to induce or hasten estrus, if necessary.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Aviation Technology industry. In the Aviation Fundamentals Technology class areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2012.01	Demonstrate safe work habits and operating procedures.	
2012.02	Clean and maintain personal work area and equipment.	
2012.03	Select and appropriately use cutting fluids.	
2012.04	Identify and appropriately use Personal Protective Equipment (PPE).	
2012.05	Identify environmental and safety considerations established by the FFA, EPA, OSHA, and listed in SDS publications.	

Basic Electricity		Complete
Content Skill Sets		Knowledge/ Performance
2012.06	sources and/or effects of capacitance in a circuit.	
2012.07	uses of capacitance in a circuit.	
2012.08	sources and/or effects of inductance in a circuit.	
2012.09	uses of inductance in a circuit.	
2012.10	operation of basic AC and/or DC electrical circuits.	
2012.11	Ohm's law	
2012.12	Kirchhoff's law(s).	

Aircraft Drawings		Complete
Content Skill Sets		Knowledge/ Performance
2012.13	characteristics and/or uses of any of the various types of drawings/blueprints and/or system schematics.	
2012.14	the meaning of any of the lines and symbols commonly used in aircraft sketches/drawings/blueprints.	
2012.15	using charts or graphs.	
2012.16	troubleshooting an aircraft system or component(s) using drawings/blueprints and/or system schematics.	
2012.17	inspection of an aircraft system or component(s) using drawings/blueprints and/or system schematics	

Weight and Balance

Complete

Content Skill Sets

Knowledge/
Performance

2012.18	the purpose(s) of weighing or reweighing.	
2012.19	general preparations for weighing, with emphasis on aircraft preparation and/or weighing area considerations.	
2012.20	the general location of airplane center of gravity (CG) in relation to the center of lift for most fixed main airfoils.	
2012.21	definitions of any of the following: datum, arm, moment (positive or negative), or moment index.	
2012.22	the meaning and/or application of any terms/nomenclature associated with weight and balance other than those mentioned in element "d" above, including but not limited to any of the following: tare, ballast, and residual fuel/oil.	

Fluid Lines and Fittings

Complete

Content Skill Sets

Knowledge/
Performance

2012.23	tubing materials.	
2012.24	tubing materials application.	
2012.25	tubing sizes.	

Materials and Processes

Complete

Content Skill Sets

Knowledge/
Performance

2012.26	any of the metals commonly used in aircraft and their general application.	
2012.27	composites and other nonmetallic components and their general application.	
2012.28	heat-treated parts precautions, using DD or "icebox" rivets.	

Ground Operation and Servicing

Complete

Content Skill Sets

Knowledge/
Performance

2012.29	general procedures for towing aircraft.	
2012.30	Air Traffic Control (ATC) considerations/requirements for towing aircraft on or across active runways.	
2012.31	general procedures for starting, ground operating, and/or taxiing a reciprocating engine powered aircraft.	
2012.32	general procedures for starting, ground operating, and/or taxiing a turbine engine powered aircraft.	

Cleaning and Corrosion Control

Complete

Content Skill Sets

Knowledge/
Performance

2012.33	aircraft preparation for washing, and general aircraft cleaning (washing) procedures.	
2012.34	post cleaning (washing) procedures.	
2012.35	corrosion theory.	
2012.36	types/effects of corrosion	

Mathematics		Complete
Content Skill Sets		Knowledge/ Performance
2012.37	areas of various geometrical shapes.	
2012.38	volumes of various geometrical shapes	
2012.39	definitions/descriptions of geometrical terms, including but not limited to any of the following: polygon, pi, diameter, radius, and hypotenuse.	
2012.40	ratio problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation.	
2012.41	proportion problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation.	

Maintenance Forms and Records		Complete
Content Skill Sets		Knowledge/ Performance
2012.42	writing descriptions of work performed and approval for return to service after minor repairs or minor alterations.	
2012.43	the content, form, and disposition of aircraft maintenance records reflecting approval for return to service after a 100-hour inspection.	
2012.44	the content, form, and disposition of aircraft maintenance records reflecting disapproval for return to service after a 100-hour inspection.	

Basic Physics		Complete
Content Skill Sets		Knowledge/ Performance
2012.45	any of the simple machines, how they function, and/or how mechanical advantage is applied in one or more specific example	
2012.46	sound resonance, how it can be a hazard to aircraft, and how sound may be used to aid in inspecting aircraft.	
2012.47	the relationship between fluid density and specific gravity	
2012.48	the characteristic of specific gravity of fluids and how it may be applied to aircraft maintenance.	
2012.49	the general effects of pressure and temperature on gases and liquids and how the qualities of compressibility and/or incompressibility of gases and liquids are generally applied to aircraft systems.	

Maintenance Publications		Complete
---------------------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
2012.50	how a mechanic makes use of Type Certificate Data Sheets (TCDS) and/or Aircraft Specifications in conducting maintenance or inspections.	
2012.51	aircraft maintenance manuals and associated publications including any of the following types of publications and how they are used: service bulletin, maintenance manual, overhaul manual, structural repair manual, or instructions for continued airworthiness.	
2012.52	the requirements of 14 CFR part 43, sections 43.13, 43.15, or 43.16 in the performance of maintenance.	
2012.53	Airworthiness Directives (AD), including purpose and/or AD categories and/or ADs issued to other than aircraft.	

Aviation Mechanic Privileges and Limitations		Complete
Content Skill Sets		Knowledge/ Performance
2012.54	required evidence of eligibility experience satisfactory to the Administrator.	
2012.55	length of experience required for eligibility.	
2012.56	practical experience required for eligibility.	
2012.57	the privileges of a mechanic in relation to 100-hour and annual inspections.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Aviation Technology industry. In the Aviation Fundamentals Technology class areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2013.01	Demonstrate safe work habits and operating procedures.	
2013.02	Clean and maintain personal work area and equipment.	
2013.03	Select and appropriately use cutting fluids.	
2013.04	Identify and appropriately use Personal Protective Equipment (PPE).	
2013.05	Identify environmental and safety considerations established by the FFA, EPA, OSHA, and listed in SDS publications.	

Basic Electricity		Complete
Content Skill Sets		Knowledge/ Performance
2013.06	procedures used in the measurement of voltage, current, and/or resistance.	
2013.07	Measure workpiece to verify compliance with print specifications.	
2013.08	determining power used in simple circuits	
2013.09	troubleshooting, and/or repair or alteration using electrical circuit diagrams.	
2013.10	common types of defects that may occur in an installed battery system.	
2013.11	aircraft battery theory/operation.	
2013.12	servicing aircraft batteries.	

Aircraft Drawings		Complete
Content Skill Sets		Knowledge/ Performance
2013.13	inspection of an aircraft system or component(s) using drawings/blueprints and/or system schematics.	
2013.14	repair or alteration of an aircraft system or component(s) using drawings/blueprints and/or schematics.	
2013.15	use of drawings/blueprints in component fabrication.	
2013.16	terms used in conjunction with aircraft drawings/blueprints and/or system schematics.	

Weight and Balance		Complete
Content Skill Sets		Knowledge/ Performance
2013.17	procedures for finding any of the following: datum, arm, moment (positive or negative), or moment index	
2013.18	purpose and/or application of mean aerodynamic chord (MAC)	
2013.19	adverse loading considerations.	

Fluid Lines and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
2013.20	flexible hose material.	
2013.21	flexible hose materials application	
2013.22	flexible hose sizes.	
2013.23	flexible hose identification.	
2013.24	AN, MS, and/or AC plumbing fittings.	

Materials and Processes		Complete
Content Skill Sets		Knowledge/ Performance
2013.25	visible characteristics of acceptable and/or unacceptable welds.	
2013.26	precision measurement and precision measurement tools.	
2013.27	using inspection techniques/methods, including any of the following: visual, metallic ring test, dye/fluorescent penetrant, magnetic particle, and/or eddy current.	
2013.28	identification, selection, installation, and/or use of aircraft hardware.	
2013.29	finding information about material types for specific application(s).	

Ground Operation and Servicing		Complete
Content Skill Sets		Knowledge/ Performance
2013.30	the hazards associated with starting, ground operating, and/or taxiing aircraft and procedures for preventing, minimizing or otherwise managing any of them	
2013.31	procedures for refueling and/or defueling aircraft.	
2013.32	oxygen system safety practices/precautions.	
2013.33	characteristics of aviation gasoline and/or turbine fuels, including basic types and means of identification.	
2013.34	fuel contamination hazards.	
2013.35	fuel additives commonly used in the field.	

2013.36	use of automobile fuel in aircraft engines.	
---------	---	--

Cleaning and Corrosion Control		Complete
Content Skill Sets		Knowledge/ Performance
2013.37	conditions that cause corrosion	
2013.38	corrosion prone areas in aircraft.	
2013.39	corrosion preventive maintenance procedures.	
2013.40	inspection for and identification of corrosion in any of its various forms	
2013.41	corrosion removal and treatment procedures	
2013.42	use of Material Safety Data Sheets (MSDS)	

Mathematics		Complete
Content Skill Sets		Knowledge/ Performance
2013.43	proportion problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation.	
2013.44	percentage problems, including examples of where or how they may be used in relation to aircraft maintenance or system(s) operation..	
2013.45	algebraic operations, including examples of where or how they may be used in relation to aircraft maintenance.	
2013.46	conditions or areas where metric conversion may be necessary.	

Maintenance Forms and Records		Complete
Content Skill Sets		Knowledge/ Performance
2013.47	The recording content, form, and disposition requirements for certificated aviation mechanics (without an Inspection Authorization) that perform major repairs and/or major alterations.	
2013.48	The inoperative instruments or equipment provisions of 14 CFR part 91.	
2013.49	the definition/explanation of any of the terms used in relation to aircraft maintenance, such as overhaul(ed), rebuilt, time in service, maintenance, preventive maintenance, inspection, major alteration, major repair, minor alteration, and minor repair.	

Basic Physics		Complete
Content Skill Sets		Knowledge/ Performance
2013.50	density altitude and the effects of temperature, and/or pressure, and/or humidity on aircraft and/or engine performance.	
2013.51	heat, how it is manifested in matter, and how heat transfer is accomplished through conduction, and/or convection, and/or radiation.	

2013.52	coefficient of linear (thermal) expansion as related to aircraft materials.	
2013.53	aircraft structures and theory of flight/physics of lift.	
2013.54	the operation of aerodynamic factors in the flight of airplanes and/or helicopters.	
2013.55	the relationship between force, area, and pressure.	
2013.56	the five forces or stresses affecting aircraft structures	
2013.57	the two forms of energy and how they apply to aircraft and/or aircraft systems.	

Maintenance Publications		Complete
Content Skill Sets		Knowledge/ Performance
2013.58	Airworthiness Directives (AD), including purpose and/or AD categories and/or ADs issued to other than aircraft.	
2013.59	in what form individuals may receive FAA published AD summaries and/or how they may be obtained.	
2013.60	the AD identification numbering system.	
2013.61	FAA Advisory Circulars (ACs) including any of the following: significance of the AC numbering system, one or more examples of ACs issued to provide information in designated subject areas, and one or more examples of ACs issued to show a method acceptable to the FAA complying with the CFRs.	
2013.62	the intent or function of the Aviation Maintenance Alerts	
2013.63	the Air Transport Association (ATA) Specification 100.	

Aviation Mechanic Privileges and Limitations		Complete
Content Skill Sets		Knowledge/ Performance
2013.64	change of address reporting requirements.	
2013.65	minimum age requirements.	
2013.66	recent experience requirements to exercise privileges of a certificate.	
2013.67	who is authorized to perform maintenance/inspection, preventive maintenance, rebuilding, or alteration and/or approve for return to service afterwards.	
2013.68	causes for revocation or suspension.	
2013.69	criteria for determining major and minor repair or alteration.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Aviation Technology industry. In the Aviation Fundamentals Technology class areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2014.01	Demonstrate safe work habits and operating procedures.	
2014.02	Clean and maintain personal work area and equipment.	
2014.03	Select and appropriately use cutting fluids.	
2014.04	Identify and appropriately use Personal Protective Equipment (PPE).	
2014.05	Identify environmental and safety considerations established by the FFA, EPA, OSHA, and listed in SDS publications.	

Metallic Structures		Complete
Content Skill Sets		Knowledge/ Performance
2014.06	Inspection/testing of metal structures.	
2014.07	Types of sheet metal defects.	
2014.08	Selection of sheet metal repair materials.	
2014.09	Layout and forming of sheet metal components.	
2014.10	Selection of rivets and hardware for a sheet metal repair.	
2014.11	Heat treatment processes for aluminum.	
2014.12	Rivet layout.	

Non-Metallic Structures		Complete
Content Skill Sets		Knowledge/ Performance
2014.13	Wood structures inspection techniques, tools, and practices for wood structures.	
2014.14	Effects of moisture/humidity on wood.	
2014.15	Types and/or general characteristics of wood used in aircraft structures.	
2014.16	Permissible substitutes and/or other materials used in the construction and repair of wood structures.	
2014.17	Acceptable and unacceptable wood defects	

Flight Controls		Complete
Content Skill Sets		Knowledge/ Performance
2014.18	Control cables.	
2014.19	Control cable maintenance.	
2014.20	Cable connectors.	
2014.21	Cable guides.	
2014.22	Control stops	

Airframe Inspection		Complete
Content Skill Sets		Knowledge/ Performance
2014.23	Inspection requirements under 14 CFR Part 91.	
2014.24	Maintenance recordkeeping requirements under 14 CFR Part 43.	
2014.25	Requirements for complying with ADs.	

Landing Gear Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.26	Fixed and retractable landing gear systems.	
2014.27	Fixed and retractable landing gear components.	
2014.28	Landing gear strut servicing/lubrication.	

Hydraulic and Pneumatic Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.29	Hydraulic system components and fluids.	
2014.30	Hydraulic system operation.	
2014.31	Hydraulic system servicing requirements.	
2014.32	Hydraulic system inspection, check, servicing, and troubleshooting.	

Environmental Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.33	Pressurization systems.	

2014.34	Bleed air heating.	
2014.35	Aircraft instrument cooling.	
2014.36	Exhaust heat exchanger and/or system component(s) function, operation, and/or inspection procedures.	

Aircraft Instrument Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.37	Annunciator indicating systems and the meaning of warning, caution, and advisory lights.	
2014.38	Magnetic compass operation.	
2014.39	Magnetic compass swinging procedures.	
2014.40	Pressure indicating instruments.	
2014.41	Temperature indicating instruments.	

Communication and Navigation Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.42	Radio operating principles.	
2014.43	Radio components.	
2014.44	Antenna identification and inspection and mounting requirements.	

Aircraft Fuel Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.45	Fuel system types.	
2014.46	Fuel system components including filters and selector valves.	
2014.47	Aircraft fuel tanks/cells	
2014.48	Fuel flow.	
2014.49	Fuel transfer and defueling.	

Aircraft Electrical Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.50	Generators, DC generation systems, and DC power distribution systems.	
2014.51	Alternators, AC generation systems, and AC power distribution systems.	
2014.52	Starter generators.	
2014.53	Constant Speed Drive (CSD) and Integrated Drive Generator (IDG) systems and components.	

Ice and Rain Control Systems		Complete
Content Skill Sets		Knowledge/ Performance
2014.54	Aircraft icing causes/effects.	
2014.55	Ice detection systems.	
2014.56	Anti-ice systems and components.	
2014.57	De-ice systems and components.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Aviation Technology industry. In the Aviation Fundamentals Technology class areas of study include hydraulic principles, practical application of hydraulic systems, pneumatic principles, and practical application of pneumatic systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2015.01	Demonstrate safe work habits and operating procedures.	
2015.02	Clean and maintain personal work area and equipment.	
2015.03	Select and appropriately use cutting fluids.	
2015.04	Identify and appropriately use Personal Protective Equipment (PPE).	
2015.05	Identify environmental and safety considerations established by the FFA, EPA, OSHA, and listed in SDS publications.	

Metallic Structures		Complete
Content Skill Sets		Knowledge/ Performance
2015.06	Rivet installation methods.	
2015.07	Maintenance safety practices/precautions for sheet metal repairs or fabrications.	
2015.08	Flame welding gasses.	
2015.09	Storage/handling of welding gasses.	
2015.10	Flame welding practices and techniques.	
2015.11	Inert-gas welding practices and techniques.	
2015.12	Purpose and types of shielding gasses.	

Non-Metallic Structures		Complete
Content Skill Sets		Knowledge/ Performance
2015.13	Wood repair techniques and practices.	
2015.14	Factors used in determining the proper type covering material.	
2015.15	Types of approved aircraft covering material.	
2015.16	Seams commonly used with aircraft covering.	
2015.17	Covering textile terms.	

Flight Controls		Complete
Content Skill Sets		Knowledge/ Performance
2015.18	Push pull tubes.	
2015.19	Torque tubes.	
2015.20	Bell cranks.	
2015.21	Flutter and flight control balance.	
2015.22	Rigging of airplane flight controls.	

Airframe Inspection		Complete
Content Skill Sets		Knowledge/ Performance
2015.23	Identification of life limited parts and their replacement interval.	
2015.24	Special inspections.	
2015.25	Use of FAA-approved data.	

Landing Gear Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.26	Inspection of bungee and spring steel landing gear systems.	
2015.27	Steering systems.	
2015.28	Landing gear position and warning system inspection, check, and servicing.	

Hydraulic and Pneumatic Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.29	Pneumatic system types and components.	
2015.30	Pneumatic system servicing requirements.	
2015.31	Servicing, function, and/or operation of accumulators.	
2015.32	Types of hydraulic/pneumatic seals and/or fluid/seal compatibility.	

Environmental Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.33	Combustion heater and/or system component(s) function, operation, and/or inspection procedures.	

2015.34	Vapor-cycle system and/or system component(s) operation, servicing, and/or inspection procedures.	
2015.35	Air-cycle system and/or system component(s) operation and/or inspection procedures.	
2015.36	Cabin pressurization and/or system component(s) operation and/or inspection procedures.	

Aircraft Instrument Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.37	Position indication sensors and instruments.	
2015.38	Gyroscopic instruments.	
2015.39	Direction indicating instruments.	
2015.40	Instrument pneumatic systems.	
2015.41	Pitot static system.	

Communication and Navigation Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.42	Interphone and intercom systems.	
2015.43	Very High Frequency (VHF), High Frequency (HF), and SATCOM systems.	
2015.44	Aircraft Communication Addressing and Reporting System (ACARS) theory, components, and operation.	

Aircraft Fuel Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.45	Hazards associated with fuel system maintenance.	
2015.46	Fuel system contamination.	
2015.47	Hazards associated with fuel spills.	
2015.48	Hazards associated with performing fuel system maintenance requiring fuel tank entry.	
2015.49	Failure to observe proper safety procedures when defueling aircraft.	

Aircraft Electrical Systems		Complete
Content Skill Sets		Knowledge/ Performance
2015.50	Inverter systems.	
2015.51	Aircraft wiring sizes, types, and selection.	
2015.52	Derating factors in switch selection.	
2015.53	Aircraft wiring shielding.	

Ice and Rain Control Systems

Complete

Content Skill Sets

Knowledge/
Performance

2015.54	Inspect and operationally check pitot-static anti-ice system.	
2015.55	Inspect and/or operationally check deicer boot.	
2015.56	Clean a pneumatic deicer boot.	
2015.57	Troubleshoot an electrically-heated pitot system.	

Course Description: This course introduces the student to the knowledge base and technical skills of the Plumbing industry. Plumbing I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets in the fundamentals of Plumbing such as Introduction to the Plumbing Profession and Plumbing Safety. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2081.01	Demonstrate personal safety, including personal protective equipment (PPE).	
2081.02	Demonstrate work environment safety.	
2081.03	Demonstrate Tool Safety.	
2081.04	Demonstrate proper Trenching methods.	

General Plumbing Practices		Complete
Content Skill Sets		Knowledge/ Performance
2081.05	Identify and use Plumbing tools.	
2081.06	Interpret an isometric view of a drain, waste, and vent (DWV) system.	
2081.07	Identify plumbing materials and fittings.	
2081.08	Interpret and comply with general plumbing practices.	
2081.09	Interpret manufacturer's specifications.	
2081.10	Identify plumbing terminology.	
2081.11	Identify plumbing symbols.	

Plumbing Service and Repair		Complete
Content Skill Sets		Knowledge/ Performance
2081.12	Display ethical practices in service and repair.	

Course Description: Plumbing II will continue to build student skill sets in areas such as Plumbing Tools; Introduction to Plumbing Math; Introduction to Plumbing Drawings; Plastic Pipe and Fittings; Copper Pipe and Fittings; Cast-Iron Pipe and Fittings; Carbon Steel Pipe and Fittings; Corrugated Stainless Steel Tubing; Fixtures and Faucets; Introduction to Drain, Waste, and Vent (DWV) Systems; and Introduction to Water Distribution Systems. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Plumbing Math		Complete
Content Skill Sets		Knowledge/ Performance
2082.01	Use formulas.	
2082.02	Add, subtract, multiply, and divide whole numbers and fractions.	
2082.03	Convert measurements.	
2082.04	Calculate slope and angles with a builder's level/laser.	
2082.05	Size drain/waste lines and storm drains.	

General Plumbing Practices		Complete
Content Skill Sets		Knowledge/ Performance
2082.06	Demonstrate blueprint reading.	
2082.07	Interpret an isometric view of a drain, waste, and vent (DWV) system.	
2082.08	Identify plumbing materials and fittings.	
2082.09	Identify plumbing protection methods (i.e., fire caulk, nail plates).	
2082.10	Interpret manufacturer's specifications.	
2082.11	Testing of Plumbing systems.	

Joining Pipes and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
2082.12	Join copper pipes, tubes, and fittings.	
2082.13	Join plastic pipes and fittings.	
2082.14	Join steel pipes and fittings.	
2082.15	Join cast iron pipes and fittings.	

Drainage		Complete
Content Skill Sets		Knowledge/ Performance
2082.16	Install drain/waste lines and storm drains (i.e., interior and exterior).	
2082.17	Describe sizing of basic drainage systems.	
2082.18	Calculate proper pitch.	
2082.19	Describe purpose and appropriate locations for clean-out.	

Vent Installation		Complete
Content Skill Sets		Knowledge/ Performance
2082.20	Install a vent system for soil or waste drainage.	
2082.21	Differentiate between types of vents and venting systems.	

Traps		Complete
Content Skill Sets		Knowledge/ Performance
2082.22	Exhibit knowledge of trap function, installation, and placement.	
2082.23	Distinguish between approved and non-approved traps.	
2082.24	Identify trap components.	
2082.25	Identify causes and prevention for trap seal loss.	

Plumbing Service and Repair		Complete
Content Skill Sets		Knowledge/ Performance
2082.26	Display ethical practices in service and repair.	
2082.27	Unclog drains and traps.	

Apprenticeship Awareness		Complete
Content Skill Sets		Knowledge/ Performance
2082.28	Apprenticeship Basics.	

What is Apprenticeship?		Complete
Content Skill Sets		Knowledge/ Performance
2082.29	Benefits of Apprenticeships.	
2082.30	Businesses and Partners.	
2082.31	Common Apprenticeship Myths.	

Course Description: Plumbing III will continue to build student skill sets in areas of Plumbing Math Two; Reading Commercial Drawings; Hangers, Supports, Structural Penetrations, and Fire Stopping; Installing and Testing DWV Piping; Installing Roof, Floor, and Area Drains; and Types of Valves. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Plumbing Math		Complete
Content Skill Sets		Knowledge/ Performance
2083.01	Use formulas.	

General Plumbing Practices		Complete
Content Skill Sets		Knowledge/ Performance
2083.02	Demonstrate Blueprint Reading.	
2083.03	Interpret isometric view of drain, waste, vent (DWV) system.	
2083.04	Identify plumbing materials and fittings.	
2083.05	Identify plumbing pipe protection methods (i.e., fire caulk, nail plates).	
2083.06	Interpret and comply with general plumbing practices.	
2083.07	Interpret manufacturer's specifications.	
2083.08	Testing of plumbing systems.	

Vent Installation		Complete
Content Skill Sets		Knowledge/ Performance
2083.09	Install a vent system for soil or waste drainage.	
2083.10	Differentiate between types of vents and venting systems.	

Water Supply and Distribution		Complete
Content Skill Sets		Knowledge/ Performance
2083.11	Lay out/rough-in water service and distribution lines.	
2083.12	Install water lines, including water hammer arrestors and/or air chambers.	
2083.13	Identify various valve types and required locations.	

2083.14	Identify cross-connection and back-flow devices and functions.	
---------	--	--

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
2083.15	Apprenticeships Used for Exploitation.	
2083.16	Examples of early Apprenticeships.	
2083.17	Apprenticeship Expansion in the Industrial Revolution.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
2083.18	Modern Apprenticeship programs.	
2083.19	Support of Apprenticeship Programs today.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
2083.20	Simulated Workplace Manual.	

Course Description: Plumbing IV will continue to build student skill sets in areas of Installing and Testing Water Supply Piping; Installing Fixtures, Valves and Faucets; Introduction to Electricity; Installing Water Heaters; Fuel Gas Systems; and Servicing of Fixtures, Valves and Faucets. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Joining Pipes and Fittings

Complete

Content Skill Sets

Knowledge/
Performance

2084.01 | Join dissimilar materials AR2145 Soldering & Flaring.

Hot Water Systems

Complete

Content Skill Sets

Knowledge/
Performance

2084.02 | Install basic types of water heaters (i.e., electric and gas).

2084.03 | Install and identify purpose of pressure/temperature relief valve on a water heater.

2084.04 | Identify water heater components (i.e., electric and gas).

2084.05 | Display proper venting of a gas water heater.

Install Fixtures

Complete

Content Skill Sets

Knowledge/
Performance

2084.06 | Install kitchen and lavatory fixtures.

2084.07 | Install water closets.

2084.08 | Install bathtub/shower.

2084.09 | Install faucets.

2084.10 | Install urinals.

Plumbing Service and Repair

Complete

Content Skill Sets

Knowledge/
Performance

2084.11 | Repair washer and washer-less type faucets.

2084.12 | Display ethical practices in service and repair.

2084.13 | Replace ball cocks and flush valves.

2084.14	Unclog drains and traps.	
2084.15	Replace kitchen plumbing appliances.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
2084.16	Unions working with Contractors in Construction Trades.	
2084.17	Construction Trades Unions in West Virginia with Apprenticeship Programs.	
2084.18	Apprenticeship opportunities in Construction Trades.	
2084.19	Applying for Apprenticeship in the Construction Trades.	
2084.20	Pre-job Training.	
2084.21	Working on the Jobsite.	
2084.22	Working with your Supervisor and Others.	
2084.23	Harassment and Discrimination.	

Are You Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
2084.24	Qualities of a successful Apprentice.	
2084.25	Interviewing for Apprenticeships in Construction.	
2084.26	Interviewing tips for Construction Apprenticeships.	
2084.27	Common Interview Questions.	

Cabinet Construction**Course #: 2124**

Wood Properties	Complete
Content Skill Sets	Knowledge/ Performance
2124.1 Wood properties.	
2124.2 Classify wood by species, grain structure, color and hardness (hardwood and softwood).	
2124.3 Investigate the mechanical properties of wood.	
2124.4 Classify wood and wood products for specific applications in cabinet construction.	
2124.5 Select woods that may be used to substitute for other species.	

Cabinet Component Manufacturing	Complete
Content Skill Sets	Knowledge/ Performance
2124.6 Cabinetry styles and how to fabricate cabinet components with a variety of wood joints.	
2124.7 Distinguish between traditional, provincial, and contemporary designs.	
2124.8 Lay out and cut cabinet frame components using various joints.	
2124.9 Lay out and cut end, bottom, and top panels.	
2124.10 Lay out and cut countertops, backsplashes, trim and molding.	
2124.11 Lay out and cut drawers.	
2124.12 Lay out and cut solid and paneled doors.	

Cabinet Assembly Operations	Complete
Content Skill Sets	Knowledge/ Performance
2124.13 Cabinet assembly operations.	
2124.14 Assemble cabinet components using a variety of clamps and clamping techniques.	
2124.15 Assemble components using dowels, biscuits, and wood joints.	
2124.16 Construct cabinet components with and without glue and fastening devices.	
2124.17 Install hardware pulls, knobs, and hinges.	

2124.18 Install trim, molding, glass panels, surface laminates and covers.

NOTES:

Course Description: This course introduces the student to the knowledge base and technical skills of the Millwork and Cabinetmaking industry. Millwork and Cabinetmaking I begins with the NCCER Core curriculum which is a prerequisite to all Level I completions. The students will complete modules in Basic Safety; Introduction to Construction Math; Introduction to Hand Tools; Introduction to Power Tools; Introduction to Construction Drawings; Basic Rigging; Basic Communication Skills; Basic Employability Skills; and Introduction to Materials Handling. Students will then begin developing skill sets in the fundamentals of the Millwork and Cabinetmaking such as Introduction to the Trade; and Woods and Materials Used in Cabinet Construction. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skillsets.

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2126.01	Apply shop and personal safety rules and procedures, including appropriate personal protective equipment (PPE).	
2126.02	Identify minor First Aid treatment procedures.	
2126.03	Apply fire and electrical Safety rules and procedures.	
2126.04	Identify SDS related issues and information.	

Hand and Portable Power Tools		Complete
Content Skill Sets		Knowledge/ Performance
2126.05	Identify or demonstrate proper use and function of portable power tools.	
2126.06	Identify or demonstrate proper use and function of fastening tools.	
2126.07	Identify or demonstrate proper use and function of portable sanders.	
2126.08	Identify or demonstrate proper use and function of portable routers.	
2126.09	Identify or demonstrate proper use and function of hand tools.	
2126.10	Identify or demonstrate proper use and function of portable drills and drivers.	

Design and Layout		Complete
Content Skill Sets		Knowledge/ Performance
2126.11	Interpret blueprints and specifications.	
2126.12	Prepare and interpret shop drawings/rough sketches.	
2126.13	Prepare and interpret detailed drawings.	
2126.14	Prepare a cut list or bill of material.	

Estimating and Measuring**Complete****Content Skill Sets****Knowledge/
Performance**

2126.15 Read scales and measurements.

Stationary Saws**Complete****Content Skill Sets****Knowledge/
Performance**

2126.16 Identify or demonstrate proper use of stationary saws.

2126.17 Remove and replace stationary saw blades.

Boring Machines**Complete****Content Skill Sets****Knowledge/
Performance**

2126.18 Identify or demonstrate proper use of boring machines.

2126.19 Select and use appropriate boring machine bits.

Milling**Complete****Content Skill Sets****Knowledge/
Performance**

2126.20 Identify or demonstrate proper use of planers and jointers.

2126.21 Identify or demonstrate proper use of shapers and stationary routers.

2126.22 Identify or demonstrate proper use of wood lathes.

2126.23 Identify or demonstrate proper use of stationary sanders.

Course Description: Millwork and Cabinetmaking II will continue to build student skill sets in areas such as Shop Tools Used in Cabinetmaking; Joints; Assembling the Cabinet; and Sanding and Finishing. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Milling		Complete
Content Skill Sets		Knowledge/ Performance
2127.01	Prepare rough stock.	

Assembly		Complete
Content Skill Sets		Knowledge/ Performance
2127.02	Identify and demonstrate methods of case construction.	
2127.03	Identify and assemble joints.	
2127.04	Identify and demonstrate methods of face frame construction.	
2127.05	Select and install hardware and accessories.	
2127.06	Identify and use various fasteners.	

Design and Layout		Complete
Content Skill Sets		Knowledge/ Performance
2127.07	Identify and meet industry standards.	
2127.08	Identify types of joints and their uses.	

Finishing		Complete
Content Skill Sets		Knowledge/ Performance
2127.09	Identify and apply various finishing materials.	
2127.10	Safely use and store finishing materials.	
2127.11	Safely use finishing tools and equipment.	

Hand and Portable Power Tools

Complete

Content Skill Sets		Knowledge/ Performance
2127.12	Identify or demonstrate proper use and function of portable power tools.	
2127.13	Identify or demonstrate proper use and function of fastening tools.	
2127.14	Identify or demonstrate proper use and function of portable sanders.	
2127.15	Identify or demonstrate proper use and function of portable routers.	
2127.16	Identify or demonstrate proper use and function of hand tools.	
2127.17	Identify or demonstrate proper use and function of portable drills and drivers.	

Apprenticeship Awareness

Complete

Content Skill Sets		Knowledge/ Performance
2127.18	Apprenticeship basics.	

What is Apprenticeship?

Complete

Content Skill Sets		Knowledge/ Performance
2127.19	Benefits of Apprenticeship.	
2127.20	Apprenticeship Components and Models.	
2127.21	Businesses and Partners.	
2127.22	Common Apprenticeship Myths.	

Course Description: Millwork and Cabinetmaking III will continue to build student skill sets in areas of Applying Plastic Laminate to a Countertop; Cabinet Doors; and Cabinet Drawers. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Estimating and Measuring		Complete
Content Skill Sets		Knowledge/ Performance
2128.01	Calculate quantities.	
2128.02	Estimate labor and material costs.	

Assembly		Complete
Content Skill Sets		Knowledge/ Performance
2128.03	Identify and assemble various styles of door construction.	
2128.04	Identify and assemble various types of drawer construction.	
2128.05	Apply laminates, veneers, and countertops.	

History of Apprenticeship		Complete
Content Skill Sets		Knowledge/ Performance
2128.06	Apprenticeship used for Exploitation.	
2128.07	Examples of early Apprenticeships.	
2128.08	Apprenticeship Expansion in the Industrial Revolution.	

Apprenticeship Programs Today		Complete
Content Skill Sets		Knowledge/ Performance
2128.09	Modern Apprenticeship Programs.	
2128.10	Support of Apprenticeship Programs.	
2128.11	Safely use finishing tools and equipment.	

Code of Conduct		Complete
Content Skill Sets		Knowledge/ Performance
2128.12	Simulated Workplace Manual.	

Course Description: Millwork and Cabinetmaking IV will continue to build student skill sets in areas of Cabinet Doors and Drawer Hardware; Cabinet Shelves and Shelf Hardware; and Mass Production Cabinetmaking. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Assembly		Complete
Content Skill Sets		Knowledge/ Performance
2129.01	Select and install hardware and accessories.	
2129.02	Identify and assemble various styles of door construction.	
2129.03	Identify and install shelves and shelf hardware.	
2129.04	Identify and use various fasteners.	
2129.05	Identify industry standards for efficient mass production.	

Installation		Complete
Content Skill Sets		Knowledge/ Performance
2129.06	Identify industry standards for installation.	
2129.07	Install a base cabinet.	
2129.08	Install a wall cabinet.	

Unions and Apprenticeship Programs		Complete
Content Skill Sets		Knowledge/ Performance
2129.09	Unions working with Contractors in Construction trades.	
2129.10	Construction Trades Unions in West Virginia with Apprenticeship Programs.	
2129.11	Apprenticeship Opportunities in Construction trades.	
2129.12	Applying for Apprenticeship in the Construction trades.	
2129.13	Pre-Job Training.	
2129.14	Working on the Jobsite.	
2129.15	Working with your Supervisor and Others.	
2129.16	Harassment and Discrimination.	

Are you Apprenticeship Ready?

Are you Apprenticeship Ready?		Complete
Content Skill Sets		Knowledge/ Performance
2129.17	Qualities of a Successful Apprentice.	
2129.18	Interviewing for Apprenticeships in Construction.	
2129.19	Interviewing Tips for Construction Apprenticeships.	
2129.20	Common Interview Questions.	

Course Description: This course introduces the student to the base and technical skills in Soldering and Flaring Copper Tubing. Areas of study include assembly, installation and repair of piping systems using copper tubing and fittings. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to soldering and flaring copper tubing.

Copper Tubing and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
2145.1	Soldering and flaring copper tubing	
2145.2	Select the common types of materials and schedules used with copper tubing	
2145.3	Select the common types of fittings and valves used with copper tubing	
2145.4	Show the ability to hand and support copper tubing	
2145.5	Measure, cut, ream, and join copper tubing	
2145.6	Assemble a flare joint, swage joint, and a compression joint	
2145.7	Show the ability to use pro-press and shark-bite fittings	
2145.8	Test a copper tubing system	

NOTES:

Course Description: This course introduces the student to the knowledge base and technical skills for all courses in Gas Piping. Areas of study include designing, assembling, installing and repairing pipes and fittings used in a gas piping system, as well as receiving flexible gas piping certifications during the course. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding 25 of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to gas piping.

Carbon Steel Pipe and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
2146.1	Carbon steel pipe and fittings	
2146.2	Choose the common types of materials and schedules used with carbon steel pipe	
2146.3	Select fittings and valves used with carbon steel pipe	
2146.4	Hang and support carbon steel pipe	
2146.5	Measure, cut, and join carbon steel pipe	
2146.6	Test a carbon steel piping system	
2146.7	Use the Fuel Gas Code to cite the requirements for carbon steel pipe	

Flexible Gas Pipe and Fittings		Complete
Content Skill Sets		Knowledge/ Performance
2146.8	Flexible gas pipe and fittings	
2146.9	Compare the common types of flexible gas piping materials	
2146.10	Choose the common types of fittings and valves used in a flexible gas piping system	
2146.11	Hang and support flexible gas piping	
2146.12	Use Fuel Gas Code to cite the requirements for flexible gas piping	
2146.13	Test a flexible gas piping system	

Fuel Gas Systems

Complete

Content Skill Sets

**Knowledge/
Performance**

2146.14 Fuel gas systems

2146.15 Evaluate the major components of natural gas, liquified petroleum gas, and fuel oil gas systems

2146.16 Determine the proper procedures for hooking up appliances in a fuel gas system

2146.17 Use the fuel gas code book to design, size, and test a fuel gas system

NOTES:

Course Description: This course introduces the student to the knowledge base and technical skills concepts in Drains, Waste and Vent Systems. Areas of study include assembly, installation and repair of DWV systems, types of vents and indirect and special waste. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to drain, waste and vent systems.

Introduction to Drains, Waste, and Vents		Complete
Content Skill Sets		Knowledge/ Performance
2148.1	Drains, traps, fittings, and DWV systems	
2148.2	Show how waste moves from a fixture through the drain system to the environment	
2148.3	Determine the major components and functions of drainage systems	
2148.4	Assemble different types of traps	
2148.5	Select various types of DWV fittings	
2148.6	Show the components of building a sewer	
2148.7	Assemble a DWV system	
2148.8	Test a DWV system	

Venting Systems Installations		Complete
Content Skill Sets		Knowledge/ Performance
2148.9	Assembling and testing venting systems	
2148.10	Develop an understanding of the scientific principles of venting	
2148.11	Create a vent system according to local codes	
2148.12	Sketch the different types of vents	
2148.13	Assemble the different types of vent systems	

Water Systems

Water Systems		Complete
		Knowledge/ Performance
2148.14	Waste systems	
2148.15	Determine the reasons for using an indirect system	
2148.16	Discuss the requirement for receptors and backflow preventers	
2148.17	Install an indirect waste system	
2148.18	Tell why we need special waste systems	
2148.19	Determine the requirements for using indirect and special waste disposal systems	

NOTES:

Course Description: This course introduces the student to the knowledge base and technical skills related to Plumbing Fixtures. Areas of study include identifying various types of plumbing fixtures and faucets and how to properly install and test plumbing fixtures. Emphasis will be placed on career exploration, job seeking skills and personal and professional ethics. Safety instruction is integrated into all activities. Students will utilize problem-solving techniques and participate in laboratory activities to develop an understanding of course concepts, and teachers should provide each student with real world learning opportunities and instruction related to the plumbing profession.

Fixtures and Faucets		Complete
Content Skill Sets		Knowledge/ Performance
2149.1	Fixtures and faucets	
2149.2	Compare the basic types of plumbing fixtures and fixture materials	
2149.3	Assemble common types of sinks and faucets	
2149.4	Compare common bathtubs and showers	
2149.5	Assemble and set a water closet and urinal	
2149.6	Differentiate between drinking fountains and water coolers	
2149.7	Identify types of garbage disposals and domestic dishwashers	
2149.8	Explain the function, components, and operation of sewage and sump pumps	

Water Heaters		Complete
Content Skill Sets		Knowledge/ Performance
2149.9	Water heaters	
2149.10	Show the basic operation of water heaters	
2149.11	Diagnose and repair an electric water heater	
2149.12	Diagnose and repair a gas water heater	
2149.13	Diagnose and repair a tankless water heater	
2149.14	Use the local plumbing code to cite requirements for installing a water heater.	

NOTES:

Course Description: This course is designed to provide knowledge and skills needed in the fire service field including exploration of fire service as a system. Students will: analyze and demonstrate the use of fire services equipment; demonstrate basic firefighting techniques; engage in incident management communications; demonstrate the correct use of personal protective equipment; analyze command structure within the fire service; analyze various aspects of safety and health in the fire service environment; explore the legal and ethical responsibilities of the fire service; and gain an appreciation for the role that the fire service plays in the day-to-day safety and security of every community. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Fire Service Orientation		Complete
Content Skill Sets		Knowledge/ Performance
2202.01	Identify the various requirements for Fire Fighters related to age, education, physical fitness, etc.	
2202.02	Compare and contrast the roles and responsibilities of Fire Fighter I & II.	
2202.03	Examine the organization of the fire service such as chain of command, etc.	
2202.04	Discuss the history of American Fire Service, building codes, payment for fire service, etc.	

Fire Fighter Safety		Complete
Content Skill Sets		Knowledge/ Performance
2202.05	Identify causes of fire fighter deaths and injuries.	
2202.06	Discuss methods of injury prevention.	
2202.07	Examine safety standards and procedures.	
2202.08	Demonstrate safety methods for various situations such as during training, emergency response, at emergency incidents, at the fire station and outside the workplace.	
2202.09	Examine personal protective equipment including the structural firefighting ensemble and specialized protective clothing.	
2202.10	Determine respiratory hazards of fires and other toxic environments.	
2202.11	Examine situations requiring breathing apparatus.	
2202.12	Analyze types of breathing apparatus.	
2202.13	Demonstrate inspection and maintenance of SCBA's.	

Fire Service Communications**Complete****Content Skill Sets****Knowledge/
Performance**

2202.14	Examine communications facility requirements and equipment.	
2202.15	Discuss receiving and dispatching emergency calls.	
2202.16	Examine radio equipment and operations.	
2202.17	Demonstrate methods of obtaining, coding and recording necessary information.	

Incident Command System**Complete****Content Skill Sets****Knowledge/
Performance**

2202.18	Relate the history of the ICS.	
2202.19	Discuss characteristics of the ICS such as jurisdictional authority, all-risk and all-hazard system, unity of command, etc.	
2202.20	Define common terms relating to ICS.	
2202.21	Examine consolidated incident action plans.	
2202.22	Describe designated incident facilities.	

Fire Behavior**Complete****Content Skill Sets****Knowledge/
Performance**

2202.23	Analyze the chemistry of fire and combustion.	
2202.24	Describe states of matter, types of fuels and types of energy.	
2202.25	Describe the classification of fires.	
2202.26	Compare and contrast the characteristics of solid-, liquid- and gas-fuel fires.	
2202.27	Determine the key attributes of smoke and what is influencing them.	

Building Construction**Complete****Content Skill Sets****Knowledge/
Performance**

2202.28	Examine the interactions between building construction, occupancy and contents.	
2202.29	Describe occupancy classifications and associated building code requirements.	
2202.30	Analyze risks of various building contents.	
2202.31	Identify types of construction materials and the factors that affect the fire behavior of these materials.	
2202.32	Describe five classifications of building construction and how they are related to fire protection and fire behavior.	
2202.33	Examine the major components of a building including the: foundations; floors and ceilings; roofs; trusses; walls; doors and windows; and interior finishes and floor coverings.	
2202.34	Relate the various components to safety risk.	
2202.35	Explain the importance of pre-incident planning.	
2202.36	Investigate safe operating procedures including personal accountability systems and emergency communication procedures.	
2202.37	Discuss fire fighter survival procedures including maintaining orientation, self-rescue and safe havens.	
2202.38	Demonstrate the rescue of a downed fire fighter.	
2202.39	Describe the factors, causes and need for rehabilitation.	
2202.40	Analyze the incidents affecting fire fighter rehabilitation.	
2202.41	Describe how rehabilitation works and the role of personal responsibility in rehabilitation.	
2202.42	Describe examples of critical incidents.	
2202.43	Explain critical incident stress debriefing.	
2202.44	Examine the functions of various tools.	

Course Description: This course is designed to provide knowledge and skills needed in the fire service field including the basic fundamentals of firefighting. Students will demonstrate: proper procedures used in responding to a structure fire; safety procedures, lifting and carrying of equipment; forcible entry; rescue; use of radio equipment; working in hazardous environments; fire attack; advancement of hose lines and ventilation; disabling utilities; set-up of supply lines and fire apparatus; and hazardous materials awareness. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

General Law, Public Safety and Security Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2203.01	Identify and use appropriate terminology for the law and public safety fields	
2203.02	Demonstrate knowledge, skills, and abilities in the law and public safety fields	

Emergency and Fire Management Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2203.03	Identify and apply National Incident Management Systems (NIMS) protocols	
2203.04	Identify and apply the principles of fire science	

Academic Foundations		Complete
Content Skill Sets		Knowledge/ Performance
2203.05	Apply mathematical skills in a law and public safety environment	
2203.06	Apply science skills in a law and public safety environment	
2203.07	Apply reading skills in a law and public safety environment	
2203.08	Apply writing skills in a law and public safety environment	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
2203.09	Analyze the impact on law and public safety based on technological advances	
2203.10	Describe the relationships, roles, and responsibilities among law and public safety professionals	

Ethics and Legal Responsibilities

Complete

Content Skill SetsKnowledge/
Performance

2203.11 Identify ethical issues and demonstrate ethical behavior in law and public safety situations

2203.12 Apply appropriate laws, regulations, and industry standards in law and public safety situations

Communications

Complete

Content Skill SetsKnowledge/
Performance

2203.13 Interpret and use tables, charts, and figures to support written and oral communication

Information Technology Applications

Complete

Content Skill SetsKnowledge/
Performance

2203.14 Use word processing, presentation software, and email applications to prepare communications

2203.15 Use spreadsheet and database applications to manage and communicate data and information

Problem Solving, Critical Thinking and Decision Making

Complete

Content Skill SetsKnowledge/
Performance

2203.16 Use problem solving and critical thinking skills to locate credible sources of information about problems and determine appropriate methods for investigating causes.

2203.17 Use problem solving and critical thinking skills to determine root causes of problems and to suggest and evaluate solutions

Leadership and Teamwork

Complete

Content Skill SetsKnowledge/
Performance

2203.18 Apply leadership qualities to improve the quality of work and the work environment.

2203.19 Work effectively in a team environment to improve the quality of work and the work environment.

Safety, Health and Environmental

Complete

Content Skill SetsKnowledge/
Performance

2203.20 Demonstrate appropriate emergency and first aid knowledge and procedures for law and public safety occupations

2203.21 Identify and practice appropriate environmental procedures for law and public safety occupations

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
2203.22	Demonstrate appropriate workplace behaviors related to a career in law and public safety	
2203.23	Pursue career development skills to advance in law and public safety careers	

West Virginia Standards

Firefighting Tools and Equipment		Complete
Content Skill Sets		Knowledge/ Performance
2203.24	Examine the purposes and uses of portable fire extinguishers and special extinguishing agents	
2203.25	Relate the classes of fires to the use of portable fire extinguishers	
2203.26	Describe the classifications of fire extinguishers	
2203.27	Explain the labeling and placement of fire extinguishers	
2203.28	Demonstrate the methods of fire extinguishment	
2203.29	Identify the types of extinguishing agents	
2203.30	Describe fire extinguisher design and characteristics	
2203.31	Explain the use and care of fire extinguishers	
2203.32	Describe safety and other condition of operating tools and equipment	
2203.33	Examine the functions of various tools	
2203.34	Discuss the phases of use of tools	
2203.35	Define tool staging	
2203.36	Describe the cleaning and inspecting of various types of tools	
2203.37	Describe types of ropes, rope materials and rope construction	
2203.38	Explain how this affect rope strength	
2203.39	Demonstrate rope maintenance	
2203.40	Describe and demonstrate types of knots	
2203.41	Examine various methods of hoisting	
2203.42	Describe the functions of ladders	
2203.43	Examine ladder construction and types of ladders	
2203.44	Describe the inspection, maintenance and service testing of portable ladders	
2203.45	Discuss ladder safety	
2203.46	Describe the use of portable ladders	
2203.47	Analyze procedures for a chimney check	
2203.48	Examine principles of fire hydraulics such as flow and pressure	
2203.49	Explain the functions and construction of fire hoses	
2203.50	Explain hose appliances	
2203.51	Discuss the methods for hose rolls	

2203.52	Examine methods of fire hose evolutions	
2203.53	Define types of nozzles	
2203.54	Explain foam classifications, equipment and application techniques	

Response Techniques		Complete
Content Skill Sets		Knowledge/ Performance
2203.55	Describe various response techniques including riding and dismounting an apparatus	
2203.56	Describe procedures for controlling utilities and other necessities for arrival at the incident scene	
2203.57	Discuss size-up evaluations and incident action plans	
2203.58	Examine forcible entry situations and tools for various types of entry	

Search and Rescue		Complete
Content Skill Sets		Knowledge/ Performance
2203.59	Search and rescue operations and techniques. Search safety	

Ventilation		Complete
Content Skill Sets		Knowledge/ Performance
2203.60	Explain the benefits of proper ventilation	
2203.61	Discuss considerations relating to backdraft and flashback	
2203.62	Examine factors affecting ventilation	
2203.63	Explain how building construction affects ventilation	
2203.64	Discuss tactical principles for venting	
2203.65	Examine types of ventilation including horizontal, mechanical and vertical	
2203.66	Demonstrate equipment maintenance	

Water Supply		Complete
Content Skill Sets		Knowledge/ Performance
2203.67	Describe sources of water	
2203.68	Examine water treatment and distribution systems	
2203.69	Explain types of fire hydrants	
2203.70	Discuss location, operation and maintenance of fire hydrants	

Salvage and Overhaul

Salvage and Overhaul		Complete
Content Skill Sets		Knowledge/ Performance
2203.71	Examine salvage and overhaul safety principles and practices	
2203.72	Describe lighting equipment	
2203.73	Examine salvage tools	
2203.74	Discuss salvage techniques to limit/prevent water, smoke and heat damage	
2203.75	Describe overhaul techniques and tools	

Course Description: This course is designed to provide knowledge and skills needed in the fire service field including: proper procedures for incident response involving automobile rescue, extrication, and fires; the role of emergency medical care in fire service; and basic emergency medical care. Students will analyze emergency scenes to develop and execute emergency action plans; cover a fire scene and demonstrate proper procedure to preserve property and the chain of evidence when presented with evidence of criminal activity; analyze the role of the first responder to acts of terrorism; and analyze and demonstrate the role of fire service in fire prevention and education in the community. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

General Law, Public Safety and Security Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2205.01	Identify and use appropriate terminology for the law and public safety fields.	
2205.02	Demonstrate knowledge, skills, and abilities in the law and public safety fields.	
2205.03	Describe risk management practices that minimize liability.	

Emergency and Fire Management Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2205.04	Identify and apply National Incident Management Systems (NIMS) protocols.	
2205.05	Identify and apply the principles of fire science.	
2205.06	Recognize and respond appropriately to hazardous materials incidents.	
2205.07	Identify appropriate emergency vehicle procedures.	
2205.08	Identify types of and procedures for entrapment and extrication.	

Systems		Complete
Content Skill Sets		Knowledge/ Performance
2205.09	Analyze the impact on law and public safety based on technological advances.	
2205.10	Describe the relationships, roles, and responsibilities among law and public safety professionals.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance

2205.11	Identify ethical issues and demonstrate ethical behavior in law and public safety situations.	
2205.12	Apply appropriate laws, regulations, and industry standards in law and public safety situations.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
2205.13	Communicate using appropriate language and level, including using appropriate techniques for communicating with special needs individuals (e.g., hard of hearing).	
2205.14	Apply listening skills and interpret verbal and nonverbal behaviors to enhance communication with coworkers and the public.	

Information Technology Applications		Complete
Content Skill Sets		Knowledge/ Performance
2205.15	Use word processing, presentation software, and email applications to prepare communications.	
2205.16	Use spreadsheet and database applications to manage and communicate data and information.	

Problem Solving, Critical Thinking and Decision Making		Complete
Content Skill Sets		Knowledge/ Performance
2205.17	Use problem solving and critical thinking skills to locate credible sources of information about problems and determine appropriate methods for investigating causes.	
2205.18	Use problem solving and critical thinking skills to determine root causes of problems and to suggest and evaluate solutions.	

Leadership and Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
2205.19	Apply leadership qualities to improve the quality of work and the work environment.	
2205.20	Work effectively in a team environment to improve the quality of work and the work environment.	

Safety, Health and Environmental		Complete
Content Skill Sets		Knowledge/ Performance
2205.21	Identify and practice appropriate safety and health procedures for law and public safety occupations.	
2205.22	Demonstrate appropriate emergency and first aid knowledge and procedures for law and public safety occupations.	
2205.23	Identify and practice appropriate environmental procedures for law and public safety occupations.	

Employability and Career Development		Complete
Content Skill Sets		Knowledge/ Performance
2205.24	Demonstrate appropriate workplace behaviors related to a career in law and public safety.	
2205.25	Pursue career development skills to advance in law and public safety careers.	

West Virginia Standards

Fire Fighter Survival and Rehabilitation		Complete
Content Skill Sets		Knowledge/ Performance
2205.26	Demonstrate the rescue of a downed fire fighter.	
2205.27	Analyze the incidents affecting fire fighter rehabilitation.	
2205.28	Describe how rehabilitation works and the role of personal responsibility in rehabilitation.	
2205.29	Describe examples of critical incidents.	
2205.30	Explain critical incident stress debriefing.	
2205.31	Examine the functions of various tools.	

Wildland and Ground Fires		Complete
Content Skill Sets		Knowledge/ Performance
2205.32	Describe the fire triangle.	
2205.33	Discuss the effect of weather and topography on wildland fires.	
2205.34	Analyze the anatomy of wildland fire.	
2205.35	Explain the methods of extinguishing wildland fires including types of attacks.	
2205.36	Describe the fire apparatus used for wildland fires.	
2205.37	Discuss safety issues and the use of personal protective equipment for wildland fires.	

Fire Suppression		Complete
Content Skill Sets		Knowledge/ Performance
2205.38	Compare and contrast offensive vs. Defensive operations.	
2205.39	Demonstrate hose line operations.	
2205.40	Discuss protecting various exposures.	
2205.41	Explain methods for attacking and overhauling vehicle fires.	
2205.42	Describe the fire apparatus used for wildland fires.	
2205.43	Discuss the hazards and suppression of fires relating to flammable liquids and gas and electrical fires.	

Pre-incident Planning		Complete
Content Skill Sets		Knowledge/ Performance
2205.44	Identify target hazards and develop a pre- incident plan.	
2205.45	Examine a pre-incident survey.	
2205.46	Discuss tactical information regarding various pre-incident plans including those for search and rescue, forcible entry, ladder placement and ventilation.	
2205.47	Examine occupancy consideration and settings.	

Vehicle Rescue and Extrication		Complete
Content Skill Sets		Knowledge/ Performance
2205.48	Describe the fire triangle.	
2205.49	Discuss the effect of weather and topography on wildland fires.	
2205.50	Analyze the anatomy of wildland fire.	
2205.51	Explain the methods of extinguishing wildland fires including types of attacks.	
2205.52	Describe the fire apparatus used for wildland fires.	
2205.53	Discuss safety issues and the use of personal protective equipment for wildland fires.	

Hazardous Materials Awareness and Response		Complete
Content Skill Sets		Knowledge/ Performance
2205.54	Analyze methods for recognizing and identifying hazards.	
2205.55	Develop methods for implementing a response.	
2205.56	Demonstrate use of personal protective equipment, scene safety and scene control.	
2205.57	Identify response priorities and actions.	
2205.58	Discuss types and methods of decontamination and the decontamination process.	

Terrorism Awareness		Complete
Content Skill Sets		Knowledge/ Performance
2205.59	Examine various targets and tactics such as infrastructure targets and ecoterrorism.	
2205.60	Describe types of agents and devices such as explosives and incendiary devices and chemical and biological and radiological agents.	
2205.61	Discuss operations such as initial actions, interagency coordination, decontamination, etc.	

Fire Prevention/Education and Cause Determination		Complete
Content Skill Sets		Knowledge/ Performance
2205.62	Examine fire codes.	
2205.63	Describe public fire safety education programs.	
2205.64	Examine fire safety surveys.	
2205.65	Discuss fire investigations.	
2205.66	Explain causes of fires.	
2205.67	Examine how to determine the origin and cause of a fire.	
2205.68	Describe fire-ground operation procedures.	
2205.69	Explain the process for securing and transferring property regarding incendiary fires.	
2205.70	Discuss the characteristics of types of arsonists.	

Fire Detection, Protection and Suppression Systems		Complete
Content Skill Sets		Knowledge/ Performance
2205.71	Describe the components of fire alarm systems for various settings.	
2205.72	Discuss fire alarm functions.	
2205.73	Describe various fire suppression systems.	

Course Description: The Skill Sets in this course focus on knowledge and skills needed in the public safety telecommunication and emergency dispatch field. The course is an elective within the Law and Public Safety and Emergency and Firefighting Management Services Programs of Study.

Emergency Dispatch Basics		Complete
Content Skill Sets		Knowledge/ Performance
2207.01	Explain types of communication centers and the Public Safety Answering Point.	
2207.02	Describe the positions and duties within types of communication centers.	
2207.03	Explore the functions, roles and responsibilities of an effective emergency dispatcher.	
2207.04	Compare and contrast police, fire and emergency medical communications.	
2207.05	Describe crimes and police terms and services and related call-taking and dispatching guidelines.	
2207.06	Explain fire communications terms and services and related call-taking and dispatching guidelines.	
2207.07	Describe emergency medical services and best practices of an emergency medical dispatcher.	
2207.08	Describes types and stages of crisis situations and the place of the dispatcher in the crisis.	
2207.09	Articulate the role of an emergency dispatcher as a member of an agency’s public safety team and relating to the National Incident Command/Management System.	
2207.10	Assess the role of the Public Safety Telecommunicator in and responsibility for first responder safety.	
2207.11	Investigate state and local rules relating to the performance requirements of emergency dispatchers.	
2207.12	Investigate specific legal liability issues related to call-taking and dispatch of emergency responders.	
2207.13	Investigate specific legal liability issues related to mutual and automatic aid and operational recovery planning responses.	
2207.14	Examine specific liability issues related to interaction with other agencies.	
2207.15	Examine concepts such as negligence, abandonment, confidentiality and standard of care.	
2207.16	Examine characteristics of public safety consumers including callers, community members, public/private entities, responders, user-agency personnel, etc.	
2207.17	Discuss issues regarding topography within a local public service area.	
2207.18	Explore the topography within the boundaries of a local public safety service area.	
2207.19	Determine local public safety authorities and resources.	
2207.20	Examine non-traditional public safety service providers such as tribal authorities, military liaisons, port authorities, private/proprietary security forces, etc.	
2207.21	Investigate Incident Command/Integrated Command Systems and Tactical Dispatch Teams.	
2207.22	Use elements of appropriate speech.	
2207.23	Interpret verbal and nonverbal communication.	
2207.24	Apply basic speaking and active listening skills including reflection, restatement and clarification techniques.	
2207.25	Recognize barriers to communication.	

2207.26	Recognize the elements of communication using a sender-receiver model.	
2207.27	Apply speaking and active listening skills.	
2207.28	Demonstrate elements of effective written and electronic communication.	
2207.29	Recognize the importance of courtesy and respect for customers and colleagues and maintain good interpersonal relationships.	
2207.30	Discuss how to adapt communication skills to varied levels of understanding and cultural orientation including diverse age, cultural, economic, ethnic and religious groups.	
2207.31	Distinguish between and report subjective and objective information.	
2207.32	Report relevant information in order of occurrence.	
2207.33	Locate, organize, reference and employ written information from various sources.	
2207.34	Develop and interpret tables and charts to support written and oral communication.	
2207.35	Examine methods for managing stress and other skills of emotional wellness including lifestyle assessment.	
2207.36	Explore principles of Critical Incident Stress Debriefing.	
2207.37	Discuss causes, signs and symptoms and treatment of Post-Traumatic Stress Disorder.	

Public Safety Communication Center Technologies and Systems		Complete
Content Skill Sets		Knowledge/ Performance
2207.38	Examine proper operation of various 9-1-1 systems.	
2207.39	Use Automated Number Identification (ANI) technology.	
2207.40	Use Automated Location Identification (ALI) technology.	
2207.41	Discuss issues relating to wireless/voip technology.	
2207.42	Explore Selective Routing technology.	
2207.43	Explore Private Branch Exchange (PBX) technology.	
2207.44	Utilize Telecommunications Device for the Deaf (TTD/TTY) technology.	
2207.45	Examine call box technology.	
2207.46	Assess considerations regarding dispatch when intra-agency phone systems are involved.	
2207.47	Demonstrate efficient, effective and professional use of public radio systems with all classes of public safety consumers.	
2207.48	Apply typical policies/procedures related to normal and emergency radio-system uses.	
2207.49	Use typical agency approved radio codes and signals efficiently and effectively.	
2207.50	Demonstrate the appropriate use of talk groups or frequency coordination.	
2207.51	Articulate the application of existing interoperability communication plans.	
2207.52	Explore current FCC rules pertaining to the use of public safety radio spectra.	
2207.53	Investigate incident command management systems.	

Call Receiving and Processing		Complete
Content Skill Sets		Knowledge/ Performance
2207.54	Explain the best practices of call taking in terms of required skills, knowledge and attitudes including sequencing.	
2207.55	Explain the use of the 6 W's for call taking basics -- where, what, who, when, why and weapons.	
2207.56	Describe various call types.	
2207.57	Discuss the nature of difficult calls and methods for handling them.	
2207.58	Describe methods for using voice language.	
2207.59	Explain the purposes and methods for courtesy, empathy, explaining, reassuring and other methods of call control.	
2207.60	Discuss the importance of assessing and portraying a call accurately.	
2207.61	Describe methods for documenting various call types, using abbreviations, writing narratives and other necessary recording.	
2207.62	Describe call updating, canceling and transferring practices.	
2207.63	Demonstrate appropriate call receiving and processing best practices in police, fire and emergency medical situations.	
2207.64	Apply concepts related to confidentiality.	
2207.65	Role play worst case scenarios.	

Emergency Medical Concepts and Practices		Complete
Content Skill Sets		Knowledge/ Performance
2207.66	Define medical terms and use appropriate medical abbreviations.	
2207.67	Demonstrate how to obtain indicators of various conditions.	
2207.68	Define shock and explain the symptoms and types.	
2207.69	Demonstrate how to use shock information.	
2207.70	Describe five categories of disorders of the abdomen and their symptoms.	
2207.71	Demonstrate how to use abdominal pain information.	
2207.72	Explain the categories, classifications and sources of burns.	
2207.73	Demonstrate how to use burn information.	
2207.74	Describe chest pain as it relates to the heart and vascular system.	
2207.75	Explain acute causes of chest pain.	
2207.76	Demonstrate how to use chest pain information.	
2207.77	Define diabetes and describe signs and symptoms of a diabetic reaction.	
2207.78	Demonstrate how to use diabetes information.	
2207.79	Explain the effects of electric shock on the human body.	
2207.80	Demonstrate how to use electrocution information.	
2207.81	Differentiate between drowning and near drowning.	
2207.82	Demonstrate how to use drowning information.	
2207.83	Explain neurological disorders and cerebral insults.	

2207.84	Demonstrate how to assess level of consciousness, breathing, seizure and head pain.	
2207.85	Describe types of environmental emergencies and disorders related to exposure.	
2207.86	Demonstrate how to use environmental information.	
2207.87	Contrast normal breathing and respiratory distress.	
2207.88	Describe diseases or conditions that alter normal breathing.	
2207.89	Demonstrate how to use respiratory information.	
2207.90	Explain obstetrical emergencies.	
2207.91	Demonstrate how to assess the stage of labor.	
2207.92	Discuss problems relating to each trimester.	
2207.93	Demonstrate how to use OB information.	
2207.94	Discussion special considerations relating to emergencies affecting children.	
2207.95	Demonstrate how to use pediatric information.	

Emergency Services Resources		Complete
Content Skill Sets		Knowledge/ Performance
2207.96	Review information resources available nationally and locally to the emergency Call Taker such as phone directories, maps, websites, TV stations, etc.	
2207.97	Investigate community stakeholders who can contribute specialized services such as language translation and cultural insights.	

Course Description: The Skill Sets in this course focus on knowledge and skills needed for auto extrication in the fire service field as required by National Fire Protection Association Standards 1006 and 1670.

Vehicle Rescue and Extrication Basics		Complete
Content Skill Sets		Knowledge/ Performance
2208.01	Discuss NFPA standards and other procedures relevant to safe, legal and ethical auto extrication processes.	
2208.02	Explain proper procedures for extrication call receipt and dispatch.	
2208.03	Describe four methods of vehicle power.	
2208.04	Explain hazards associated with various vehicle types.	
2208.05	Describe the parts of a motor vehicle.	
2208.06	Identify two types of motor vehicle frames and their relevance to auto extrication.	
2208.07	Describe the characteristics and classifications of various vehicle types including: passenger; bus; truck; industrial; agricultural; and miscellaneous.	
2208.08	Apply the characteristics of various vehicle types to extrication techniques and situations.	
2208.09	Evaluate dispatch information for appropriate response.	
2208.10	Describe hazards involved in responding to an emergency scene.	
2208.11	Explain the hazards to assess at the scene of vehicle extrication situation.	
2208.12	Describe methods for determining the scope of an incident.	
2208.13	Discuss additional resources that may be available to responders in certain situations.	
2208.14	Relate the steps for scene size-up.	
2208.15	Describe the steps for scene stabilization including reducing, removing and mitigating hazards.	
2208.16	Explain the steps for stabilizing a vehicle after a crash.	
2208.17	Explain the four functions to gain access and disentangle victims.	
2208.18	Discuss issues of physical and mental wellness necessary for success as first responders.	

Rescue and Extrication Equipment		Complete
Content Skill Sets		Knowledge/ Performance
2208.18	Discuss the purpose for rescue and extrication equipment.	
2208.19	Demonstrate the proper use of rescue and extrication equipment.	
2208.20	Explain methods for planning the removal of a victim.	
2208.21	Discuss the purpose for equipment used in providing initial medical care.	
2208.22	Demonstrate the proper use of equipment used in providing initial medical care.	
2208.23	Describe the compartments of rescue vehicles.	

Scene Management and Incident Control		Complete
Content Skill Sets		Knowledge/ Performance
2208.24	Explore roles of various agencies and organization involved in incident response and control.	
2208.25	Determine variables involved in planning for response to extrication calls.	
2208.26	Discuss responsibilities of emergency services personnel in the extrication process.	
2208.27	Explain basic safety procedures for scene control.	
2208.28	Discuss typical control zones for extrication incidents.	
2208.29	Explain typical command and control structures for extrication incidents.	
2208.30	Describe steps for incident termination including emotional processing and documentation.	

Course Description: Skill in this course focus on the professional qualifications required by National Fire Protection Association (NFPA) Standard 1002 for fire apparatus drivers/pump operators in the fire service field.

Fundamentals for Apparatus Drivers/Pump Operators		Complete
Content Skill Sets		Knowledge/ Performance
2209.01	Examine NFPA Standard 1002 4.3 regarding qualifications for fire apparatus/pump operators.	
2209.02	Examine NFPA Standard 1002 4.2 regarding performing routine tests, inspections and preventive servicing and maintenance functions on systems and components of vehicles.	
2209.03	Investigate laws applying to emergency response vehicles.	
2209.04	Discuss the responsibilities of a fire service driver.	
2209.05	Discuss the responsibilities of a pump operator.	
2209.06	Assess limitations of emergency vehicles.	
2209.07	Examine the steps involved in a pre-trip vehicle inspection.	
2209.08	Describe the documentation of a pre-trip vehicle inspection.	
2209.09	Explain the conditions under which an emergency vehicle should be placed out of service.	
2209.10	Describe function and use of the Authority Having Jurisdiction's (AHJ) vehicle preventive maintenance record forms.	
2209.11	Explain routine servicing needs of emergency services vehicles and related record keeping.	
2209.12	Describe service needs that require further investigation by a certified mechanic.	
2209.13	Examine procedures/skills associated with safe and effective driving of various emergency vehicles.	
2209.14	Describe precautions that drivers of emergency services vehicles must take when driving in various weather conditions.	
2209.15	Describe the proper placement of equipment at a hydrant, dump tank, accident scene, drafting site and common scene.	
2209.16	Explain the use of equipment/tools associated with various vehicles in emergency services.	
2209.17	Describe response procedures for various apparatus including types of calls which require their use.	

Apparatus Types		Complete
Content Skill Sets		Knowledge/ Performance
2209.18	Describe the use of various types of fire apparatus pumps.	
2209.19	Describe the components of pumps and their functions.	
2209.20	Describe the performance of various pump operation tasks.	
2209.21	Explain pump operations from various water sources.	
2209.22	Discuss considerations regarding relay pumping operations.	
2209.23	Describe the disengagement of fire apparatus pumps and their return to normal road operation mode.	

West Virginia Standards

Academic Foundation

		Complete
Content Skill Sets		Knowledge/ Performance
2248.1	Label the following topographic terms: medial, lateral, proximal, distal, superior, inferior, interior, posterior, midline, right and left, mid-clavicular, bilateral, and mid-axillary.	
2248.2	Describe and identify the anatomy and function of the following major body systems: respiratory, circulatory, musculoskeletal, nervous, integumentary, digestive, urinary, genital, and endocrine.	
2248.3	Name and label the structures of the respiratory and circulatory systems.	
2248.4	Apply writing skills in law and public safety environments.	
2248.5	Describe the pulmonary ventilation process, including mechanics of ventilation and alveolar ventilation (tidal volumes, dead space, etc.).	
2248.6	Describe the oxygenation process.	
2248.7	Explain both external and internal respiration processes.	
2248.8	Chart the life support chain, aerobic metabolism, and anaerobic metabolism.	
2248.9	Define pathophysiology.	
2248.10	Discuss the pathophysiology of the respiratory and cardiovascular systems.	
2248.11	Describe the terms used to designate the following stages of life: infant, toddlers, preschoolers, school-age children, adolescents (teenagers), early adults, middle adults, and late adults.	
2248.12	Describe the major physiologic and psychosocial characteristics of an infant's life, a toddler and preschooler's life, a school-age child's life, an adolescent's life, an early adult's life, a middle adult's life, and a late adult's life.	

Client Interaction EMT-B Prep

		Complete
Content Skill Sets		Knowledge/ Performance
2248.13	Describe principles of therapeutic and effective communication with patients/clients in a manner that achieves a positive relationship.	
2248.14	Discuss adjusting communication strategies to effectively communicate to different age groups, developmental stages, patients/clients with special needs, and differing cultures, including language barriers.	
2248.15	Discuss the communication techniques that should be used to interact with the patient/client, patient/client family members, bystanders, and individuals from other agencies, including verbal diffusion and interview techniques.	
2248.16	State the steps the Emergency Medical Technician (EMT) should take when approaching a family confronted with death and dying.	

Safety, Legal, and Ethical Information/EMT-B Prep		Complete
Content Skill Sets		Knowledge/ Performance
2248.17	Discuss and explain the roles, responsibilities, and professionalism of Emergency Medical Services (EMS) personnel.	
2248.18	Define EMS systems.	
2248.19	Discuss the historical background of the development of the EMS system.	
2248.20	Identify the four levels of national EMS providers (EMR, EMT, AEMT, and PM), as well as the three levels in the state of West Virginia.	
2248.21	State the specific statutes and regulations regarding the EMS system in West Virginia.	
2248.22	Characterize the EMS system's role in prevention and public education.	
2248.23	Discuss the roles and responsibilities of the EMT related to the personal safety of the crew, patient/client, and bystanders.	
2248.24	Discuss the maintenance of certification and licensure of the EMT in the state of West Virginia.	
2248.25	Define quality improvement and discuss the EMT's role in the process.	
2248.26	Discuss EMS's research and evidence-based decision-making.	
2248.27	Identify the essential components of a verbal report and legal aspects that need to be considered.	
2248.28	Safety practices for EMT.	
2248.29	Discuss the significance of using the correct safety precautions to ensure the safety of the patient/client, the EMT, and the EMS team.	
2248.30	Discuss stress management techniques useful for both the EMT and the patient/client.	
2248.31	Discuss the procedures to safely lift and move patients/clients of various age groups and situations (emergency, urgent, and non-urgent moves).	
2248.32	Discuss and apply knowledge of disease transmission to the overall safety and wellness of the EMS team.	
2248.33	Explain the need to determine scene safety.	
2248.34	Recognize and describe hazards/potential hazards at the scene.	
2248.35	Determine if the scene is safe to enter.	
2248.36	Describe the steps the EMT-Basic should take for personal protection from airborne and bloodborne pathogens, as well as communicable diseases.	
2248.37	List the personal protective equipment (PPE) necessary to protect oneself in common emergency situations.	
2248.38	List the minimum precautions that should be followed and PPE that should be worn at the emergency scene.	
2248.39	List possible emotional reactions that an individual (EMT, EMT family, patient/client, and patient's/client's family) may experience when faced with trauma, illness, death, and dying.	
2248.40	Recognize the warning signs of personal stress.	
2248.41	Discuss strategies of stress management for the EMT.	
2248.42	Demonstrate good body mechanics while using a stretch and other patient/client moving devices.	
2248.43	Discuss the guidelines and safety precautions that need to be followed when lifting a patient/client.	
2248.44	Describe the guidelines and safety precautions for carrying patients/clients and/or equipment.	
2248.45	State the guidelines for reaching and their application.	
2248.46	State the guidelines for pushing and pulling.	
2248.47	Discuss patient/client positioning in common emergency situations.	

2248.48	Discuss situations that may require the use of medical restraints on the patient/client and explain guidelines and safety considerations for their uses.	
2248.49	Define infectious disease and communicable disease.	
2248.50	Describe the routes of transmission for infectious disease.	
2248.51	Explain the mode of transmission and the steps to prevent/deal with exposure to hepatitis, meningitis, tuberculosis, and HIV.	
2248.52	Discuss the importance of body substance isolation (BSI).	
2248.53	Explain how immunity to infectious diseases is acquired.	
2248.54	Explain post-exposure management of exposure to patient's/client's blood or body fluids including completing a post-exposure report.	
2248.55	Describe the components of physical fitness and mental wellbeing.	
2248.56	Discuss mechanisms of injury/nature of illness.	
2248.57	Discuss the procedures for multiple-patient/client situations.	
2248.58	Explain why it is important for the EMT to determine the need for additional or specialized resources.	
2248.59	Discuss the importance of performing regular vehicle and equipment inspections.	
2248.60	Describe the general provisions of West Virginia laws relating to the operation of an ambulance.	
2248.61	Discuss <i>due regard for the safety of all others</i> while operating an emergency vehicle.	
2248.62	Provide examples of some high-risk situations and hazards that may affect the safety of the ambulance and its passengers during both pre-transport and during transport.	
2248.63	Describe the specific condition that would define a mass-casualty incident (MCI) and give examples.	
2248.64	Describe primary and secondary triage, how the four triage categories are assigned and how destination decisions are made.	
2248.65	Describe how the techniques of triage are performed.	
2248.66	Demonstrate how to perform a triage-based scenario that involves an MCI.	
2248.67	Discuss safe air medical operations.	
2248.68	Describe key scene safety considerations when preparing for a helicopter medivac, including establishing a landing zone and approaching the aircraft.	
2248.69	Discuss the criteria for utilizing an air medical response.	
2248.70	Describe the role of the EMT in patient/client rescue and vehicle extrication.	
2248.71	Describe personal and patient/client safety during vehicle extrication.	
2248.72	Discuss the factors related to ensuring situational safety at the site of vehicle extrication.	
2248.73	Explain the difference between simple access and complex access in vehicle extrication.	
2248.74	Discuss patient/client care considerations related to assisting with rapid extrication, providing emergency care to the trapped patient/client, and removing and transferring a patient/client.	
2248.75	Describe the role of the EMT on the scene of a natural or man-made disaster.	
2248.76	Define international and domestic terrorism and provide examples of incidents of each.	
2248.77	Describe personal and patient/client safety during a natural or man-made disaster.	
2248.78	Describe the factors related to ensuring situational safety at the site of a disaster and the procedures required.	

Intra Team Communications/EMT-B Prep		Complete
Content Skill Sets		Knowledge/ Performance
2248.79	Discuss vehicle and equipment readiness.	
2248.80	Discuss the roles and responsibilities of the EMT to operate emergency vehicles, provide scene leadership, perform patient/client assessment, and administer emergency care.	
2248.81	Understand the basic principles of the various types of communications equipment used in EMS.	
2248.82	Describe the use of radio communication and correct radio procedures, including the proper methods of initiating and terminating the radio call/transmission.	
2248.83	State the proper procedures and sequence for delivery of patient/client information to other healthcare professionals.	

Information Collect/EMT-B Prep		Complete
Content Skill Sets		Knowledge/ Performance
2248.84	Identify the medical terminology and medical terms associated with the EMT level.	
2248.85	Describe the use of written communication and documentation.	
2248.86	Understand the basic principles of the various types of communications equipment used in EMS.	
2248.87	Explain the legal implication of the patient/client care report.	
2248.88	Identify the minimum dataset reference patient/client information and administrative information on the patient/client care report.	
2248.89	Understand how to document refusal of care, including legal implications.	

West Virginia Standards

Skillset		Complete
Content Skill Sets		Knowledge/ Performance
2249.1	State what care should be provided for a patient/client with or without adequate breathing.	
2249.2	Describe and demonstrate the steps in performing the head-tilt chin-lift.	
2249.3	Relate the mechanism of injury to opening the airway.	
2249.4	Describe and demonstrate the steps in performing the jaw thrust.	
2249.5	Describe and demonstrate the techniques of suctioning and its importance.	
2249.6	Describe how to assess for adequate and inadequate respiration, including the use of pulse oximetry.	
2249.7	List the components, purpose, indications, contraindications, complications, and procedures for oxygen delivery devices.	
2249.8	Demonstrate oxygen administration for pediatric and geriatric patients/clients.	
2249.9	Describe and demonstrate the steps in assisting ventilations for the conscious patient/client in respiratory distress using a bag-valve mask (BVM) and continuous positive airway pressure (CPAP).	
2249.10	Demonstrate how to insert an oropharyngeal (oral) and a nasopharyngeal (nasal) airway.	
2249.11	Describe and demonstrate how to artificially ventilate a patient/client with a pocket mask.	
2249.12	Describe and demonstrate the steps in artificially ventilating a patient/client with a BVM for one or two rescuers.	
2249.13	Describe and demonstrate the signs of adequate and inadequate artificial ventilation using the BVM.	
2249.14	Describe and demonstrate the steps in artificially ventilating a patient/client with a manually triggered ventilation device.	
2249.15	Demonstrate how to artificially ventilate pediatric and geriatric patients/clients.	
2249.16	Describe and demonstrate how to perform the Sellick Maneuver (cricoid pressure).	
2249.17	Recognize the differences between normal and positive pressure ventilation.	
2249.18	Demonstrate how to measure blood pressure by palpation, auscultation, and electronic devices while in the field.	
2249.19	Discuss withholding resuscitation if irreversible death is obvious or if a "Do Not Resuscitate (DNR)" is present.	
2249.20	Review the anatomy and physiology of the respiratory and cardiovascular systems.	
2249.21	Explain the system components of CPR, the four links in the AHA Chain of Survival (adult and pediatric), and how each one relates to maximizing the survival of the patient/client.	
2249.22	Secure Healthcare Provider (AHA or Red Cross guidelines) certification (required prior to EMT program competition).	
2249.23	Describe shock, including the pathophysiology/causes/signs and symptoms associated with the various types of shock.	
2249.24	Discuss patient/client assessment and the emergency care of the patient/client with signs and symptoms of shock.	
2249.25	Discuss and distinguish the causes and variations between the emergency medical care of the infant, child, adult, and geriatric patient/client experiencing shock.	
2249.26	Review the anatomy, physiology, and pathophysiology of the brain and spinal cord.	
2249.27	Discuss and identify the causes of ischemic strokes, hemorrhagic strokes, and transient ischemic attacks, including similarities and differences.	
2249.28	Discuss and demonstrate how to use the stroke assessment tool to identify a stroke patient/client rapidly.	

2249.29	Define and differentiate generalized seizure, partial seizure, and status epilepticus and list their possible causes.	
2249.30	Describe and demonstrate the assessment and medical care of the infant, child, adult, and geriatric patient/client with neurological emergencies.	

Technical Skills/EMT-B		Complete
Content Skill Sets		Knowledge/ Performance
2249.31	Review the basic anatomy, physiology, and pathophysiology of the gastrointestinal, genital, and urinary systems.	
2249.32	Define the term "acute abdomen."	
2249.33	Identify the signs, symptoms, and common causes of an acute abdomen.	
2249.34	Describe and demonstrate the assessment and medical care of the infant, child, adult, and geriatric patient/client with a gastrointestinal emergency.	
2249.35	Describe and demonstrate the emergency medical care of the infant, child, adult, and geriatric patient/client experiencing an allergic reaction.	
2249.36	State the generic and trade names, medication forms, dose, administration, action, and contraindications for the epinephrine auto-injector.	
2249.37	Demonstrate the use of epinephrine auto-injector.	
2249.38	List the causes of infectious diseases.	
2249.39	Describe and demonstrate the emergency medical care of the infant, child, adult, and geriatric patient/client experiencing an infectious disease.	
2249.40	Discuss mandatory notification to state or federal agencies of various diseases.	
2249.41	Review the anatomy, physiology, and pathophysiology of the endocrine system and its main function in the body.	
2249.42	Define diabetes (Type I and II), hypoglycemia, hyperglycemia, and diabetic ketoacidosis.	
2249.43	Identify and demonstrate the steps in the emergency medical care of a patient/client.	
2249.44	Identify and demonstrate the steps in the emergency medical care of a patient/client taking diabetic medicine with an altered mental status and a history of diabetes.	
2249.45	State the generic and trade names, medication forms, dose, administration, action, and contraindications for oral glucose.	
2249.46	Demonstrate the steps of using a glucometer device and administering oral glucose.	
2249.47	Distinguish between the emergency medical care of the infant, child, adult, and geriatric patient/client experiencing a diabetic emergency.	
2249.48	Define behavior, psychiatric disorders, and behavioral emergencies.	
2249.49	Discuss the general factors that may cause an alteration in a patient/client's behavior.	
2249.50	Discuss the risk factors/signs or symptoms of various psychiatric emergencies.	
2249.51	Discuss special medical/legal considerations for managing behavioral emergencies in West Virginia.	
2249.52	Distinguish between the emergency medical care of the infant, child, adult, and geriatric patient/client experiencing a behavioral or psychiatric emergency.	
2249.53	Demonstrate various techniques to safely restrain a patient/client with a behavioral problem.	
2249.54	Review the basic anatomy, physiology, and pathophysiology of the cardiovascular system.	

2249.55	Describe the anatomy, physiology, pathophysiology and demonstrate the assessment and management of angina pectoris; thromboembolism; myocardial infarction; hypertensive emergencies; aortic aneurysm/dissection; heart failure.	
2249.56	Demonstrate the ability to assess and treat a patient/client with signs and symptoms of cardiac issues, including airway, medication administration, position of comfort, and life span considerations.	
2249.57	List the indications and contraindications for automated external defibrillation (AED).	

Technical Skills/EMT-B		Complete
Content Skill Sets		Knowledge/ Performance
2249.58	Explain the impact of age and weight on defibrillation.	
2249.59	Discuss the position of comfort for patient/client with various cardiac emergencies.	
2249.60	Explain the rationale for early defibrillation.	
2249.61	Explain why not all patient's/client's chest pain results in cardiac arrest and does not need to be attached to an automated external defibrillator.	
2249.62	Discuss the various types of automated external defibrillators.	
2249.63	Differentiate between the fully automated and the semi-automated defibrillator.	
2249.64	Understand the importance of maintenance and operator's checklist for AEDs	
2249.65	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.	
2249.66	Explain the role medical direction plays in the use of automated external defibrillation.	
2249.67	Understand the importance of maintenance and the operator's checklist for AEDs.	
2249.68	Demonstrate the ability to use an AED according to the latest American Heart Association (AHA) guidelines.	
2249.69	Explain the role medical direction plays in the use of automated external defibrillation.	
2249.70	Define toxicology, poisoning, and overdose.	
2249.71	List various ways that poisons enter the body.	
2249.72	List signs/symptoms associated with poisoning.	
2249.73	Discuss and demonstrate the emergency medical care for the infant, child, adult, and geriatric patient/client with poisoning or overdose.	
2249.74	State the generic and trade names, indications, contraindications, medication form, dose, administration, actions, side effects, and re assessment strategies for activated charcoal.	
2249.75	Perform the necessary steps required to provide a patient/client with activated charcoal.	
2249.76	List signs of adequate air exchange.	
2249.77	State the signs and symptoms of a patient/client with respiratory distress.	
2249.78	Describe and demonstrate the assessment and medical care of the infant, child, adult, and geriatric patient/client with a respiratory emergency.	
2249.79	State the generic name, medication forms, dose, administration, action, indications, and contraindications for the metered-dose inhaler.	
2249.80	Demonstrate the steps in facilitating the use of an inhaler.	
2249.81	Differentiate between upper airway obstruction and lower airway disease in the pediatric and geriatric patient/client.	

2249.82	List the composition, physiology, and pathophysiology of blood.	
2249.83	State the signs and symptoms of a patient/client with a Sickle Cell crisis or a clotting disorder.	
2249.84	Describe and demonstrate the emergency medical care of the patient/client with sickle cell distress or clotting disorder.	
2249.85	Understand the principles of kidney dialysis.	
2249.86	State the signs and symptoms of a patient/client with a dialysis emergency.	
2249.87	Describe and demonstrate the emergency medical care of the patient/client with a dialysis emergency.	
2249.88	Distinguish between the emergency medical care of the infant, child, adult and geriatric patient/client experiencing a female reproductive system emergency.	
2249.89	Explain the general management of a gynecologic emergency in relation to patient/client privacy and communication.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
2249.90	Discuss the special considerations and precautions an EMT must observe when arriving at the scene of a suspected case of sexual assault or rape.	
2249.91	Explain special consideration related to a patient/client who has experienced an injury by sexual assault/abuse.	
2249.92	Describe and demonstrate the emergency medical care of a patient/client with a non-traumatic musculoskeletal emergency.	
2249.93	Differentiate between internal and external bleeding; arterial, venous and capillary bleeding.	
2249.94	Explain and demonstrate emergency medical care of the patient/client with external and internal bleeding.	
2249.95	List signs and symptoms of shock (hypo-perfusion).	
2249.96	Discuss MOI for chest injury (blunt and penetrating, energy and injury).	
2249.97	Differentiate between a pneumothorax (open, simple and tension) and a hemothorax.	
2249.98	Describe and demonstrate the assessment and management of a patient/client with a suspected chest (open and closed) injury.	
2249.99	Discuss MOI for abdominal injury (blunt and penetrating, energy and injury).	
2249.100	Describe the abdominal quadrants.	
2249.101	Describe the differences between hollow and solid organs.	
2249.102	Describe and demonstrate the assessment and management of a patient/client with a suspected abdominal (penetrating or blunt) or genitourinary injury.	
2249.103	Discuss MOI for orthopedic injury (blunt and penetrating, energy and injury).	
2249.104	Describe the different types of musculoskeletal injuries including fractures, amputations, sprains, and strains.	
2249.105	Differentiate between an open and a closed painful, swollen, and deformed extremity.	
2249.106	Describe and demonstrate the assessment and management of a patient/client with a suspected orthopedic injury.	
2249.107	Discuss and list the types of open and closed soft tissue injury.	
2249.108	Define and list characteristics of superficial, partial-thickness and full-thickness burns.	
2249.109	Explain how the seriousness of a burn is related to its depth and extent (percent of body surface area (BSA) involved or rule of nine's) for adult and pediatric patient/client.	
2249.110	Describe and demonstrate the assessment and management of a patient/client with a soft tissue injury.	
2249.111	Discuss MOI for head, face and neck (non-spinal) (blunt and penetrating, energy and injury).	

2249.112	Describe and demonstrate the assessment and management of a patient/client with an injury to the head, face and neck (non-spinal).	
2249.113	Explain functions of the somatic and autonomic nervous system.	
2249.114	Discuss MOI for head (brain) and spinal (blunt and penetrating, energy and injury).	
2249.115	Discuss the different types of brain injuries and their corresponding signs and symptoms including increased intracranial pressure (ICP), concussion, contusion and injuries caused by medical conditions.	
2249.116	Describe and demonstrate the assessment and management of a patient/client with a head (brain) and spinal injury.	
2249.117	Discuss anatomy, physiology, and pathophysiology of the pregnant trauma patient/client.	
2249.118	Discuss MOI and fetal considerations for the pregnant trauma patient/client.	
2249.119	Discuss and demonstrate unique injuries and conditions along with assessment and management for the pregnant patient/client involved in trauma.	
2249.120	Discuss anatomy, physiology, and pathophysiology of the pediatric trauma patient/client.	
2249.121	Discuss and demonstrate unique assessment and management considerations for the pediatric trauma patient/client.	

Technical Skills/EMT-B

Technical Skills/EMT-B		Complete
Content Skill Sets		Knowledge/ Performance
2249.122	Discuss anatomy, physiology and pathophysiology of the elderly trauma patient/client.	
2249.123	Discuss and demonstrate unique assessment and management considerations for the elderly trauma patient/client.	
2249.124	Discuss anatomy, physiology and pathophysiology of the cognitively impaired trauma patient/client.	
2249.125	Discuss and demonstrate unique assessment and management considerations for the cognitively impaired trauma patient/client.	
2249.126	Define drowning and discuss its incidence, risk factors and prevention.	
2249.127	List pathophysiologies of water-related incidents.	
2249.128	Distinguish between submersion in salt and fresh water.	
2249.129	Discuss and demonstrate assessment and management considerations for a patient/client of a submersion incident.	
2249.130	Describe the different types of diving emergencies and how they may occur.	
2249.131	Describe the pathophysiology of dysbarism incidents to include high altitudes and diving incidents.	
2249.132	Discuss and demonstrate assessment and management considerations for a patient/client of a dysbarism incident.	
2249.133	Discuss and demonstrate assessment and management considerations for a patient/client of a lightning incident.	
2249.134	Explain the five ways a body can lose heat.	
2249.135	Describe the pathophysiology of temperature related incidents to include both cold and heat-related illness.	
2249.136	Discuss and demonstrate assessment and management considerations for a patient/client of a temperature related illness.	
2249.137	Identify the species of insects, spiders, and snakes in the US that may cause life-threatening injuries.	
2249.138	Discuss and demonstrate assessment and management considerations for a patient/client with a bite or envenomation incident.	
2249.139	Explain the relationship between the mechanism of injury and potential energy, kinetic energy, and work.	
2249.140	Define blunt and penetrating trauma and provide examples of the mechanism of injury (MOI) that would cause each to occur, including; effects of high, medium, and low velocity penetrating trauma; primary, secondary, tertiary, and miscellaneous blast injuries; factors to consider of a patient/client injured in a fall; age (pediatric and geriatrics).	

2249.141	Describe and provide a general overview of multisystem trauma patient/client management.	
2249.142	Discuss the golden principle of out-of-hospital trauma care.	
2249.143	Discuss and demonstrate assessment and management considerations for a patient/client of multi-system injuries.	

Information Technology Applications		Complete
Content Skill Sets		Knowledge/ Performance
2249.145	Differentiate between expressed, implied, and involuntary consent.	
2249.146	Discuss the methods of obtaining consent and procedures for minors.	
0792.147	Discuss the issues of abandonment, negligence, false imprisonment, and battery and their implications to the EMT.	
2249.148	Discuss the implications for the EMT in patient/client refusal of care and/or transport.	
2249.149	Explain the importance, necessity, and legality of patient/client confidentiality.	
2249.150	Discuss the importance of Advance Directives.	
2249.151	Discuss the implications of a DNR (Do Not Resuscitate) order in regard to EMS application.	
2249.152	Discuss the state of West Virginia and federal special reporting situations such as abuse, sexual assault, gunshots and knife wounds, communicable disease, etc.	
2249.153	Differentiate between civil tort and criminal actions.	
2249.154	List the elements of negligence and defenses/protections from liability.	
2249.155	Discuss the role of the EMT at crime scenes and in the preservation of evidence.	
2249.156	Define ethics and morality and discuss their implication for the EMT.	
2249.157	Explain the "Six Rights" of medication administration and describe how each one is related to EMS care.	
2249.158	Discuss the forms of medications and provide examples of each.	
2249.159	Discuss how the form of a medication dictates its route of administration.	
2249.160	Describe the difference between a generic medication name and trade name and provide an example of each.	
2249.161	Discuss the components and elements of a drug profile, including actions, contraindications, side effects, dose, and route.	
2249.162	Describe the role of medical direction in medication administration and explain the difference between direct orders (online) and standing orders (off-line).	
2249.163	Give the generic and trade names, actions, indication, contraindications, routes of administration, side effects, interactions, and doses of medications that may be administered by an EMT in an emergency as dictated by the state of West Virginia.	
2249.164	Demonstrate how to administer medication in the following routes: oral, sublingual, and auto-injector.	
2249.165	Discuss and define the pathophysiology of the trauma patient/client.	
2249.166	Discuss and demonstrate assessment and management of the trauma patient/client.	
2249.167	Discuss and describe the significant and non-significant mechanism of injury (MOI) and provide examples of each.	
2249.168	Discuss the National Trauma Triage Protocol of injured Patient/clients.	
2249.169	Review the anatomy, physiology, and pathophysiology of the female reproductive system.	
2249.170	Explain the normal changes that occur during pregnancy.	
2249.171	Differentiate between the stages of labor and delivery.	
2249.172	Discuss and demonstrate assessment and management considerations of a pregnancy.	

2249.173	Discuss assessment and management considerations of complications of pregnancy.	
2249.174	Discuss and demonstrate assessment and management considerations of a neonate.	
2249.175	Describe the anatomy, physiology, and pathophysiology of the pediatric patient/client.	
2249.176	Describe the differences in anatomy when compared to the adult patient/client.	
2249.177	Discuss and demonstrate assessment and management considerations of a pediatric emergency: identify the most common causes of the following conditions in the pediatric patient/client: shock, altered mental status, and seizures; gastrointestinal emergencies; poisonings; drowning; trauma.	
2249.178	Discuss and demonstrate assessment and management considerations for Sudden Infant Death Syndrome (SIDS).	
2249.179	Define and discuss the term "geriatrics."	
2249.180	Discuss the anatomy, physiology and pathophysiology of the geriatric patient/client.	
2249.181	Discuss and demonstrate assessment and management considerations of a geriatric emergency.	
2249.182	Define and discuss child and elder abuse and neglect, including possible indicators of each.	
2249.183	Discuss assessment and management considerations of a patient/client with special needs to include child and elder abuse and neglect, homelessness/poverty, etc.	
2249.184	Describe and demonstrate the steps in performing the jaw thrust.	

Monitoring Client Status/EMT-B		Complete
Content Skill Sets		Knowledge/ Performance
2249.185	Summarize the elements of a general impression of the patient/client.	
2249.186	Discuss and demonstrate methods of assessing altered mental status using alert, voice, pain, and unresponsive (AVPU).	
0792.187	Discuss and demonstrate methods of assessing the airway and providing airway care.	
2249.188	Describe and demonstrate methods used for assessing if a patient/client is breathing.	
2249.189	Differentiate between a patient/client with adequate and inadequate breathing.	
2249.190	Distinguish between methods of assessing breathing.	
2249.191	Describe and demonstrate the methods used to obtain a pulse.	
2249.192	Discuss and demonstrate the need for assessing the patient/client for external bleeding.	
2249.193	Describe and demonstrate normal and abnormal findings when assessing skin color, temperature, moisture, and capillary refill in adult, child, and infant.	
2249.194	Explain the reason for and demonstrate prioritizing a patient/client for care and transport.	
2249.195	Discuss the process of taking a history, its key components, and its relationship to the primary assessment process.	
2249.196	Explain the importance of obtaining a sample and OPQRST history.	
2249.197	Recognize and respond to the feelings patient/clients experience during the assessment.	
2249.198	Describe examples of different techniques the EMT may use to obtain information from patients/clients, family, or bystanders during the history-taking process.	
2249.199	Describe the unique needs and demonstrate assessing an individual with a specific chief complaint with no known prior history.	
2249.200	Discuss the components of the physical exam and the skills involved.	

2249.201	Differentiate between the history and physical exam that are performed for responsive patients/clients with no known prior history, responsive patients/clients with a known prior history, and unresponsive patients/clients.	
2249.202	Explain and demonstrate the use/interpretation of pulse oximetry device readings.	

Patient/Client Status Evaluation/EMT-B		Complete
Content Skill Sets		Knowledge/ Performance
2249.203	Describe the components of reassessment and demonstrate the skills involved.	
2249.204	Discuss the reasons for repeating the initial assessment as part of the reassessment.	
2249.205	Explain trending assessment components and its value to other health professionals who assume care of the patient/client.	

Course Description: This course is designed to provide the foundations of a successful response to an industrial emergency. Topics include: component of incident command; span of control; giving and receiving of orders; setting up a command post; and communications. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Emergency and Fire Management Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2250.01	Identify and apply National Incident Management Systems (NIMS) protocols.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
2250.02	Apply appropriate laws, regulations, and industry standards in law and public safety situations.	

Communications		Complete
Content Skill Sets		Knowledge/ Performance
2250.03	Communicate using appropriate language and level, including using appropriate techniques for communicating with special needs individuals (e.g., hard of hearing).	

West Virginia Standards

Basic Incident Command for Industrial Manufacturing and Petrochemical		Complete
Content Skill Sets		Knowledge/ Performance
2250.04	Describe the communications center.	
2250.05	Analyze communications center operations.	
2250.06	Describe radio systems.	
2250.07	Discuss systems for records and reporting.	
2250.08	Relate the history of the ICS.	
2250.09	Discuss characteristics of the ICS such as jurisdictional authority, all-risk and all-hazard system, unity of command, etc.	
2250.10	Define common terms relating to ICS.	
2250.11	Examine consolidated incident action plans.	
2250.12	Describe designated incident facilities.	

2250.13	Describe industrial-specific ICS's relating to industrial manufacturing and petrochemical plants.	
2250.14	Compare and contrast industrial-specific ICS's to other ICS's.	

Industrial Fire Protection		Complete
Content Skill Sets		Knowledge/ Performance
2250.15	Describe various standards for industrial fire protection systems.	
2250.16	Describe selection, care, use and limitation of protective equipment.	
2250.17	Demonstrate inspection and maintenance of protective equipment.	
2250.18	Describe selection, care, use and limitations of combustible gas detectors.	
2250.19	Demonstrate inspection and maintenance of gas detectors.	
2250.20	Describe selection, care, use and limitation of oxygen meters.	
2250.21	Demonstrate inspection and maintenance of oxygen meters.	

Course Description: This course is designed to provide knowledge and skills related to the use of hazardous materials in an industrial setting. Topics include: OSHA General Industry Standards and other consensus and proprietary standards relating to the use of hazardous materials; flammable and combustible liquids; compressed gases; LP-gases; cryogenic liquids; processes such as spraying and dipping; and use of electrical equipment in hazardous locations. Students will utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Students are encouraged to become active members of SkillsUSA. Teachers will provide each student with real world learning opportunities and instruction. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Emergency and Fire Management Services Technical Skills		Complete
Content Skill Sets		Knowledge/ Performance
2251.01	Identify and apply National Incident Management Systems (NIMS) protocols.	
2251.02	Recognize and respond appropriately to hazardous materials incidents.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge/ Performance
2251.03	Apply appropriate laws, regulations, and industry standards in law and public safety situations.	

Safety, Health and Environmental		Complete
Content Skill Sets		Knowledge/ Performance
2251.04	Identify and practice appropriate safety and health procedures for law and public safety occupations.	
2251.05	Identify and practice appropriate environmental procedures for law and public safety occupations.	

West Virginia Standards

Industrial Safety Management		Complete
Content Skill Sets		Knowledge/ Performance
2251.06	Recognize and evaluate hazards within industrial settings.	
2251.07	Conduct risk analysis and risk management activities.	
2251.08	Recognize and evaluate hazards within industrial settings.	
2251.09	Maintain program/system effectiveness.	
2251.10	Discuss probable hazards.	
2251.11	Apply and interpret applicable codes and standards.	

2251.12	Demonstrate understanding of the conduct of industrial incidental investigations.	
2251.13	Demonstrate an understanding of associated legal responsibilities and recordkeeping within industrial fire management including reporting of hazardous materials incidents.	
2251.14	Describe methods of implementing various emergency response plans.	
2251.15	Identify employee training requirements.	
2251.16	Describe health and safety requirements for Medical monitoring and exposure records.	

Industrial Hazardous Materials		Complete
Content Skill Sets		Knowledge/ Performance
2251.16	Describe various types of hazardous materials found in industrial settings.	
2251.17	Describe risks associated with various types of hazardous materials.	
2251.18	Discuss notification processes and identify situations when notifications are required.	
2251.20	Discuss specific procedures for handling hazardous materials incidents (sops).	
2251.21	Discuss methods of performing control and containment operations.	
2251.22	Describe implementation of decontamination procedures.	
2251.23	Describe sops for handling hazardous materials incidents and termination procedures.	

Course Description: This course provides opportunities for students to study and apply basic principles of materials, mechanisms, structures, electricity, electronic control, fluidics, computer control, and graphic communication and how they can be integrated and used to solve a variety of complex technical challenges. Students work in engineering teams to develop work process skills, such as researching, writing, organizing, modeling, calculating, analyzing and communicating with others. Students will utilize problem-solving techniques and manipulative skills while completing laboratory activities to develop an understanding of course concepts. Safety instruction is integrated into all activities.

Design and Problem Solving		Complete
Content Skill Sets		Knowledge/ Performance
2436.01	Design and problem solving.	
2436.02	Examine a variety of divergent and convergent methods to generate ideas, organize thoughts and represent relationships between concepts.	
2436.03	Produce ideas and design solutions to solve problems through sketches, drawings and notes.	
2436.04	Demonstrate the basic steps in the technological problem-solving process to develop solutions to a variety of problems.	
2436.05	Determine the functional criteria of a variety of consumer products.	
2436.06	Apply the concept of ergonomics to the design of problem solutions.	
2436.07	Utilize the elements and principles of design to create aesthetic solutions to problems.	
2436.08	Assess reasons why human-designed systems, products and environments need to be monitored, maintained and improved to ensure safety, quality, cost efficiency and sustainability.	

Conducting Research		Complete
Content Skill Sets		Knowledge/ Performance
2436.09	Information gathering techniques, research and data collection/application.	
2436.10	Examine the purpose and importance of research in the design process.	
2436.11	Demonstrate vocabulary and reading comprehension skills used in engineering.	
2436.12	Compare a variety of information gathering techniques to compile research information for designs from books, periodicals and the Internet.	
2436.13	Document information gained from any resource.	
2436.14	Demonstrate how to gather anthropometrics data.	
2436.15	Develop and use a questionnaire or interview guide designed to gain specific information from people.	
2436.16	Utilize appropriate software to design a chart or graph to display gathered data.	
2436.17	Conduct destructive and nondestructive tests on a variety of materials to determine their characteristics.	
2436.18	Compile data to produce a computer graph to display information about a material's properties.	
2436.19	Assess which specific materials are most appropriate for a given product.	
2436.20	Research STEM career opportunities.	

Documenting and Recording Design Ideas		Complete
Content Skill Sets		Knowledge/ Performance
2436.21	Documenting, recording and sketching design ideas.	
2436.22	Assess various methods to document design work.	
2436.23	Determine why engineers should document their design work.	
2436.24	Draw and dimension a variety of drawings using appropriate software.	
2436.25	Create technical sketches that depict various details of a product.	
2436.26	Communicate design solutions through written, graphic and verbal techniques, using appropriate technology tools to present the information.	
2436.27	Create a design portfolio, using a variety of methods and technology, to layout and present design work.	

Producing Models		Complete
Content Skill Sets		Knowledge/ Performance
2436.28	The use of materials, resources, safety and equipment considerations necessary for producing models.	
2436.29	Compare and contrast the difference between appearance models, working models, prototypes and computer models.	
2436.30	Select appropriate materials needed for producing solutions to a variety of problems.	
2436.31	Demonstrate safe use of any tool and/or equipment that may be used in the engineering/technical laboratory.	
2436.32	Perform various forming, separating and combining processes when creating models for design solutions.	
2436.33	Assess the internal and external forces that are exerted on a structure.	
2436.34	Compare and contrast various structural elements and apply them to the solution of design problems.	

Controlling Models		Complete
Content Skill Sets		Knowledge/ Performance
2436.35	Methods necessary to control movement and operation to engineered models.	
2436.36	Demonstrate how various mechanisms affect changing types of movement.	
2436.37	Examine the concept of mechanical advantage and efficiency.	
2436.38	Calculate current, voltage and resistance using appropriate meters to measure each.	
2436.39	Demonstrate the operation and proper use of a variety of electrical components to create circuits to solve design problems.	
2436.40	Draw a diagram of a circuit and build a circuit from the diagram.	
2436.41	Examine various sensing and actuator devices and use them in control circuits.	
2436.42	Apply common processing blocks used in electronic circuits such as AND / OR gates in the solution of problems.	
2436.43	Examine the concept of valves and cylinders used to control fluids, and use them to control design solutions.	

2436.44	Examine the concept of controlling the speed of cylinders and use a variety of controlling arrangements such as delay circuits to produce delays, AND, OR and NOT functions.	
2436.45	Establish the locus of moving points in mechanisms and explain how cylinders are mounted to provide appropriate angular travel.	
2436.46	Correlate the various technologies and use them to build models of working solutions.	

Testing and Analyzing Models

Testing and Analyzing Models		Complete
Content Skill Sets		Knowledge/ Performance
2436.47	The importance of testing and analyzing data for the improvement of a design solution.	
2436.48	Select and conduct appropriate tests to gather data on the efficiency of solutions to problems.	
2436.49	Calculate the efficiency of a given design to determine necessary redesign strategies.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2459.01	Explain the necessity and benefits/disadvantages of organizational change	
2459.02	Identify ways to reduce or prevent injuries and illness	
2459.03	Identify efficient, effective, and ethical uses of technology in the workplace	
2459.04	Ensure safe working conditions	
2459.05	Demonstrate safe use of tools and equipment	
2459.06	Practice environmental conservation and safety	

Career Readiness		Complete
Content Skill Sets		Knowledge/ Performance
2459.07	Identify engineering disciplines and engineering expertise that are critical to the solution of a specific problem	
2459.08	Explain how engineering disciplines continue to evolve and emerge as new interdisciplines and sub-disciplines to meet the needs of society	

Design Process		Complete
Content Skill Sets		Knowledge/ Performance
2459.09	Explain and justify a design process	
2459.10	Collect, Analyze, and interpret information relevant to the problem or opportunity at hand to support decisions	
2459.11	Synthesize an ill-informed problem into a meaningful, well-defined problem.	
2459.12	Generate multiple potential solution concepts	
2459.13	Develop models to represent design alternatives and generate data to inform decision-making, test alternatives, and demonstrate solutions	
2459.14	Select a solution path from many options to successfully address a problem or opportunity	
2459.15	Make judgment and decisions based on evidence.	

Introduction to Sustainability		Complete
Content Skill Sets		Knowledge/ Performance
2459.16	Define sustainability	
2459.17	Explain the importance of sustainability	
2459.18	Explain the triple bottom line	

2459.19	Recognize the myths and misconceptions about sustainability.	
---------	--	--

Electricity		Complete
Content Skill Sets		Knowledge/ Performance
2459.20	Identify appropriate applications and examples of each of the six simple machines	
2459.21	Measure forces and distances and calculate mechanical advantage, work, power, and efficiency in mechanical systems	
2459.22	Analyze parallel and series circuits resistance, current, and voltage using Ohm's Law	
2459.23	Identify appropriate applications of fuel and solar cells based on characteristics and function.	
2459.24	Differentiate among conduction, convection, and radiation in the transfer of thermal energy.	

Fundamentals of Energy Conversion		Complete
Content Skill Sets		Knowledge/ Performance
2459.25	Improve a system design that converts electrical energy to mechanical energy	
2459.26	Modify the design of a fuel cell project to increase the efficiency of the system	
2459.27	Defend an insulation design considering the three modes of heat transfer	
2459.28	Interpret data to make conclusions about insulation design effectiveness	
2459.29	Justify material choice in the design of a solution	
2459.30	Improve the efficiency of a solution by modifying hardware and/or software	
2459.31	Justify the use of a hydraulic or pneumatic system in a problem	

Engineering Tools and Technology		Complete
Content Skill Sets		Knowledge/ Performance
2459.32	Using a variety of measuring devices, measure, and report quantities accurately and to a precision appropriate for the purpose or the measure.	
2459.33	Use a spreadsheet application to help identify and/or solve a problem	
2459.34	Interpret and analyze data for a single count or measurement variable	
2459.35	Apply systems thinking to consider how an engineering problem and its solution fit into a broader system	
2459.36	Apply mathematical models and interpret the output of models to test ideas or make predictions	
2459.37	Distinguish between sample statistics and population statistics and know the appropriate applications of each	
2459.38	Construct physical objects using hand tools and shop tools	

Control Systems		Complete
Content Skill Sets		Knowledge/ Performance
2459.39	Distinguish between digital and analog data, and the inputs and outputs of a computational system	
2459.40	Describe the differences and advantages of open- and closed-loop systems	
2459.41	Create flowchart, pseudocode, and computer program to implement an algorithm	
2459.42	Predict the behavior of a control system and use a variety of methods for finding, identifying, and correcting bugs in a program	

New Technology and Innovation Sustainability Approaches		Complete
Content Skill Sets		Knowledge/ Performance
2459.43	Describe green building	
2459.44	Define green jobs within the green economy	
2459.45	Explain biomimicry as nature's role model	
2459.46	Describe the future of energy	

The Economics of Sustainability		Complete
Content Skill Sets		Knowledge/ Performance
2459.47	Explain market failure and externalities	
2459.48	Explain the importance of placing a value on nature	
2459.49	Describe economic growth as a dominant global economic trend	
2459.50	Explain how to create a sustainable economic system	
2459.51	Describe the tragedy of the commons and free rider problem	
2459.52	Define ecological economics	

NOTES:
CAREER OPPORTUNITIES: Electrician Maintenance Technician, Solar Power Technician, Hydrogen Power Technician, Telecommunication Tech, Security System Technician, Audio Video Technician, Project Manager, Foreman, Business Owner.
Standards are built to agree with LEED and Sustainable Design and Development 280 Courses

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2460.01	Explain the necessity and benefits/disadvantages of organizational change.	
2460.02	Identify ways to reduce or prevent injuries and illness.	
2460.03	Identify efficient, effective, and ethical uses of technology in the workplace.	
2460.04	Ensure safe working conditions.	
2460.05	Demonstrate safe use of tools and equipment.	
2460.06	Practice environmental conservation and safety.	

Engineering Tools and Technology		Complete
Content Skill Sets		Knowledge/ Performance
2460.07	Using a variety of measuring devices, measure, and report quantities accurately and to a precision appropriate for the purpose or the measure.	
2460.08	Interpret and analyze data for a single count or measurement variable.	
2460.09	Apply mathematical models and interpret the output of models to test ideas or make predictions.	
2460.10	Distinguish between sample statistics and population statistics and know the appropriate applications of each.	

Design Process		Complete
Content Skill Sets		Knowledge/ Performance
2460.11	Explain and justify a design process.	
2460.12	Collect, Analyze and interpret information relevant to the problem or opportunity at hand to support decisions.	
2460.13	Synthesize an ill-informed problem into a meaningful, well-defined problem.	
2460.14	Generate multiple potential solution concepts.	
2460.15	Develop models to represent design alternatives and generate data to inform decision-making, test alternatives, and demonstrate solutions.	
2460.16	Select a solution path from many options to successfully address a problem or opportunity.	
2460.17	Make judgments and decisions based on evidence.	

Primary Sustainability Issues: Energy, Food, Water, and Pollution		Complete
Content Skill Sets		Knowledge/ Performance
2460.18	Describe the central role of energy.	

2460.19	Identify Industrial Pollution and Toxic Sustainability.	
2460.20	Sustainable Water System.	

Sustainability Building Design Basic		Complete
Content Skill Sets		Knowledge/ Performance
2460.21	Explain key sustainability and sustainable design terms and concepts	
2460.22	Identify green (sustainable) building best practices	
2460.23	Explain the cost and benefits of sustainable building	
2460.24	Identify concepts of sustainable design through the analysis of case studies	
2460.25	Identify protocols and systems developed by the U.S. Green Building Council and other organizations such as Green Globes, Energy ASHRAE for incorporating sustainability principles	

Indoor Environment Quality		Complete
Content Skill Sets		Knowledge/ Performance
2460.26	Air Quality	
2460.27	Acoustics	
2460.28	Water Quality and Efficiency: recognize casual water issues (solids, odor, discoloration) and describe why water leaks are problematic.	
2460.29	Domestic Comfortability: recognize and explore opportunities for daylighting while managing the quality of light and define opportunities to balance daylighting and comfort as it relates to heat.	

Materials and Resources		Complete
Content Skill Sets		Knowledge/ Performance
2460.30	Reduce, Reuse, Recycle: Why? How?	
2460.31	Characteristics of Sustainable Materials	
2460.32	Waste Management: explain why material selection, usage, and waste management are important for sustainable design.	

Development Social Challenges		Complete
Content Skill Sets		Knowledge/ Performance
2460.33	Describe sustainable development	
2460.34	Describe global inequalities in all dimensions of sustainability	
2460.35	Recognize sustainability, society, and social change	
2460.36	Explain population growth, energy use, and sustainable development	
2460.37	Maintain health and sustainability	

Government and Sustainability

Complete

Content Skill Sets

Knowledge/
Performance

2460.38 Recognize success and challenges of regulations

2460.39 Recognize policy successes and challenges

2460.40 Explain the cap-and-trade approach with regard to pollution markets

2460.41 Describe how political constraints on government action effect the environment

2460.42 Identify the problems of enforcement

Professional Practices and Communication

Complete

Content Skill Sets

Knowledge/
Performance

2460.43 Communicate effectively with an audience based on audience characteristics

2460.44 Demonstrate an ability to function on multidisciplinary teams

2460.45 Use social media appropriately and effectively, in personal and professional situations

2460.46 Exhibit flexibility and adaptability

2460.47 Demonstrate leadership and teamworking skills

2460.48 Recognize others for their contributions

2460.49 Demonstrate group process techniques

2460.50 Organize work

NOTES:

CAREER OPPORTUNITIES: Electrician Maintenance Technician, Solar Power Technician, Hydrogen Power Technician, Telecommunication Tech, Security System Technician, Audio Video Technician, Project Manager, Foreman, Business Owner.

Standards are built to agree with LEED and Sustainable Design and Development 280 Courses

Course Description: Introduction to Engineering Design is a component of the Project Lead the Way (PLTW) preengineering curriculum. This course teaches problem-solving skills using a design development process. Models of product solutions are created, analyzed, and communicated using solid modeling computer design software. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This course aligns with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session. Required skill sets are dispersed at this time.

Overview of Engineering		Complete
Content Skill Sets		Knowledge/ Performance
2461.01	Describe major engineering fields.	
2461.02	Identify functions an engineer performs.	
2461.03	Describe education required to be an engineer.	
2461.04	Identify ethics related to engineering situations.	
2461.05	Describe relationships between the engineer and other technical personnel.	
2461.06	Identify the progression of the engineering field.	

Design Process/Problem Solving		Complete
Content Skill Sets		Knowledge/ Performance
2461.07	Identify principles of the problem-solving process.	
2461.08	Outline the steps in the design process.	
2461.09	Translate word problems into mathematical statements.	
2461.10	Analyze solutions, identifying strengths and weaknesses.	
2461.11	Develop details of a solution.	
2461.12	Develop, test, and redesign prototypes.	

Manufacturing		Complete
Content Skill Sets		Knowledge/ Performance
2461.13	Explain components of set up, machining, casting, molding, welding, and finishing.	
2461.14	Identify and use common hand tools.	

2461.15	Identify and properly use fasteners.	
2461.16	Estimate and measure the size of objects using SI and US units.	
2461.17	Explain the role of quality control in manufacturing.	
2461.18	Measure with precision tools and instruments.	

Assembly and Fabrication		Complete
Content Skill Sets		Knowledge/ Performance
2461.19	Explain the role of quality control in assembly and fabrication.	
2461.20	Identify situations of supplying and outsourcing.	
2461.21	Identify the order and methodology of the assembly process.	

Materials		Complete
Content Skill Sets		Knowledge/ Performance
2461.22	Identify common materials.	
2461.23	Compare and contrast physical properties of materials.	
2461.24	Select correct materials for specific functions.	
2461.25	Test materials for specific characteristics.	

Communication and Teamwork		Complete
Content Skill Sets		Knowledge/ Performance
2461.26	Read and understand design documentation and technical manuals.	
2461.27	Write technical reports.	
2461.28	Make an oral presentation.	
2461.29	Interpret critical aspects and/or types of engineering drawings and plans.	
2461.30	Express data in tables, graphs, and charts.	
2461.31	Contribute to a team project.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2461.32	Exhibit knowledge of appropriate personal safety procedures.	
2461.33	Describe the role of OSHA in the technical workplace.	
2461.34	Describe and use safety equipment.	
2461.35	Describe the function of safety devices.	

Engineering Systems		Complete
Content Skill Sets		Knowledge/ Performance
2461.36	Solve problems using vectoring, predict resultant forces.	
2461.37	Demonstrate the effect of resistance.	
2461.38	Apply Ohm's Law, Watt's Law, and Kirchoff's Law.	
2461.39	Identify series, parallel, and combination circuits.	
2461.40	Apply knowledge of AC and DC systems.	
2461.41	Identify what causes resistance in a fluid system.	
2461.42	Apply knowledge of hydraulic and pneumatic systems.	
2461.43	Identify the three ways heat is transferred.	
2461.44	Explain the difference between Celsius and Fahrenheit scales.	
2461.45	Describe heat conductors and insulators.	
2461.46	Solve thermal problems using appropriate units.	
2461.47	Identify the six simple machines and their applications.	
2461.48	Solve problems using appropriate units in engineering systems.	
2461.49	Identify the uses and types of inductors and capacitors.	
2461.50	Use appropriate electrical units to solve problems.	
2461.51	Draw a circuit diagram and lay out the circuit.	
2461.52	Identify the difference between analog and digital signals.	
2461.53	Identify direction of heat flow given differences in temperature.	
2461.54	Understand the use of insulation to minimize heat flow.	
2461.55	Identify electrical components and their functions.	

Course Description:

Notes: This course aligns with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: Principles of Engineering is a component of the Project Lead the Way (PLTW) pre-engineering curriculum. This course will help students understand the field of engineering and engineering technology. Exploring various technology systems and manufacturing processes help students learn how engineers and technicians use math, science, and technology in an engineering problem solving process to benefit people. The course also includes concerns about social and political consequences of technological change. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This course will fulfill the requirement for a third science course graduation requirement.

This course aligns with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session. Required skill sets are dispersed at this time.

Overview of Engineering		Complete
Content Skill Sets		Knowledge/ Performance
2463.01	Describe major engineering fields.	
2463.02	Identify functions an engineer performs.	
2463.03	Describe education required to be an engineer.	
2463.04	Identify ethics related to engineering situations.	
2463.05	Describe relationships between the engineer and other technical personnel.	
2463.06	Identify the progression of the engineering field.	

Design Process/Problem Solving		Complete
Content Skill Sets		Knowledge/ Performance
2463.07	Identify principles of the problem-solving process.	
2463.08	Outline the steps in the design process.	
2463.09	Translate word problems into mathematical statements.	
2463.10	Analyze solutions, identifying strengths and weaknesses.	
2463.11	Develop details of a solution.	
2463.12	Develop, test, and redesign prototypes.	

Manufacturing**Complete****Content Skill Sets****Knowledge/
Performance**

2463.13	Explain components of set up, machining, casting, molding, welding, and finishing.	
2463.14	Identify and use common hand tools.	
2463.15	Identify and properly use fasteners.	
2463.16	Estimate and measure the size of objects using SI and US units.	
2463.17	Explain the role of quality control in manufacturing.	
2463.18	Measure with precision tools and instruments.	

Assembly and Fabrication**Complete****Content Skill Sets****Knowledge/
Performance**

2463.19	Explain the role of quality control in assembly and fabrication.	
2463.20	Identify situations of supplying and outsourcing.	
2463.21	Identify the order and methodology of the assembly process.	

Materials**Complete****Content Skill Sets****Knowledge/
Performance**

2463.22	Identify common materials.	
2463.23	Compare and contrast physical properties of materials.	
2463.24	Select correct materials for specific functions.	
2463.25	Test materials for specific characteristics.	

Communication and Teamwork**Complete****Content Skill Sets****Knowledge/
Performance**

2463.26	Read and understand design documentation and technical manuals.	
2463.27	Write technical reports.	
2463.28	Make an oral presentation.	
2463.29	Interpret critical aspects and/or types of engineering drawings and plans.	
2463.30	Express data in tables, graphs, and charts.	
2463.31	Contribute to a team project.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2463.32	Exhibit knowledge of appropriate personal safety procedures.	
2463.33	Describe the role of OSHA in the technical workplace.	
2463.34	Describe and use safety equipment.	
2463.35	Describe the function of safety devices.	

Engineering Systems		Complete
Content Skill Sets		Knowledge/ Performance
2463.36	Solve problems using vectoring, predict resultant forces.	
2463.37	Demonstrate the effect of resistance.	
2463.38	Apply Ohm's Law, Watt's Law, and Kirchoff's Law.	
2463.39	Identify series, parallel, and combination circuits.	
2463.40	Apply knowledge of AC and DC systems.	
2463.41	Identify what causes resistance in a fluid system.	
2463.42	Apply knowledge of hydraulic and pneumatic systems.	
2463.43	Identify the three ways heat is transferred.	
2463.44	Explain the difference between Celsius and Fahrenheit scales.	
2463.45	Describe heat conductors and insulators.	
2463.46	Solve thermal problems using appropriate units.	
2463.47	Identify the six simple machines and their applications.	
2463.48	Solve problems using appropriate units in engineering systems.	
2463.49	Identify the uses and types of inductors and capacitors.	
2463.50	Use appropriate electrical units to solve problems.	
2463.51	Draw a circuit diagram and lay out the circuit.	
2463.52	Identify the difference between analog and digital signals.	
2463.53	Identify direction of heat flow given differences in temperature.	
2463.54	Understand the use of insulation to minimize heat flow.	
2463.55	Identify electrical components and their functions.	

Course Description: Engineering Design and Development is a component of the Project Lead the Way (PLTW) pre-engineering curriculum. This is an engineering research course in which students work in teams to research, design, and construct a solution to an open-ended engineering problem. Students apply principles developed in the four preceding courses and are guided by a community mentor. They must present progress reports, submit a final written report, and defend their solutions to a panel of outside reviewers at the end of the school year. Safety instruction is integrated into all activities. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This course aligns with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: Computer Integrated Manufacturing is a component of the Project Lead the Way (PLTW) pre-engineering curriculum. This course will introduce students to principles of robotics and automation and CAD design. The course builds on computer solid modeling skills developed in Computer Integrated Manufacturing, and Design and Drawing for Production. Students use CNC equipment to produce actual models of their three-dimensional designs. Fundamental concepts of robotics used in automated manufacturing and design analysis are included. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: This course aligns with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: Civil Engineering and Architecture is a component of the Project Lead the Way (PLTW) preengineering curriculum. This course provides an overview of the fields of Civil Engineering and Architecture, while emphasizing the interrelationship and dependence of both fields on each other. Students use state of the art software to solve real world problems and communicate solutions to hands-on projects and activities. This course covers topics such as: roles of civil engineers and architects, project planning, site planning, building design, and project documentation and presentation. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: These courses align with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: Aerospace Engineering is a component of the Project Lead the Way (PLTW) pre-engineering curriculum. The major focus of this course is to expose students to the world of aeronautics, flight, and engineering. Students will be introduced to activity-based, project-based, and problem-based learning through exploring the world of Aerospace Engineering. Students should have experience in physics, mathematics, and technology education. They will employ engineering and scientific concepts in the solution of aerospace problems. The entire curriculum sequence will include experiences from the diverse fields of Aeronautics, Aerospace Engineering and related areas of study. Lessons will engage students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organizations, WV SkillsUSA or WV TSA (Technology Student Association). All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Notes: These courses align with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: In ES, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply issues, and renewable energy. Applying their knowledge through hands-on activities and simulations, students research and design potential solutions to these true-to-life challenges.

Notes: These courses align with Project Lead The Way (PLTW). In order to teach PLTW courses, teachers must attend and successfully complete a course-specific training session at one of the PLTW University Affiliates. Required skill sets are dispersed at this time.

Course Description: Energy and Power Foundations is a foundational course on the origins and production of renewable and nonrenewable energy sources with an overview of energy and power career fields and cutting-edge job opportunities. This course provides students with opportunities to directly test and evaluate theories and practices of energy systems.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
2485	AC Energy, Power, and Engineered Systems I
2486	AC Energy, Power, and Engineered Systems II
2487	AC Energy, Power, and Engineered Systems III
2488	AC Energy, Power, and Engineered Systems IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
2485.01	Use social media appropriately and effectively, in personal and professional situations.	
2485.02	Exhibit flexibility and adaptability.	
2485.03	Demonstrate leadership skills.	
2485.04	Recognize others for their contributions.	
2485.05	Demonstrate group process techniques.	
2485.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
2485.07	Exhibit professional practices.	
2485.08	Apply for employment.	
2485.09	Demonstrate employability skills needed to keep a job.	
2485.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
2485.11	Exhibit responsibility.	
2485.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
2485.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
2485.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
2485.15	Ensure healthful working conditions.	
2485.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
2485.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
2485.18	Exhibit interest in making the organization more effective and productive.	
2485.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
2485.20	Explain the necessity and benefits/disadvantages of organizational change.	
2485.21	Identify ways to reduce or prevent injuries and illness.	
2485.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
2485.23	Ensure safe working conditions.	
2485.24	Demonstrate safe use of tools and equipment.	
2485.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
2485.26	Participate in group or team discussions.	
2485.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
2485.28	Explain the importance of teamwork to the overall operation of the business.	

2485.29	Perform work tasks in a team.	
2485.30	Look for ways to help others.	
2485.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
2485.32	Perform math operations using whole numbers, fractions, and percentages.	
2485.33	Gather information.	
2485.34	Provide clear documentation of assignments, goals, and timelines.	
2485.35	Define the problem.	
2485.36	Analyze the problem and identify the solution.	
2485.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
2485.38	Identify the company's mission and the individual employee's contribution to that mission.	
2485.39	Interpret organizational policies and procedures.	
2485.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
2485.41	Engage in conversations with coworkers, supervisors, and clients.	
2485.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
2485.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
2485.44	Interpret and comprehend technical and general interest in written material.	
2485.45	Identify how the company functions within the broad world of business, industry, and service.	
2485.46	Identify ways in which the individual employee represents the organization.	
2485.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
2485.48	Identify aspects of owning or starting up a small business.	
2485.49	Share information using a range of appropriate communications technologies.	
2485.50	Explain the importance of using data to improve company productivity.	

Course Description: Energy Transmission and Distribution is a foundational course that begins after initial energy generation. The course continues from energy transmission to consumer usage and includes the introduction to AC/DC power, transformers, the electrical grid and Smart Grid, and consumer load on the system.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
2485	AC Energy, Power, and Engineered Systems I
2486	AC Energy, Power, and Engineered Systems II
2487	AC Energy, Power, and Engineered Systems III
2488	AC Energy, Power, and Engineered Systems IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
2486.01	Use social media appropriately and effectively, in personal and professional situations.	
2486.02	Exhibit flexibility and adaptability.	
2486.03	Demonstrate leadership skills.	
2486.04	Recognize others for their contributions.	
2486.05	Demonstrate group process techniques.	
2486.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
2486.07	Exhibit professional practices.	
2486.08	Apply for employment.	
2486.09	Demonstrate employability skills needed to keep a job.	
2486.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
2486.11	Exhibit responsibility.	
2486.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
2486.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
2486.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
2486.15	Ensure healthful working conditions.	
2486.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
2486.17	Apply previous learning to situations where problems must be solved, or decisions made quickly.	
2486.18	Exhibit interest in making the organization more effective and productive.	
2486.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
2486.20	Explain the necessity and benefits/disadvantages of organizational change.	
2486.21	Identify ways to reduce or prevent injuries and illness.	
2486.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
2486.23	Ensure safe working conditions.	
2486.24	Demonstrate safe use of tools and equipment.	
2486.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
2486.26	Participate in group or team discussions.	
2486.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
2486.28	Explain the importance of teamwork to the overall operation of the business.	

2486.29	Perform work tasks in a team.	
2486.30	Look for ways to help others.	
2486.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
2486.32	Perform math operations using whole numbers, fractions, and percentages.	
2486.33	Gather information.	
2486.34	Provide clear documentation of assignments, goals, and timelines.	
2486.35	Define the problem.	
2486.36	Analyze the problem and identify the solution.	
2486.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
2486.38	Identify the company's mission and the individual employee's contribution to that mission	
2486.39	Interpret organizational policies and procedures.	
2486.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
2486.41	Engage in conversations with coworkers, supervisors, and clients.	
2486.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
2486.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
2486.44	Interpret and comprehend technical and general interest in written material.	
2486.45	Identify how the company functions within the broad world of business, industry, and service.	
2486.46	Identify ways in which the individual employee represents the organization.	
2486.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
2486.48	Identify aspects of owning or starting up a small business.	
2486.49	Share information using a range of appropriate communications technologies.	
2486.50	Explain the importance of using data to improve company productivity.	

Course Description: Electronics and Control Systems is the advanced Energy, Power & Engineered Systems course designed to provide training and skills necessary to understand energy control systems in the fields of transformers, switches (electrical, pneumatic, hydraulic and mechanical), breakers, panel boards, switchboards, and programmable logic controllers in both residential and industrial settings.

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
2485	AC Energy, Power, and Engineered Systems I
2486	AC Energy, Power, and Engineered Systems II
2487	AC Energy, Power, and Engineered Systems III
2488	AC Energy, Power, and Engineered Systems IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org.

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
2487.01	Use social media appropriately and effectively, in personal and professional situations.	
2487.02	Exhibit flexibility and adaptability.	
2487.03	Demonstrate leadership skills.	
2487.04	Recognize others for their contributions.	
2487.05	Demonstrate group process techniques.	
2487.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
2487.07	Exhibit professional practices.	
2487.08	Apply for employment.	
2487.09	Demonstrate employability skills needed to keep a job.	
2487.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
2487.11	Exhibit responsibility.	
2487.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
2487.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
2487.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
2487.15	Ensure healthful working conditions.	
2487.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
2487.17	Apply previous learning to situations where problems must be solved, or decisions made quickly.	
2487.18	Exhibit interest in making the organization more effective and productive.	
2487.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
2487.20	Explain the necessity and benefits/disadvantages of organizational change.	
2487.21	Identify ways to reduce or prevent injuries and illness.	
2487.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
2487.23	Ensure safe working conditions.	
2487.24	Demonstrate safe use of tools and equipment.	
2487.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
2487.26	Participate in group or team discussions.	
2487.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
2487.28	Explain the importance of teamwork to the overall operation of the business.	

2487.29	Perform work tasks in a team.	
2487.30	Look for ways to help others.	
2487.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
2487.32	Perform math operations using whole numbers, fractions, and percentages.	
2487.33	Gather information.	
2487.34	Provide clear documentation of assignments, goals, and timelines.	
2487.35	Define the problem.	
2487.36	Analyze the problem and identify the solution.	
2487.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
2487.38	Identify the company's mission and the individual employee's contribution to that mission.	
2487.39	Interpret organizational policies and procedures.	
2487.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
2487.41	Engage in conversations with coworkers, supervisors, and clients.	
2487.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
2487.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
2487.44	Interpret and comprehend technical and general interest in written material.	
2487.45	Identify how the company functions within the broad world of business, industry, and service.	
2487.46	Identify ways in which the individual employee represents the organization.	
2487.47	Apply industry quality standards and practices.	

Accountability**Complete****Content Skill Sets****Knowledge/
Performance**

2487.48	Identify aspects of owning or starting up a small business.	
2487.49	Share information using a range of appropriate communications technologies.	
2487.50	Explain the importance of using data to improve company productivity.	

Course Description: Advanced Science and Engineered Systems is the advanced course designed for students to become building technicians, design engineers, recreational engineers, electrical technicians, and CEOs, while learning about real-world energy and power issues. Students will need to have a basic understanding of electricity (both a/c and d/c) and higher-level mathematics. This course incorporates knowledge of multiple sources of energy, engineered systems, societal impact and “the business of energy.”

Notes: Required Courses (No Sequence Required)

WVEIS CODE	Course
2485	AC Energy, Power, and Engineered Systems I
2486	AC Energy, Power, and Engineered Systems II
2487	AC Energy, Power, and Engineered Systems III
2488	AC Energy, Power, and Engineered Systems IV

These courses align with Southern Regional Education Board (SREB) standards. You must receive training to access the curriculum for this Program of Study. For more information, logon to www.sreb.org

Student Led Companies		Complete
Content Skill Sets		Knowledge/ Performance
2488.01	Use social media appropriately and effectively, in personal and professional situations.	
2488.02	Exhibit flexibility and adaptability.	
2488.03	Demonstrate leadership skills.	
2488.04	Recognize others for their contributions.	
2488.05	Demonstrate group process techniques.	
2488.06	Organize work.	

Application/Interview Structure		Complete
Content Skill Sets		Knowledge/ Performance
2488.07	Exhibit professional practices.	
2488.08	Apply for employment.	
2488.09	Demonstrate employability skills needed to keep a job.	
2488.10	Demonstrate personal qualities appropriate to the work environment.	

Formal Attendance System		Complete
Content Skill Sets		Knowledge/ Performance
2488.11	Exhibit responsibility.	
2488.12	Explain the importance of satisfactory attendance to the overall operation of the business.	
2488.13	Call in to notify the supervisor of unanticipated absences.	

Drug Free Work Zone		Complete
Content Skill Sets		Knowledge/ Performance
2488.14	Identify healthy practices and behaviors that will maintain or improve the health of self.	
2488.15	Ensure healthful working conditions.	
2488.16	Identify why drug free work zones are needed to be a productive/safe company.	

6S Environment		Complete
Content Skill Sets		Knowledge/ Performance
2488.17	Apply previous learning to situations where problems must be solved or decisions made quickly.	
2488.18	Exhibit interest in making the organization more effective and productive.	
2488.19	Identify why 6S is important to be an efficient and effective company.	

Safe Work Areas		Complete
Content Skill Sets		Knowledge/ Performance
2488.20	Explain the necessity and benefits/disadvantages of organizational change.	
2488.21	Identify ways to reduce or prevent injuries and illness.	
2488.22	Identify efficient, effective, and ethical uses of technology in the workplace.	
2488.23	Ensure safe working conditions.	
2488.24	Demonstrate safe use of tools and equipment.	
2488.25	Practice environmental conservation and safety.	

Work Place Teams		Complete
Content Skill Sets		Knowledge/ Performance
2488.26	Participate in group or team discussions.	
2488.27	Cooperate in a pleasant and polite manner with clients, coworkers, and supervisors.	
2488.28	Explain the importance of teamwork to the overall operation of the business.	

2488.29	Perform work tasks in a team.	
2488.30	Look for ways to help others.	
2488.31	Take directions willingly.	

Project-Based Learning/Student Engagement		Complete
Content Skill Sets		Knowledge/ Performance
2488.32	Perform math operations using whole numbers, fractions, and percentages.	
2488.33	Gather information.	
2488.34	Provide clear documentation of assignments, goals, and timelines.	
2488.35	Define the problem.	
2488.36	Analyze the problem and identify the solution.	
2488.37	Make recommendations.	

Company Name and Handbook		Complete
Content Skill Sets		Knowledge/ Performance
2488.38	Identify the company's mission and the individual employee's contribution to that mission.	
2488.39	Interpret organizational policies and procedures.	
2488.40	Apply management techniques.	

Company Meeting		Complete
Content Skill Sets		Knowledge/ Performance
2488.41	Engage in conversations with coworkers, supervisors, and clients.	
2488.42	Use the knowledge of computer logic, operation systems, and basic troubleshooting techniques.	
2488.43	Attend team meetings, focus on the topic/purpose, offer facts and ideas, and help others.	

Onsite Business Reviews		Complete
Content Skill Sets		Knowledge/ Performance
2488.44	Interpret and comprehend technical and general interest in written material.	
2488.45	Identify how the company functions within the broad world of business, industry, and service.	
2488.46	Identify ways in which the individual employee represents the organization.	
2488.47	Apply industry quality standards and practices.	

Accountability		Complete
-----------------------	--	-----------------

Content Skill Sets		Knowledge/ Performance
2488.48	Identify aspects of owning or starting up a small business.	
2488.49	Share information using a range of appropriate communications technologies.	
2488.50	Explain the importance of using data to improve company productivity.	

Course Description: This specialization course covers topics in land management and surveying to prepare students for land management careers in the vast natural resources industry. Topics include: geophysical data, surveying, mapping, and title examination and searching. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, FFA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools, and skill sets.

Geology Principles		Complete
Content Skill Sets		Knowledge/ Performance
2494.01	Advanced geology principles.	
2494.02	Oil and natural gas deposits.	
2494.03	Equipment used to prospect and sample for oil and gas.	
2494.04	Prepare notes, sketches, geological maps, or cross-sections.	
2494.05	Read and study reports in order to compile information and data for geological and geophysical prospecting.	
2494.06	Interview individuals and research public databases in order to obtain information.	
2494.07	Assemble, maintain, or distribute information for library or record systems.	
2494.08	Operate or adjust equipment or apparatus used to obtain geological data.	
2494.09	Set-up or direct set-up of instruments used to collect geological data.	
2494.10	Record readings in order to compile data used in prospecting for oil and gas.	
2494.11	Observe oil, water, or gas well-drilling activities.	
2494.12	Collect samples or cuttings using equipment or hand tools.	
2494.13	Evaluate and interpret core samples and cuttings and other geological data used in prospecting for oil and gas.	

Surveying		Complete
Content Skill Sets		Knowledge/ Performance
2494.14	Surveying equipment and instruments.	
2494.15	Data and maps used in surveying.	
2494.16	Mathematical equations used in surveying.	
2494.17	Verify the accuracy of survey data including measurements and calculations at survey sites.	
2494.18	Search legal records, survey records, and land titles to obtain information about property boundaries in areas to be surveyed.	
2494.19	Calculate heights, depths, relative positions, property lines, and other characteristics of terrain.	
2494.20	Prepare and maintain sketches, maps, reports, and legal descriptions of surveys to describe, certify, and assume liability for work	

	performed.	
2494.21	Direct or conduct surveys to establish legal boundaries for properties based on legal deeds and titles.	
2494.22	Prepare or supervise preparation of all data, charts, plots, maps, records, and documents related to surveys.	
2494.23	Write descriptions of property boundary surveys for use in deeds, leases, or other legal documents.	
2494.24	Compute geodetic measurements and interpret survey data to determine positions, shapes, and elevations or geomorphic and topographic features.	
2494.25	Determine longitudes and latitudes of important features and boundaries in survey areas using theodolites, transits, levels, and GPS.	
2494.26	Record the results of surveys including the shape, contour, location, elevation, and dimensions of land or land features.	
2494.27	Establish fixed points for use in making maps using geodetic and engineering instruments.	
2494.28	Adjust surveying instruments to maintain their accuracy.	

Maps		Complete
Content Skill Sets		Knowledge/ Performance
2494.29	Mapmaking.	
2494.30	GPS and GIS.	
2494.31	Topographical maps and their use in land management.	
2494.32	Aerial photographs and their use in land management.	
2494.33	Compare topographical features or contour lines with images from aerial photographs, old maps, or other reference materials to verify the accuracy of their identification.	
2494.34	Research resources such as survey maps or legal descriptions to verify property lines or to obtain information needed for mapping.	
2494.35	Enter global positioning system (GPS) data, legal deeds, field notes, or land survey reports into geographic information system (GIS) workstations so that information can be transformed into graphic land description such as maps or drawings.	
2494.36	Analyze aerial photographs to detect and interpret significant military, industrial, resource, or topographical data.	

Legal Documents		Complete
Content Skill Sets		Knowledge/ Performance
2494.37	Students will demonstrate knowledge of property titles and institutions involved in title examination and searching.	
2494.38	Prepare lists of all legal instruments applying to a specific piece of land and the buildings on it.	
2494.39	Examine documentation such as mortgages, liens, judgments, easements, plat books, maps, contracts, and agreements in order to verify factors such as properties' legal descriptions, ownership or restrictions.	
2494.40	Read search requests in order to ascertain types of title evidence required and to obtain descriptions of properties and names of involved parties.	
2494.41	Copy or summarize recorded documents, such as mortgages, trust deeds, and contracts that affect property titles.	
2494.42	Examine individual titles in order to determine if restrictions, such as delinquent taxes, will affect titles and limit property use.	
2494.43	Prepare reports describing any title encumbrances encountered during searching activities and outlining actions needed to clear	

	titles.	
2494.44	Confer with realtors, lending institution personnel, buyers, sellers, contractors, surveyors, and courthouse personnel in order to exchange title-related information or to resolve problems.	
2494.45	Enter into recordkeeping system appropriate data needed to create new title records or update existing ones.	
2494.46	Obtain maps or drawings delineating properties from company title plants, county surveyors, and/or assessor's offices.	

Course Description: The Arboriculture and Urban Forestry course is a specialization course designed for students to gain understanding of the management of trees in urban forest environments. The performance skill sets are written so students will identify, select, plant, prune and maintain trees and monitor tree health.

Plant Science		Complete
Content Skill Sets		Knowledge/ Performance
2498.01	Cells and tissues of woody plants.	
2498.02	Parts/functions of woody stems.	
2498.03	Parts/functions of buds and branches.	
2498.04	Parts/functions of leaves.	
2498.05	Parts/functions of roots.	
2498.06	The photosynthesis process.	
2498.07	Tree respiration and transpiration.	
2498.08	The growth and development of a tree.	
2498.09	The defense systems of a tree.	
2498.10	Diagram parts of woody stems, buds, branches, leaves and roots.	
2498.11	Take a core sample from a tree and analyze the growth rings and internal parts.	
2498.12	Observe trees and identify various stages of tree growth.	

Pruning		Complete
Content Skill Sets		Knowledge/ Performance
2498.13	Branch attachments.	
2498.14	Timing of when and how much to prune.	
2498.15	Tools used for proper pruning.	
2498.16	Specialty pruning.	
2498.17	Pruning specifications.	
2498.18	Identify different types of branch attachments.	
2498.19	Identify trees that would need the different types of pruning.	
2498.20	Identify tools used in pruning.	
2498.21	Properly write tree specific pruning specifications.	

Dendrology		Complete
Content Skill Sets		Knowledge/ Performance
2498.22	Basic dendrology.	
2498.23	Tree taxonomy.	
2498.24	Identification features of trees.	
2498.25	Identification keys.	
2498.26	How to select trees of the site.	
2498.27	Tree and site considerations.	
2498.28	Selecting nursery trees.	
2498.29	Make a tree identification key.	
2498.30	Identify trees based on leaf characteristics.	
2498.31	Determine common name of common tree species.	
2498.32	Determine if a nursery tree is good tree.	
2498.33	List some considerations of both trees and site.	

Plant Diseases and Disorders		Complete
Content Skill Sets		Knowledge/ Performance
2498.34	Systematic diagnosis.	
2498.35	Symptoms and signs of problems.	
2498.36	Abiotic disorders.	
2498.37	Biotic disorders.	
2498.38	Find assistance in diagnosis.	
2498.39	Diagram the system to diagnose problems.	
2498.40	List both abiotic and biotic disorders.	
2498.41	Identify both abiotic and biotic disorders.	
2498.42	Name some agencies to assist with a diagnosis.	
2498.43	Plant defense mechanisms.	
2498.44	Integrated pest management, definition and basics.	
2498.45	Cultural, biological, and chemical controls.	
2498.46	Alternative pesticide options.	
2498.47	Define the different types of control methods.	

Planting		Complete
Content Skill Sets		Knowledge/ Performance

2498.48	Selecting a tree.	
2498.49	Nursery stock.	
2498.50	Planting techniques.	
2498.51	Early care water and mulching needs.	
2498.52	Stabilization needs.	
2498.53	Early pruning practices.	
2498.54	Planting specifications.	
2498.55	List factors for in selecting good nursery stock.	
2498.56	Name specific trees for specific planting sites.	
2498.57	Select limbs to prune on young trees.	
2498.58	Read and understand basic planting specifications.	

Safety		Complete
Content Skill Sets		Knowledge/ Performance
2498.59	Basic laws and regulations.	
2498.60	PPE.	
2498.61	Communications.	
2498.62	Electrical hazards.	
2498.63	Chainsaw safety.	
2498.64	Tree felling and removal.	
2498.65	Ropes and rope use.	
2498.66	Climbing gear and inspection.	
2498.67	Rescue techniques.	
2498.68	Rigging ropes and equipment.	
2498.69	Rigging and cutting techniques.	
2498.70	List all PPE.	
2498.71	Demonstrate hand signals and vocal communications.	
2498.72	Safely start a chainsaw.	
2498.73	Safely buck a log.	
2498.74	Describe the different arborist rope types.	
2498.75	Identify climbing and rigging equipment.	

Tree Care		Complete
Content Skill Sets		Knowledge/ Performance
2498.76	Types of tree support systems.	

2498.77	Cabling hardware and tools.	
2498.78	Techniques for installing cables.	
2498.79	Using tree stabilization equipment.	
2498.80	Inspecting cable support systems.	
2498.81	Tree fertilization requirements.	
2498.82	Tree fertilization techniques.	
2498.83	Analyzing and prescribing tree fertilization.	
2498.84	Lightning protection.	
2498.85	Trees to protect.	
2498.86	Name the different tree support systems.	
2498.87	Identify cabling tools and hardware.	
2498.88	Explain the steps of cabling a tree.	
2498.89	Identify tree fertilization needs.	
2498.90	List trees that may be susceptible to lightning strikes.	

Tree Inspection		Complete
Content Skill Sets		Knowledge/ Performance
2498.91	Tree inspection.	
2498.92	Tree decay and risk.	
2498.93	Risk management and mitigation options.	
2498.94	Liability and negligence.	
2498.95	Construction damages and practices to mitigate affect.	
2498.96	Grade changes affecting tree health.	
2498.97	Treating construction damaged trees.	
2498.98	Identify tree decay and rot.	
2498.99	Perform a basic tree inspection.	
2498.100	List mitigation practices.	
2498.101	Name effects of improper construction.	

Soil Properties		Complete
Content Skill Sets		Knowledge/ Performance
2498.102	Soil structure, properties and pore space.	
2498.103	Soil moisture and tree growth.	
2498.104	Urban soils.	
2498.105	Water and trees, how they affect each other	

2498.106	Identify soil layers.	
2498.107	List the effects of water on tree growth.	
2498.108	Name factors that affect urban soils.	

Course Description: CSA focuses on integrating technologies across multiple platforms and networks, including the Internet. Students collaborate to produce programs that integrate mobile devices and leverage those devices for distributed collection and data processing. Students analyze, adapt, and improve each other's programs while working primarily in Java™ and other industry-standard tools. This course prepares students for the AP Computer Science-A course.

Notes: These courses align with AP College Board. In order to teach AP courses, teachers must attend and successfully complete a course-specific training session at one of the AP Training. Required skill sets are dispersed at this time.

Course Description: Using Python® as a primary tool and incorporating multiple platforms and languages for computation, this course aims to develop computational thinking, generate excitement about career paths that utilize computing, and introduce professional tools that foster creativity and collaboration. This course can be a student's first course in computer science, although we encourage students without prior computing experience to start with Introduction to Computer Science. CSP helps students develop programming expertise and explore the workings of the Internet. Projects and problems include app development, visualization of data, cybersecurity, and simulation. This course aligns with the AP Computer Science Principles course PLTW is recognized by the College Board as an endorsed provider of curriculum and professional development for AP® Computer Science Principles (AP CSP). This endorsement affirms that all components of PLTW CSP's offerings are aligned to the AP Curriculum Framework standards and the AP CSP assessment. Using an endorsed provider affords schools access to resources including an AP CSP syllabus pre-approved by the College Board's AP Course Audit, and officially recognized professional development that prepares teachers to teach AP CSP.

Notes: These courses align with AP College Board. In order to teach AP courses, teachers must attend and successfully complete a course-specific training session at one of the AP Training. Required skill sets are dispersed at this time.

Course Description: This course will build on the knowledge and skills learned in Sign Language 1. It is designed for students to continue to acquire advanced American Sign Language (ASL) vocabulary. Grammatical aspects of ASL will be practiced and applied. Students will enhance their receptive, expressive, and interactive ASL skills. Students will continue to learn aspects of Deaf history and culture in this course. Additionally, students will be able to interact with the Deaf community.

Basic Communication		Complete
Content Skill Sets		Knowledge/ Performance
0301.1	Communicate in American Sign Language (ASL) on a wide range of topics.	
0301.2	Incorporate and understand appropriate handshapes, palm orientations, location, movement, and non-manual behaviors in signing.	
0301.3	Use and comprehend fingerspelling and numbers.	

ASL Vocabulary		Complete
Content Skill Sets		Knowledge/ Performance
0301.4	Expand ASL vocabulary both expressively and receptively.	
0301.5	Ask and answer questions on complex topics using more advanced ASL vocabulary.	

Expressive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.6	Present information and/or stories/poems on topics from a signed, oral, or written source correctly.	
0301.7	Give directions, commands, requests, and instructions.	
0301.8	Communicate the need for clarification on topics to confirm understanding.	
0301.9	Produce signs that are clear, fluent, and accurate.	
0301.10	Fingerspell clearly and fluently.	
0301.11	Mark sentence and topic boundaries by pausing appropriately.	
0301.12	Express needs, likes, and dislikes with supporting details.	
0301.13	Incorporate facial expressions, body language, and non-manual markers.	

Receptive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.14	Recognize words, phrases, and sentences in ASL.	
0301.15	Comprehend main ideas using vocabulary on various topics.	

0301.16	Follow directions, commands, and instructions.	
0301.17	Understand stories, poems, and informational texts.	
0301.18	Differentiate between similar descriptions of people, ideas, objects, and emotions based on signed descriptions.	

Interactive ASL		Complete
Content Skill Sets		Knowledge/ Performance
0301.19	Have conversations on information about different topics.	
0301.20	Request and provide information on a variety of topics.	
0301.21	Ask and answer questions on various topics.	
0301.22	Negotiate the meaning of signed information to reach understanding.	
0301.23	Discuss opinions and preferences about personal experiences and other topics.	

Deaf Culture		Complete
Content Skill Sets		Knowledge/ Performance
0301.24	Demonstrate knowledge and understanding of the relationships of practices and contributions of Deaf culture and the Deaf community.	
0301.25	Discuss ASL literary examples including visual elements of ASL expansion.	
0301.26	Describe contributions made by individuals contributing to Deaf heritage.	
0301.27	Research the significance of ASL, objects, images, products, and symbols of Deaf culture.	
0301.28	Explore the membership of the Deaf community.	
0301.29	Identify organizations and their roles in the Deaf community.	
0301.30	Conceptualize and debate topics pertinent to Deaf culture.	
0301.31	Study Deaf humor, literature, and cultural arts of the Deaf community.	

ASL Comparisons		Complete
Content Skill Sets		Knowledge/ Performance
0301.32	Examine and compare options regarding ASL as a language.	
0301.33	Summarize the syntactical and linguistic similarities and differences between ASL and English.	
0301.34	Analyze and debate topics pertinent to ASL.	
0301.35	Communicate with inflections for questions, negatives, and statements in ASL while comparing this to the inflectional patterns in English.	
0301.36	Utilize critical elements of ASL that must be mastered to convey meaning.	

Non-manual Behaviors		Complete
-----------------------------	--	-----------------

Content Skill Sets	Knowledge/ Performance
0301.37 Use appropriate facial expressions in all signing.	
0301.38 Demonstrate proper body language in all interpreting.	
0301.39 Clearly show spatial organization in all signed communication.	
0301.40 Incorporate all essential non-manual markers into signing.	

Community	
Content Skill Sets	Complete Knowledge/ Performance
0301.41 Use ASL within and beyond the school setting (club activities, "silent dinners," etc.).	
0301.42 Show evidence of becoming life-long learners by using ASL for personal enjoyment, enrichment, and career development.	
0301.43 Locate resources for the Deaf and recognize the potential of ASL.	
0301.44 Present ASL and Deaf awareness information.	
0301.45 Identify opportunities to use ASL for enjoyment.	
0301.46 Research deafness-related careers.	
0301.47 Attend or view cultural events and social activities.	
0301.48 Expand knowledge of career opportunities and limitations by reviewing legislation affecting career choices and accommodations.	

Professionalism	
Content Skill Sets	Complete Knowledge/ Performance
0301.49 Adhere to the interpreter's professional tenets, conduct, and considerations.	
0301.50 Follow the proper dress code for interpreting.	
0301.51 Understand the interpreter's roles and responsibilities.	
0301.52 Practice ethical decision-making.	

History of the Profession	
Content Skill Sets	Complete Knowledge/ Performance
0301.53 Examine the history of sign language interpreters.	
0301.54 Recognize sign language interpreter assessments and levels.	

ASL Foundations	
Content Skill Sets	Complete Knowledge/ Performance
0301.55 Utilize and interpret basic ASL classifiers handshapes.	

0301.56	Use ASL affirmation and negation.	
0301.57	Apply directionality of verbs in ASL.	
0301.58	Utilize time-markers.	
0301.59	Incorporate plurals in signing.	
0301.60	Map signing space.	
0301.61	Accurately use pronouns.	
0301.62	Include non-manual sign modifications (mouth movement, eyebrows, eye gaze, etc.).	

Legal Aspects		Complete
Content Skill Sets		Knowledge/ Performance
0301.63	Demonstrate content knowledge of significant laws pertaining to interpreters.	
0301.64	Apply laws to the interpreting profession.	

Connections		Complete
Content Skill Sets		Knowledge/ Performance
0301.65	Reinforce and add further knowledge of other disciplines using ASL.	
0301.66	Use technology to obtain information and resources pertaining to the Deaf community.	
0301.67	Examine resources and information pertaining to the interpreting profession.	
0301.68	Identify issues from different perspectives of members of the Deaf community (i.e., using topics found in Deaf publications such as <i>WVAD Newsletter</i> , <i>Deaf President Now</i> , and other state and federal legislation, etc.).	
0301.69	Analyze the appropriate technology available to the Deaf community in cross-cultural settings.	
0301.70	Articulate the main ideas and other significant details on topics from other classes or from Deaf culture as presented on videos or live presentations.	

Course Description: This course is designed to provide students with the awareness of the impact of tourism in West Virginia and how tourism effects the West Virginia economy. Instruction integrates differentiated learning, technology, and informational content standards to provide knowledge and understanding of the nine tourism regions of the state. Utilizing West Virginia tourism development strategies that incorporate the economic, physical, social, and cultural geography of the state, stakeholders investigate and explore entrepreneurship, professionalism, and marketing strategies to create career building opportunities within the West Virginia travel, tourism and hospitality industry. Students utilize problem-solving techniques and participate in hands-on activities to develop an understanding of course concepts. Teachers should provide each student with real world learning opportunities and instruction. Students are encouraged to become active members of the student organization, DECA, FCCLA, or SkillsUSA. All West Virginia teachers are responsible for classroom instruction that integrates learning skills, technology tools and skill sets.

General Hospitality and Tourism Technical Skills		Complete
Content Skill Sets		Knowledge / Performance
7663.01	Apply marketing strategies and techniques within a hospitality and tourism context.	
7663.02	Apply customer service techniques in a hospitality and tourism context.	
7663.03	Identify elements of geography and climate that affect the hospitality and tourism industry.	

Academic Foundations		Complete
Content Skill Sets		Knowledge / Performance
7663.04	Apply reading skills in a hospitality and tourism career environment.	
7663.05	Apply writing skills in a hospitality and tourism career environment.	
7663.06	Apply mathematical skills in a hospitality and tourism career environment.	
7663.07	Apply knowledge of economics in a hospitality and tourism career environment.	

Ethics and Legal Responsibilities		Complete
Content Skill Sets		Knowledge / Performance
7663.08	Apply appropriate laws, regulations, industry standards to hospitality and tourism situations.	
7663.09	Identify ethical issues and demonstrate ethical behavior in hospitality and tourism situations.	

Communications**Complete****Content Skill Sets****Knowledge /
Performance**

7663.10	Locate, organize, reference written information to communicate with coworkers and clients.	
7663.11	Develop and deliver formal and informal presentations using media to engage and inform diverse audiences.	
7663.12	Apply listening skills; interpret verbal and nonverbal behaviors to communicate with coworkers and clients.	
7663.13	Interpret and use tables, charts, and figures.	

Information Technology Applications**Complete****Content Skill Sets****Knowledge /
Performance**

7663.14	Use word processing, presentation, and email applications to prepare communications.	
7663.15	Use spreadsheet and database applications to manage and communicate data and information.	

Problem Solving, Critical Thinking, and Decision Making**Complete****Content Skill Sets****Knowledge /
Performance**

7663.16	Use problem solving/critical thinking to locate information about problems and determine causes.	
7663.17	Use problem solving/critical thinking; determine root causes of problems; evaluate solutions.	

Leadership and Teamwork**Complete****Content Skill Sets****Knowledge /
Performance**

7663.18	Exhibit leadership qualities to improve the quality of work and the work environment.	
7663.19	Work effectively in a team environment to improve the quality of work and the work environment.	

Employability and Career Development**Complete****Content Skill Sets****Knowledge /
Performance**

7663.20	Demonstrate employability skills related to a career in hospitality and tourism.	
7663.21	Pursue career development skills to advance in hospitality and tourism careers.	
7663.22	<i>Develop a presentation about a career option in hospitality in West Virginia (WV Only).</i>	

West Virginia Standards**Impact of Tourism in West Virginia****Complete**

Content Skill Sets		Knowledge / Performance
7663.23	Interpret data regarding tourism in West Virginia.	
7663.24	Categorize types of tourism available in West Virginia.	
7663.25	Research West Virginia's infrastructure and its importance in developing tourism in West Virginia.	
7663.26	Complete the training for the Certificate of Recognition in West Virginia Welcome.	

Pride in the State of West Virginia**Complete**

Content Skill Sets		Knowledge / Performance
7663.27	Research the effectiveness to slogans the promote West Virginia.	
7663.28	Propose strategies to increase a positive view of West Virginia.	

West Virginia's Economic, Physical, Social, and Cultural Landscape**Complete**

Content Skill Sets		Knowledge / Performance
7663.29	Locate the nine tourist regions of West Virginia on a map.	
7663.30	Locate ten places of cultural significance in West Virginia.	
7663.31	Locate ten places of economic significance in West Virginia that are nature based related to Parks, Recreation and Tourism.	
7663.32	Locate ten places of recreational interest in West Virginia that are man-made in each of the tourism regions.	
7663.33	Categorize historical/geographic places of interest in each of the tourism regions.	
7663.34	Categorize historical places of interest by time period in each of the tourism regions.	

Economic Opportunities in the Regions of West Virginia**Complete**

Content Skill Sets		Knowledge / Performance
7663.35	Chart the strengths and weaknesses of each of the tourist regions.	
7663.36	Categorize the industries and products that are most important to West Virginia's economy.	
7663.37	Evaluate the economic impact of special events such as fairs, festivals, etc.	
7663.38	Examine how an increase or decrease in tourism affects businesses.	
7663.39	Evaluate the importance of natural and historical preservation versus economic progress.	

Role of Business Innovation in West Virginia Tourism		Complete
Content Skill Sets		Knowledge / Performance
7663.40	Evaluate information from a variety of sources to assess marketing needs for the local tourism region.	
7663.41	Formulate a marketing strategy in digital and social networking for a new hospitality or tourism business in the local region.	
7663.42	Prepare a summary of a business idea in tourism.	
7663.43	Defend a need for a business idea in tourism.	
7663.44	Relate the business to the current infrastructure.	
7663.45	Create a facility design of a tourism business idea.	
7663.46	Prepare advertising element for the business idea.	
7663.47	Prepare a presentation about the business idea.	

Course Description:

Impact of Tourism in West Virginia		Complete
Content Skill Sets		Knowledge / Performance
7664.1	Explain the factors that impact tourism.	
7664.2	Analyze the relationship between employee attitude, appearance, actions, and customer satisfaction.	
7664.3	Complete the training for West Virginia Welcome.	

Pride in the State of West Virginia		Complete
Content Skill Sets		Knowledge / Performance
7664.4	Describe examples of positive and negative stereotyping of West Virginia.	
7664.5	Propose strategies to increase a positive view of West Virginia.	

West Virginia's Tourism Landscape		Complete
Content Skill Sets		Knowledge / Performance
7664.6	Identify the nine travel regions of West Virginia on a map.	
7664.7	Locate historical/geographic places of interest in each of the travel regions.	
7664.8	Locate significant West Virginia parks.	
7664.9	Locate places of recreational interest in West Virginia.	

Economic Opportunities in the Regions of West Virginia		Complete
Content Skill Sets		Knowledge / Performance
7664.10	Describe the industries and products that are most important to West Virginia's economy.	
7664.11	Explain the economic impact of special events such as fairs, festivals, etc.	
7664.12	Explain how an increase or decrease in tourism affects businesses.	
7664.13	Formulate a business idea to support West Virginia tourism and create a presentation.	

Careers in West Virginia Tourism

Complete

Content Skill Sets

Knowledge /
Performance

7664.14 Identify careers in the hospitality and tourism industry.

7664.15 Describe the benefits of a career in hospitality and tourism.

7664.16 Demonstrate job seeking skills.