



Great Oaks Career Campuses

Course Guide

2020-21 School Year

Welcome to Great Oaks Career Campuses

Great Oaks provides high quality career-technical and academic programs to meet the needs of students and our communities. These programs provide experiential learning options for students and expand the paths that our affiliated schools can offer.

Great Oaks classes integrate academics with technical skill development to help prepare our students for higher-level courses in college as well as professional certifications.

This guide details the courses included in each career major as well as the academic offerings at Great Oaks campuses. It is intended to help students and staff plan for current class schedules and future graduation.

Career Technical Assurance Guides (**CTAG**) – The Career Technical Courses listed with “**CTAG**” are courses that if successfully completed are eligible for college credit at an Ohio public college or university in an approved post-secondary pathway. Some of the **CTAG** credits are combined with successful completion of an industry credential and/or passage of WebXams, which are end of course assessments for our Career and Technical courses.

For more information on **CTAG** go to: <https://www.ohiohighered.org/transfer/ct2/earning-college-credit> .

NOTE: The phrase “Credit Recommendation” appears throughout this guide; this is the credit that Great Oaks recommends to affiliated high schools for successful completion of the course.

Table of Contents

Academic Courses	4-8
English Courses	4
Math Courses	4
Science Courses	5
Social Studies Courses	6
Junior Reserve Officer Training Corps (JROTC)	7
College Credit Plus (CCP)-Academic Courses	8
Career Programs	9-30
Animal Science and Management	9
Automotive Refinishing and Collision Repair	9
Automotive Service Technician	10
Aviation Maintenance Technician	11
CareerX	12
CNC Advanced Manufacturing Technologies	12
Commercial & Residential Electricity	13
Construction Framing and Finishing Technologies	13
Construction Technologies	14
Cosmetology	15
Culinary Arts and Hospitality Services	16
Dental Assisting	16
Digital Arts and Design	17
Early Childhood Education	18
Engineering Technologies and Robotics	19
Equine Science and Management	20
Exercise Science and Sports Medicine	20
Firefighting/Emergency Medical Service	21
Health Technology	22
Heating, Ventilating, and Air Conditioning	23
Heavy Equipment Operations and Engineering	24
Industrial Diesel Mechanics	24
IT Systems and Cybersecurity	25
Law Enforcement	26
Secondary Practical Nursing	27
Surgical Technology	27
Veterinary Assisting	28
Web Applications and Game Development	29
Welding	30

Academic Courses

English Courses

English 11

Subject Code: 050180

All Year

Credit Recommendation: 1

This course is devised to help students build on their present views, thoughts, and beliefs through carefully crafted thematic units. Students will closely read and analyze a variety of print and non-print texts each quarter to gain an understanding of multiple perspectives while beginning to determine and question their own. Students will communicate their analysis through a variety of formats including essay and authentic writing opportunities, project-based learning, interpersonal communication and global discourse. Class structure, activities, and assessments are intentionally created to support a diverse classroom and working environments.

English 12

Subject Code: 050190

All Year

Credit Recommendation: 1

This course was devised to help students build and apply their reading, writing, speaking, and listening skills for real-world, authentic application. This course is intentionally designed to support the senior student as they transition to life after high school. The class focuses on building the essential interpersonal and workplace communication skills that contribute to ongoing success. Throughout this course, students will focus on goal setting and reflection, research for industry and self-improvement, increasing their digital literacy and online presence, and crafting their professional story. This course will also center on the fundamentals of effective speaking and listening, technical and narrative writing, research, developing a personal brand, and critical workplace skills to prepare students for the 4th Industrial Revolution.

Math Courses

Algebra II

Subject Code: 110302

All Year

Credit Recommendation: 1

This course is a continuation of Algebra I. Topics of study will include polynomial, rational, trigonometric, exponential and logarithmic functions, sequences and series, complex numbers and conditional probability, interpreting data and making inferences, including applications that develop problem solving and modeling techniques. Conceptual understanding and utilizing algebra as a problem-solving tool will be emphasized.

Calculus

Subject Code: 110600

All Year

Credit Recommendation: 1

This course has been designed for those students who have shown significant mastery of algebraic and trigonometric skills. Students are exposed to studies in many rigorous topics including limits, continuity, differentiation, definition of the integral which is a fundamental theorem of calculus, exponential, logarithmic, and trigonometric functions. Students will also study various applications including slope and area of non-linear functions, motion of objects and growth and decay. Mathematical applications will include economics, construction and business practices.

Computer Science Principles

Subject Code: 290250

All Year

Credit Recommendation: 1

This course serves as a math elective. Students will gain an understanding of computing principles. Using creativity and problem-solving, students will create products (including web applications) that demonstrate the ideas and science behind the world of computer innovation. Students must have completed Geometry and Algebra II to take this course.

Financial Algebra**Subject Code: 110500****All Year****Credit Recommendation: 1**

This course is an algebra-based applications-oriented, technology dependent course that is a hybrid of advanced algebra, pre-calculus, and statistics and is based on Ohio's Learning Standards. It builds on the foundation of algebra and focuses on the mathematics of the stock market, modeling business, banking services, consumer credit, property ownership, employment, income taxes, independent living, retirement and budgeting. Students can choose this course as an elective or as an Algebra II equivalent to meet graduation requirements.

Geometry**Subject Code: 111200****All Year****Credit Recommendation: 1**

This course examines theorems, properties, vocabulary and concepts and shapes. Congruence, similarity, area, and volume of both two and three-dimensional figures will be studied. Transformations and coordinate geometry are topics throughout the course. Logical deductive reasoning will be developed along with an appreciation of geometry as a means of describing the physical world as prescribed in Ohio's Learning Standards.

Pre-Calculus**Subject Code: 110099****All Year****Credit Recommendation: 1**

This course will further expand the understanding of concepts experienced in the previous courses of Algebra, Geometry and Advanced Algebra (Algebra II). Based on Ohio's Learning Standards, the course will focus on these critical areas: complex number system and operations, matrix operations and applications, vector operations, solving systems of equations, family of functions, modeling and creating functions, trigonometric functions and the unit circle.

Science Courses**Advanced Biology****Subject Code: 132330****All Year****Credit Recommendation: 1**

This course is a laboratory-oriented second year biology course that deals with the following topics: cell biology and new developments in molecular biology and genetic engineering, cellular respiration and photosynthesis, evolution, animal behavior, and current environmental and bioethical issues.

Anatomy and Physiology**Subject Code: 139998****All Year****Credit Recommendation: 1**

This course explores the structure and the function of the human body. Students study the ways the human body maintains its internal environment and the chemical and electrical controls that help co-ordinate the human body systems. Diseases and disorders of the human body are also investigated. Students engage in inquiry-based laboratory experiences that incorporate scientific reasoning, analysis, communication skills and real-world applications.

Chemistry**Subject Code: 130301****All Year****Credit Recommendation: 1**

This course is based on Ohio's Learning Standards and will study the structure of matter, how matter interacts and the exploration of the classification of matter. Investigations are used to understand and explain the behavior of matter. By using metric measuring systems, significant digits, scientific notation, error analysis and dimensional analysis, students learn to communicate scientifically. An understanding of leading theories and how they have informed current knowledge prepares students with higher order cognitive capabilities of evaluation, prediction and application.

Environmental Science**Subject Code: 132350****All Year****Credit Recommendation: 1**

This course incorporates biology, chemistry, physics and physical geology by exploring the interconnectedness of Earth's sphere. Investigations are used to understand and explain the behavior of nature in a variety of inquiry and design scenarios that incorporate scientific reasoning, analysis, communication skills and real-world applications. Topics include study of the atmosphere, hydrosphere, lithosphere, and global environmental problems and issues per Ohio's Learning Standards.

Forensics (Scarlet)**Subject Code: 139998****All Year****Credit Recommendation: 1**

The foundations forensic science course focuses on practices and analysis of physical evidence found at crime scenes. The fundamental objective is to teach the basic processes and principles of scientific thinking and apply them to solve problems that are not only science related, but cross the curriculum with critical thinking skills. Topics will include: Introduction to Forensic Science and the Law, Types of Evidence, The Crime Scene, Fingerprints, Hair, Fibers, Drugs, Toxicology: Poisons and Alcohol, Trace Evidence, Soil and Glass Analysis, Blood, DNA Analysis, Forensic Entomology, Human Remains, Firearms, Tool-marks and Impressions, Document and Handwriting analysis, Cybercrime, and Forensic Psychology.

Materials Science Chemistry**Subject Code: 139998****All Year****Credit Recommendation: 1**

This course focuses on the study of materials we use every day. Four major units of study form the basis of the MSC course: solids, metals, ceramics/glass and polymers. Each unit will include a study of the properties and basic chemistry of that particular group of materials. Testing methods and manufacturing processes will also be investigated. A multi-instructional approach is used that appeals to many learning styles. This approach focuses on solving problems, creating student projects, working in small groups on open-ended experiments, writing as a means of learning, participating in demonstrations and activities, using experts in materials, and using a large variety of written resources and videos.

Physics**Subject Code: 130302****All Year****Credit Recommendation: 1**

This course is based on Ohio's Learning Standards and elaborates on the study of the key concepts of motion, forces and energy as they relate to increasingly complex systems. Students engage in investigations to understand and explain motion, forces and energy in a variety of inquiry and design scenarios that incorporate scientific reasoning, analysis, communication skills and real-world applications. Projectiles, momentum and motion, energy and waves, electricity and magnetism are among the concepts studied.

Social Studies Courses**American History****Subject Code: 150810****All Year****Credit Recommendation: 1**

This course examines the history of the United States of America from 1877 to the present. Students will gain an understanding of how the federal republic's experience with challenges to its national security happened and how expansion of citizens' rights has impacted challenges for the United States. Students will develop an understanding of their role as citizens and an understanding of the rights and responsibilities of citizenship. Students will be able to comprehend complex history texts and develop the skills necessary to write analyses incorporating details and facts to communicate effectively as prescribed in Ohio's Learning Standards.

Economics **Semester Course** **Credit Recommendation: 0.5**

Subject Code: 150600

This course explores the major forces that act on individuals and nations as they make choices about how to use limited resources. Students will also learn basic financial literacy. Topics of study include the making of fiscal and monetary policy, the relationship between buyers and sellers, the structure and function of the global economy, the dynamics of working and earning, saving and investing, credit and debt, and money management.

Government

Subject Code: 150300 **All Year** **Credit Recommendation: 1**

This course explores the philosophical foundations and inner workings of American government. Students learn the fundamentals of civic involvement, the contents of the U.S. Constitution, the structure and functions of the federal government, the broad role of the individual in a free society, the influence of federalism in Ohio's state and municipal governance, the creation and implementation of public policy, and government's role in the economy. Students will gain an understanding of complex history texts and develop the skills necessary to write analyses incorporating details and facts to communicate effectively as prescribed in Ohio's Learning Standards. Students also learn basic financial literacy.

Sociology

Subject Code: 151300 **Semester Course** **Credit Recommendation: 0.5**

This course explores the factors that influence individual and group behavior. Students will study how groups, family structure, institutions and cultural variations influence an individual's behavior. Students will be encouraged to develop objective attitudes through reading, experiments, discussions, surveys, and polls.

Junior Reserve Officer Training Corps (JROTC) (Diamond, Live and Scarlet Oaks)

Subject Code: 220001 **All Year** **Credit Recommendation: 1.0**

Junior Reserve Officer Training Corps (JROTC) is a program that is offered at the high school level and teaches students the value of citizenship, leadership, service to the community, personal responsibility, and a sense of accomplishment, while instilling in them self-esteem, teamwork, and self-discipline. JROTC provides instruction on the dual role of citizen/soldiers to better prepare high school students for responsible leadership roles while making them aware of their rights, responsibilities, and privileges as American citizens. The course promotes graduation from high school and provides instructional opportunities which benefit the student, community and nation. Wearing the military uniform once a week is a requirement to participate in JROTC. While in uniform, cadets must meet the minimum appearance standards listed in the appropriate regulation, including haircut standards. The following branches are represented at Great Oaks: Diamond Oaks - Army JROTC, Live Oaks - Army JROTC and Scarlet Oaks - Navy JROTC.

JROTC II

Subject Code: 220001 **All Year** **Credit Recommendation: 1.0**

This course is for students enrolled in their 2nd year of JROTC.

JROTC III

Subject Code: 220001 **All Year** **Credit Recommendation: 1.0**

This course is for students enrolled in their 3rd year of JROTC.

JROTC IIII

Subject Code: 220001 **All Year** **Credit Recommendation: 1.0**

This course is for students enrolled in their 4th year of JROTC.

College Credit Plus

Students who meet the qualification requirements may enroll in College Credit Plus options. These students will earn both high school credit for the subject plus college credits after successful completion of the course. The college credits will appear on the student's Hocking College/Cincinnati State transcript. For example, a student passes College English and receives credit for high school English, plus earns four semester College Credits. All options are one-year courses offered in partnership with Hocking College and Cincinnati State.

Hocking College CCP Courses Offered on Great Oaks Campuses			
Course Number	Course Name	Hocking Credits	High School Credit
ENGL 1510	English Composition I	4	1
ENGL 2123	English Composition II	3	1
MATH 1113	College Algebra	4	1
BIOS 1121	Biology I	4	1
CHEM 1101	Fundamentals of Chemistry	4	1
GOVT 1142	American Government & Politics	3	1
Note: Courses are offered based on interest and staffing. If courses are not offered due to staffing, comparable online courses may be offered through Cincinnati State. See chart below.			

Cincinnati State CCP Courses Offered Online on Great Oaks Campuses			
Course Number	Course Name	Hocking Credits	High School Credit
ENG 101	English Composition 1	3	1
ENG 104	English Composition 2: Technical Communication	3	1
BIO 111	Biology: Unity of Life	4	1
POL 101	Introduction to American Government	3	1
PSY 110	Introduction to Psychology	3	1
MAT 131	Statistics 1	3	1
HST 101	World History	3	1
Note: Courses are offered by Cincinnati State based on interest and availability.			

Career Programs

Animal Science and Management (Laurel and Live Oaks)

Junior Year:

Companion Animal Selection, Nutrition & Mgt.

Subject Code: 010925

All Year

Credit Recommendation: 1.5

Students will identify and apply responsible animal science principles and routine husbandry practices to companion animals. Topics will include principles and practices of nutrient utilization, breeding programs and management of facility/housing design, meal plans and general care practices. Students will apply knowledge of companion animal care to enhance animal growth, enrichment, training, and education engagement programs. Throughout the course, students will follow practices for care and legal compliance in relation to classification of animals.

Animal Health

Subject Code: 010915

All Year

Credit Recommendation: 1.5

Students will examine causes, symptoms, and treatment of common diseases with emphasis on developing preventative health management plans. Topics will include the study of pathogens and classifying types of diseases and disorders. Students will perform animal health assessments and compare to standard characteristics. Throughout the course, students will utilize principles of technology to manage information systems and research issues affecting the industry.

Senior Year:

Business Mgt. for Agricultural & Environmental Systems (CTAG)

Subject Code: 010115

All Year

Credit Recommendation: 1.5

Students will examine elements of business, identify organizational structures and apply management skills while developing business plans, financial reports and strategic goals for new ventures or existing businesses. Learners will use marketing concepts to evaluate the marketing environment and develop a marketing plan with marketing channels, product approaches, promotion and pricing strategies. Throughout the course, students will apply concepts of ethics and professionalism, while implications of business regulations will be identified.

Animal Science and Technology (CTAG)

Subject Code: 010910

All Year

Credit Recommendation: 1.5

Students will learn and apply responsible animal management principles and routine husbandry practices. Topics will include nutrition, feeding and caring for animals, body/carcass composition evaluation, and applying marketing principles to the sale and distribution of animal products. Learners will investigate animal genetics and how it impacts principles of animal improvement, selection and marketing. Throughout the course, learners will develop business leadership, problem-solving and communication skills in relation to the science of animals.

Automotive Refinishing and Collision Repair (Diamond, Laurel, Live and Scarlet Oaks)

Junior Year:

Painting and Refinishing

Subject Code: 177012

All Year

Credit Recommendation: 1.5

Students will restore and refinish vehicle exterior body and paint finish. Students will inspect and identify substrate, type of finish, surface condition, and film thickness; and develop and execute a plan for refinishing using a total product system. Students will inspect, clean, and determine condition of spray guns and related equipment. Additionally, students will observe safety precautions when using hazardous materials.

Nonstructural Inspection**Subject Code: 177011****All Year****Credit Recommendation: 1.5**

Students will learn the skills and knowledge of automotive body panel repairs, replacements, and adjustments. Students will analyze, document and repair nonstructural collision damage. Students will remove corrosion protection, undercoating, sealer, and other protective coatings as necessary to perform repairs. Emphasis will be given to joining and cutting aluminum, steel and other metals. Students will maintain tools and facilities while complying with personal and environmental safety practices.

Senior Year:**Structural Inspection and Repair****Subject Code: 177010****All Year****Credit Recommendation: 1.5**

Students will perform automotive collision repair of full and uni-body frames and attach non-structural components. Students will apply the skills and knowledge needed to measure and diagnose structural damage, create a parts list, and determine labor costs. Students will remove and replace damaged structural components. Emphasis will be given to joining and cutting aluminum, steel and other metals. Students will maintain tools and facilities while complying with personal and environmental safety practices.

Electrical and Mechanical Systems**Subject Code: 177009****All Year****Credit Recommendation: 1.5**

Students will perform inspections and repair electrical and mechanical damage due to collision. Topics include electrical and wiring harness, suspension, braking and cooling system repairs. Students will service supplemental restraint systems (SRS) and ensure the integrity of the systems.

Automotive Service Technician (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Ground Transportation Maintenance (CTAG)****Subject Code: 177000****All Year****Credit Recommendation: 1.5**

In this first course, students will apply skills needed to inspect and perform general service on vehicles. Students will research applicable service information and technical service bulletins, and perform maintenance on vehicles. Students will inspect and service engine, drive train, suspension, steering, electrical and braking systems. Students will perform ignition maintenance including spark plug/glow plug and ignition wire and coil pack replacement. Additionally, students change fluids, filters and inspect vehicles for leaks and fluid condition.

Automotive Braking, Suspension and Steering Systems**Subject Code: 177003****All Year****Credit Recommendation: 1.5**

Students will perform inspections, troubleshoot malfunctions and service automotive undercarriage systems. Students will identify poor performing hydraulic brake systems and replace malfunctioning components. Students will install coil and leaf springs, shock absorbers and struts, and replace wheel bearings. Students will inspect and replace automotive steering components and perform wheel alignments. Additionally, students will disable and enable supplemental restraint systems (SRS) and replace antilock brake systems components.

Senior Year:**Ground Transportation Electrical/Electronic****Subject Code: 177002****All Year****Credit Recommendation: 1.5**

Students will diagnose and repair vehicle electrical systems including chassis electrical, charging, starting and lighting systems. Students will learn the fundamentals of direct current (DC) electronics including series, parallel, and series-parallel circuits. Students will use electronic diagnostic tools, read schematics, and utilize printed and electronic repair manuals to troubleshoot electrical circuits, test components and replace defective modules.

Automotive Engine Performance**Subject Code: 177006****All Year****Credit Recommendation: 1.5**

Students will research vehicle service histories using model specific service bulletins. Students will test and diagnose for engine performance in fuel, air induction and exhaust systems using advanced testing procedures. Topics include computerized engine controls including retrieving and recording diagnostic trouble codes using On Board Diagnostics (OBD). Additionally, students will diagnose drivability and emissions problems resulting from malfunctions of interrelated systems.

Aviation Maintenance Technician (Laurel Oaks)**Junior Year:****Aviation (CTAG)****Subject Code: 177013****All Year****Credit Recommendation: 1.5**

In this first course, students apply knowledge of aviation theory and navigation to flight performance and planning. Students will apply principles of simple machines and fluid mechanics to aircraft operations. Identification of aircraft engines and airframe related systems will be emphasized. Weather theories and concepts are used to interpret weather-briefing documents. Additionally, students will distinguish among airport environments and understand rules, regulations and orders relevant to the airport industry.

Aviation Ground Maintenance (CTAG)**Subject Code: 177014****All Year****Credit Recommendation: 1.5**

Students will apply knowledge of aircraft ground handling safety procedures to aviation maintenance. Students will start, ground operate, service, and secure aircraft. Students will perform aircraft maintenance including detecting, identifying, removal, and treating of various types of corrosion found on ferrous and non-ferrous metals. In addition, students will identify methods of cleaning aircraft and aircraft components. The course content also focuses on developing communication, leadership, human relations and employability skills; and safe, efficient work practices.

Senior Year:**Aviation Airframe****Subject Code: 177015****All Year****Credit Recommendation: 1.5**

Students will inspect, repair, and refinish aircraft airframes and external components. Students will rig rotary and fixed-wing aircraft and evaluate and repair sheet metal and nonmetallic structures. Students will form, lay out, bend and join metal airframe components using welding processes, rivets and fasteners. Students will inspect, repair and assemble wooden, metal, aluminum, fiberglass and composite components. Students will inspect and repair external finishes including surface preparation and refinishing.

Aircraft Electrical Systems**Subject Code: 177016****All Year****Credit Recommendation: 1.5**

Students will learn the principles of avionics and practical application of AC/DC electrical circuits with an emphasis on airborne installations. Students will learn power calculations and the relationship of voltage, current, and resistance. Students will inspect, repair, and install instrument, communication and navigation systems. Additionally, students will evaluate and service airframe electrical systems including position, warning, hazard control, and ignition systems.

CareerX (Diamond, Laurel, Live and Scarlet Oaks)

One Year Program

Subject Code: 990371

All Year

Credit Recommendation: 3

CareerX is a career exploration and employability skills program for students with special needs. It is an entry-level transition high school program to assist students in making career choices. The curriculum will cover career exploration and employability skills. Each student will explore 5 career areas (processing/production, consumer/service, computer technology, construction/industrial, and business/marketing) through a series of activities and demonstrate industry appropriate employability skills. The outcome of this series of activities for each student will be to narrow their interests, skills and aptitudes in order to move to their next transitional step toward competitive employment. Students will also have the opportunity to learn real-world entry-level job skills in partnership with local businesses.

CareerX Related

Subject Code: 990371

All Year

Credit Recommendation: 1-2

This course supplements the CareerX Lab and the credits are determined based on the student needs.

CareerX English

Subject Code: 990371 or 050180

All Year

Credit Recommendation: 1

This English course is provided based on the student needs for graduation.

CareerX Math

Subject Code: 990371 or 110500

All Year

Credit Recommendation: 1

This Math course is provided based on the student needs for graduation.

CNC Advanced Manufacturing Technologies (Diamond and Live Oaks)

Junior Year:

Machining with Industrial Milling Machines

Subject Code: 176006

All Year

Credit Recommendation: 1.5

In this course, students are directed in the safe use of manual milling machines. Students apply their knowledge of product characteristics, perform necessary calculations, and use precision measuring instruments and layout equipment to mill products to print dimensions. Students will use these machine tools to shape, cut, drill and bore metal and other materials. Students will be able to identify operational problems and provide routine care and maintenance to the manual mill.

Machining with Industrial Lathes

Subject Code: 176005

All Year

Credit Recommendation: 1.5

This course directs the student in the safe use of different types of manual industrial lathes. Students will use these machine tools to shape, pattern, bore, thread and polish metal and other materials. Students will apply their knowledge of product characteristics, perform necessary calculations, use precision measuring instruments and make all adjustments needed to fabricate products to print dimensions. Students will be able to identify operational problems and provide routine care and maintenance to the lathe.

Senior Year:

Computer Numerical Control w/ Industrial Mills & Lathes

Subject Code: 176007

All Year

Credit Recommendation: 1.5

In this course, students will use computer numerical control (CNC) programming to mill products comprised of various materials. Students will prepare numerical control programs in positioning systems using standard industrial G and M codes. They will program computerized numerical control mills and lathes.

Machine Tools**Subject Code: 176004****All Year****Credit Recommendation: 1.5**

This course introduces students to all aspects of machining applications in manufacturing. They will be able to perform routine calculations, interpret basic drawings, begin the process of performing accurate measurements and plan simple machining processes. Students will learn the fundamental principles and practices of cutting, drilling and grinding using modern machine tools, hand tools and precision measuring instruments.

Commercial and Residential Electricity (Diamond and Scarlet Oaks)**Junior Year:****Construction Technology Core & Sustainable Construction****Subject Code: 178000****All Year****Credit Recommendation: 1.5**

Students will learn principles in basic safety (10-hr OSHA), construction math, hand and power tool care and operation, blueprint reading, material handling, communication and employability skills. An emphasis will be placed on safe and green construction practices.

Residential Electrical Systems**Subject Code: 178008****All Year****Credit Recommendation: 1.5**

This course will emphasize electrical theory, materials, equipment and general methods used in residential construction. Students will navigate the National Electrical Code, learn worksite safety and understand licensing and permitting requirements. They will interpret plans and job specifications and calculate loads and service requirements. Students will install, test and repair receptacle outlets, lighting and small appliance circuits. They will understand circuit protection concepts and install a subpanel. Specialty circuit installation will be addressed.

Senior Year:**Construction Electrical Systems****Subject Code: 178007****All Year****Credit Recommendation: 1.5**

This introductory electrical course will emphasize electrical theory, materials, and equipment. Students will explore the National Electrical Code and learn worksite safety. They will interpret schematics, construct basic circuits, and use test equipment and electrical hand and power tools.

Commercial and Industrial Construction Electrical Systems**Subject Code: 178009****All Year****Credit Recommendation: 1.5**

Students will plan and install electrical systems in commercial settings. Students learn worksite safety and understand permitting requirements. Students will interpret plans and job specifications and calculate loads and service requirements. Students will install, test and repair receptacle outlet, lighting and equipment circuits. They will understand circuit protection concepts and be able to install an entrance panel. Specialty commercial circuit installation will be addressed. Students will apply operating principles to the installation and troubleshooting of motors and controls.

Construction Framing and Finishing Technologies (Diamond and Scarlet Oaks)**Junior Year:****Construction Technology Core & Sustainable Construction****Subject Code: 178000****All Year****Credit Recommendation: 1.0**

Students will learn principles in basic safety (10-hr OSHA), construction math, hand and power tool care and operation, blueprint reading, material handling, communication and employability skills. An emphasis will be placed on safe and green construction practices.

Remodeling/Renovation**Subject Code: 178023****All Year****Credit Recommendation: 1.0**

Students will apply structural and mechanical skills to remodeling and renovations. In addition, students will learn the process of securing the required building permits, the management of subcontractors, and the coordination of formal building inspections. Students will troubleshoot design or logistics issues and provide possible solutions. Throughout the course, the safe handling of materials, personal safety, prevention of accidents and the mitigation of hazards are emphasized.

Principals of Wood Construction**Subject Code: 178030****All Year****Credit Recommendation: 1.0**

Students will engage in the introductory skills utilized in working with various wood construction materials. They will learn to use basic measuring tools, hand tools and machines, common to the wood industry, to construct basic projects. Additionally, students will examine various wood construction materials and their properties. Throughout the course, students will learn components of site and personal safety.

Senior Year:**Structural Systems****Subject Code: 178003****All Year****Credit Recommendation: 1.5**

Students will learn procedures and techniques required for layout and framing of walls and ceilings including roughing-in door and window openings, constructing corners and partitions, bracing walls and ceilings, and applying sheathing. Students will learn methods of roofing, cold formed steel, and wood stair framing. Students will learn site and personal safety, material properties, design procedures, and code requirements for structural systems.

Construction Pre-Apprenticeship/Capstone**Subject Code: 178029****All Year****Credit Recommendation: 1.5**

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in construction programs in a more comprehensive and authentic way. Capstones often include project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course is delivered through a variety of delivery methods including cooperative education or apprenticeship.

Construction Technologies (Laurel Oaks)**Junior Year:****Construction Technology Core & Sustainable Construction****Subject Code: 178000****All Year****Credit Recommendation: 1.5**

Students will learn principles in basic safety (10-hr OSHA), construction math, hand and power tool care and operation, blueprint reading, material handling, communication and employability skills. An emphasis will be placed on safe and green construction practices.

Structural Systems**Subject Code: 178003****All Year****Credit Recommendation: 1.5**

Students will learn procedures and techniques required for layout and framing of walls and ceilings, including roughing-in door and window openings, constructing corners and partitions, bracing walls and ceilings, and applying sheathing. Students will learn methods of roofing, cold formed steel, and wood stair framing. Students will learn site and personal safety, material properties, design procedures, and code requirements for structural systems.

Senior Year:**Structural Coverings and Finishes****Subject Code: 178004****All Year****Credit Recommendation: 1.5**

This course will address applications of interior and exterior finish work. Students will identify material properties and select for appropriate application. Students will install thermal and moisture protection including roofing, siding, fascia and soffits, gutters, and louvers. Students will install drywall, trim-joinery and molding and apply wall, floor and ceiling coverings and finishes. Throughout the course, the safe handling of materials, personal safety, prevention of accidents and the mitigation of hazards are emphasized.

Principals of Wood Construction**Subject Code: 178030****All Year****Credit Recommendation: 1.5**

Students will engage in introductory skills utilized in working with various wood construction materials. They will learn to use basic measuring tools, hand tools and machines, common to the wood industry, to construct basic projects. Additionally, students will examine various wood construction materials and their properties. Throughout the course, students will learn components of site and personal safety.

Cosmetology (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Microbiology and Infection Control****Subject Code: 174115****All Year****Credit Recommendation: 1.5**

Students will learn basic bacteriology, infection control, and salon safety practices. Students will be able to recognize infectious disorders and contagious diseases and learn the dispensary requirements, product storage, and requirements of the laws and rules which regulate the cosmetology industry in Ohio.

Hand & Foot Treatment Fundamentals and Enhancements**Subject Code: 174145****All Year****Credit Recommendation: 1.5**

Students will learn the knowledge and skills to perform both manicures and pedicures. They will learn how to maintain personal hygiene and infection control. Students will give plain/oil manicures, pedicures, and hand/arm and foot/leg massages. Enhanced hand and foot treatments using specialized products and techniques will be performed.

Senior Year:**Fundamentals of Hair Cutting and Styling****Subject Code: 174125****All Year****Credit Recommendation: 1.5**

Students will learn basic shampooing, conditioning and haircutting including trimming, wet styling and thermal styling techniques when working with natural and synthetic hair. Students will also learn infection control and safety along with the science of ergonomics.

Skin Care Fundamentals and Enhancements**Subject Code: 174150****All Year****Credit Recommendation: 1.5**

Students will apply the principles of anatomy, skin analysis, infection control and safety to safe hair removal, skincare treatments, and facial massage. Students will use electrical and manipulative facial treatments including masks, packs, make-up techniques. Students will also learn advanced skin care treatments, targeted massage, and enhancement applications using specialized products and techniques.

Culinary Arts and Hospitality Services (Diamond, Live and Scarlet Oaks)

Junior Year:

Hospitality Fundamentals (CTAG)

Subject Code: 330000

Semester 1 Credit Recommendation: 1.5

This first course in the career field will introduce students to culinary arts, foodservice operations, lodging, travel and tourism. Students will obtain knowledge of customer service principles and examine the impact of cultural, historical, social and technological developments on key segments of the industry. They will also apply safety and sanitation techniques to prevent and control injuries, illnesses and diseases in the workplace. Business law, employability skills, leadership and communications will be addressed.

Fundamentals of Food Production (CTAG)

Subject Code: 330100

Semester 2 Credit Recommendation: 1.5

Students will prepare food products and beverages according to standardized recipes. They will apply plating and presentation principles to deliver attractive menu items, establish food specifications and prep lists, and develop ingredient and portion control guides. Safety and sanitation, standard knife skills, and culinary math will be emphasized. Employability skills, leadership and communications will also be incorporated.

Senior Year:

Contemporary Cuisine

Subject Code: 330105

Semester 1 Credit Recommendation: 1.5

Students will prepare regional and international food products and beverages according to standardized recipes. They will research and develop marketable new recipes, plan and design menus, and calculate food requirements and costs. Selection, use, maintenance and storage of commercial equipment, machines, tools and tableware will be emphasized. Food science, inventory management, food presentation, and safety and sanitation will also be addressed.

Baking and Pastry Arts (Diamond and Scarlet)

Subject Code: 330125

Semester 2 Credit Recommendation: 1.5

Students will apply food science principles to prepare and bake breads, desserts and pastries. They will also use specialized decorating and presentation techniques to decorate cakes, cookies, pastries, and other baked goods. Students will select quality ingredients, determine food costs, and research and develop marketable new recipes and food concepts. Personal safety, food safety, and equipment safety will be emphasized.

Catering & Banquet Service Operations (Live Only)

Subject Code: 33025

Semester 2 Credit Recommendation: 1.5

Students will design and manage catering and banquet operations. They will recommend types of food functions and food-and-beverage services to clients, create menus for special occasions and events, and determine financial requirements. Students will hire, train, and supervise staff; manage event logistics, operations and service providers; and oversee dining room operations. Customer service; food, equipment and site safety; and high-volume food production will also be addressed.

Dental Assisting (Laurel and Scarlet Oaks)

Junior Year:

Oral Diagnosis and Treatment Planning

Subject Code: 072080

All Year Credit Recommendation: 1

Students gain knowledge of head and neck anatomy with a focus on the oral cavity and teeth. They will study bone structure, cosmetic dentistry, and tooth identification and numbering systems. Students gain knowledge of chemical and physical properties of dental materials, their indications for use, and proper manipulation of the materials. Students perform radiographs, impressions, pouring, trimming, and wax bites methods and techniques. Additionally, students educate the patient on dental procedures and comprehensive dental care.

Dental Technology**Subject Code: 072075****All Year****Credit Recommendation: 1**

Students will demonstrate knowledge and skills associated with the practice of dentistry. Topics include principles of dental procedures and comprehensive dental care, infection control in dentistry, and dental specialties including radiology and laboratory procedures. Students will perform chairside assisting techniques including instrument sterilization, fluoride applications, dietary analysis, and assisting physician. Emphasis is given to terminology, instruments and equipment, and patient communication. Additionally, students maintain accounts and inventory, records and appointments.

Medical and Dental Office Technology**Subject Code: 072155****All Year****Credit Recommendation: 1**

Students will apply fundamental principles of communication, leadership, technology and management as they apply to the medical office setting. Students will demonstrate documentation and record keeping procedures set forth by national accrediting organizations.

Senior Year:**Dental Radiography****Subject Code: 072076****All Year****Credit Recommendation: 1.5**

Students will perform procedures to expose, process, and interpret dental radiographs. Students will apply knowledge of radiation physics, infection prevention and quality control standards that are appropriate to the clinical setting. Students will apply effective communication skills for interacting with diverse patient populations and proper procedure documentation according to business and industry standards.

Health Science Capstone**Subject Code: 072105****All Year****Credit Recommendation: 1.5**

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Health Sciences courses in a more comprehensive and authentic way. Capstones often include project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

Digital Arts and Design (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Digital Image Editing (CTAG)****Subject Code: 340120****All Year****Credit Recommendation: 1.5**

This course focuses on manipulating images for final output through print and web-based production. Students obtain a brief perspective on analog image editing and delve into the world of editing digital photos, illustrations and other artwork. They learn to adjust resolution and exposure, modify color, compress data and format and manage files. Students will use problem-solving strategies and work collaboratively to complete the creative process with artists, printers and web developers.

Visual Creation (CTAG)**Subject Code: 340315****All Year****Credit Recommendation: 1.5**

A keen eye for detail, art elements, design principles and styles of art are essential to the world of visual communications. Students learn proper composition with such principles as color theory, typography and drawing. They create designs targeted for the Internet and for two- or three-dimensional products while adhering to copyright laws and deadlines.

Senior Year:**Digital Print Design (CTAG)****Subject Code: 340320****All Year****Credit Recommendation: 1**

Starting with understanding target audiences, demographics, product shelf life and sustainability students create designs for two- or three-dimensional products. Using workflow processes, they lay out newsletters, posters, business cards and other products. They create logo and package designs for corporate branding, marketing and advertising. Critical thinking is engaged in multiple-level critiques.

Video Production (CTAG)**Subject Code: 340145****All Year****Credit Recommendation: 1**

This course focuses on video production for commercial use. Students plan and coordinate work with clients to produce projects on a tight timeline. They learn how to read and interpret a script, select and maintain equipment and combine graphics, text and special effects. Skills attained include pre-production documentation and planning; in-production audio and video recording; and post-production editing and distribution.

Arts and Communication Capstone**Subject Code: 340009****All Year****Credit Recommendation: 1**

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in the Information Technology program in a more comprehensive and authentic way. Capstones often include project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

Early Childhood Education (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Health, Safety and Nutrition (CTAG)****Subject Code: 350230****All Year****Credit Recommendation: 1.5**

Students will establish and maintain a physically and emotionally safe and healthful environment for young children. They will learn skills in first aid and CPR, identify signs and symptoms of common health issues and diseases, and develop meal and snack menus appropriate for young children of different ages and stages of development. The effects of nutrients on children's growth and development will also be emphasized.

Curriculum and Instruction for Early Childhood Education**Subject Code: 350235****All Year****Credit Recommendation: 1.5**

Students will develop age-appropriate learning experiences and curriculum to engage young children. They will determine curricular goals, create lesson plans, and employ observation and assessment strategies to evaluate children's growth and development. Application of foundational principles of reading, writing, speaking, and listening skills to enhance the learner's application of literacy will be emphasized.

Senior Year:**Early Childhood Education Observation & Assessment****All Year****Credit Recommendation: 1.5****Subject Code: 350220**

Students will formally and informally observe young children to determine learners' growth, personalities and required interventions. They will analyze children's behavior, record and categorize learner progress, and use observation to diagnose problems. The role of assessment data in developing suitable teaching responses and strategies will be examined.

Early Childhood Education Principles (CTAG)**Subject Code: 350205****All Year****Credit Recommendation: 1.5**

Students will examine the history and philosophy of early childhood education, types of early childhood programs, and the roles, rights and responsibilities of learners and stakeholders in early childhood education. Students will assess developmentally appropriate practices; legal, ethical and organizational issues; and the challenge of teaching and caring for young children with diverse needs. Career planning and professionalism will also be emphasized throughout the course.

***Early Childhood Education- College Credit Plus-Cincinnati State Technical and Community College**

The following courses are available to Early Childhood Education seniors with 90% attendance junior and senior year, who have an overall B average in all Early Childhood Education courses and who meet the academic requirements set by Cincinnati State Technical and Community College.

ECE 155 (Early Childhood Education)*Health, Safety, and Nutrition in Childhood***3 Semester Hours-Cincinnati State***Subject Code: 350230***ECE 160 (Early Childhood Education)***Assessment and Observation in Early Childhood Education***2 Semester Hours-Cincinnati State***Subject Code: 350220***Engineering Technologies and Robotics (Scarlet Oaks)****Junior Year:****Engineering Design (CTAG)****Subject Code: 175001****All Year****Credit Recommendation: 1.5**

The focus of Engineering Design is the application of the engineering design process. Topics include work-processes, optimization methods, design optimization, and risk management tools. Students will use 2D and 3D modeling software to help them design solutions to solve proposed problems, document their work, and communicate solutions. Additionally, students will interpret industry prints, and create working drawings from functional models. Emphasis is given to experimental problem solving in real systems.

DC Electronic Circuits**Subject Code: 175105****All Year****Credit Recommendation: 1.5**

Students will learn the fundamental principles of electricity with emphasis on DC (direct current) circuits. They will use concepts of Ohm's Law, the Power Formula and Kirchhoff's Law with series, parallel and series-parallel circuit applications. The relationship between electricity and magnetism and motor theory will also be introduced. The student will use and maintain digital multimeters and oscilloscopes.

Senior Year:**Engineering Principles****Subject Code: 175002****All Year****Credit Recommendation: 1.5**

Students will learn fundamental engineering concepts and scientific principles associated with engineering design applications. Topics include mechanisms, energy, statics, materials, and kinematics. Additionally, students will learn material properties and electrical, control and fluid power systems. Students will learn to apply problem solving, research and design skills to create solutions to engineering challenges.

Industrial Robotics (CTAG)**Subject Code: 176025****All Year****Credit Recommendation: 1.5**

Students will apply the knowledge and skills to program, safely operate, and troubleshoot industrial Robots. The students will learn industrial robotic operations and system configurations. Throughout the course, students will code, compile, and debug programs using industrial robotic programming language.

Equine Science and Management (Diamond and Laurel Oaks)

Junior Year:

Equine Selection, Nutrition and Management

Subject Code: 010935

All Year

Credit Recommendation: 1.5

Students will identify and apply responsible animal science principles and management practices to equine populations. Topics will include equine nutrition, selection, reproduction and facility design and management. They will apply knowledge of equine science to enhance animal growth, enrichment and training, along with providing educational and visitor engagement programs. Throughout the course, students will develop management plans that reflect the classification of animals and follow best practices for care and legal compliance.

Animal Health

Subject Code: 010915

All Year

Credit Recommendation: 1.5

Students will examine causes, symptoms, and treatment of common diseases with emphasis on developing preventative health management plans. Topics will include the study of pathogens and classifying types of diseases and disorders. Students will perform animal health assessments and compare to standard characteristics. Throughout the course, students will utilize principles of technology to manage information systems and research issues affecting the industry.

Senior Year:

Business Mgt. for Agricultural & Environmental Systems (CTAG)

Subject Code: 010115

All Year

Credit Recommendation: 1.5

Students will examine elements of business, identify organizational structures and apply management skills while developing business plans, financial reports and strategic goals for new ventures or existing businesses. Learners will use marketing concepts to evaluate the marketing environment and develop a marketing plan with marketing channels, product approaches, promotion and pricing strategies. Throughout the course, students will apply concepts of ethics and professionalism while implications of business regulations will be identified.

Animal Science and Technology (CTAG)

Subject Code: 010910

All Year

Credit Recommendation: 1.5

Students will learn and apply responsible animal management principles and routine husbandry practices. Topics will include nutrition, feeding, and caring for animals, body/carcass composition evaluation, and applying marketing principles to the sale and distribution of animal products. Learners will investigate animal genetics and how it impacts principles of animal improvement, selection and marketing. Throughout the course, learners will develop business leadership, problem-solving and communication skills in relation to the science of animals.

Exercise Science and Sports Medicine (Diamond, Laurel, Live and Scarlet Oaks)

Junior Year:

Health Science and Technology

Subject Code: 072001

All Year

Credit Recommendation: 1

This first course in the career field provides students an overview of the opportunities available in the healthcare industry. Students will learn fundamental skills in effective and safe patient care that can be applied across a person's lifespan. They will also be introduced to exercise science and sports medicine, the field of biomedical research and the importance of managing health information.

Exercise and Athletic Training (CTAG)**Subject Code: 072000****All Year****Credit Recommendation: 1**

In this course, students will apply procedures and techniques used in athletic training and in the care and rehabilitation of athletic injuries and therapeutic exercise. Topics include injury prevention, conditioning, and wound care techniques of the musculoskeletal system. Students will learn techniques in the analysis of mechanical factors related to human movement. In addition, current trends, technology, legal considerations, and the role of exercise science in relationship to other health fields will be emphasized.

Athletic Injuries and Prevention**Subject Code: 072025****All Year****Credit Recommendation: 1**

Students will identify signs and symptoms of injury and apply emergency procedures and techniques used in the immediate care of athletic-related trauma. Students will learn clinical and field evaluative processes, injury prevention techniques, conditioning techniques, treatment, taping, bracing, and rehabilitation of musculoskeletal injuries and conditions. Students will design and implement conditioning programs including nutritional considerations and ergogenic aids. Emphasis is placed on the synthesis of information gathered through injury history, observation, and manual muscle testing.

Senior Year:**Fitness Evaluation and Assessment (CTAG)****Subject Code: 072020****All Year****Credit Recommendation: 1.5**

Students will complete comprehensive fitness evaluations and develop individualized training programs. Students will administer lab and field tests of cardiovascular endurance, body composition, joint flexibility and muscular strength, power, and endurance. Emphasis is placed on assessing body composition, neuromuscular flexibility, agility, balance, coordination, and proprioception. Additionally, students will identify components of physical fitness and communicate how physical activity impact health and wellness.

Nutrition and Wellness**Subject Code: 072015****All Year****Credit Recommendation: 1.5**

Students will increase their knowledge of comprehensive health and wellness. Students will be able to identify the components of fitness and communicate the relationship between physical fitness, physical performance, injury prevention, and nutritional intake. Students will evaluate an individual's state of nutrition based upon the impact of personal choices and social, scientific, psychological and environmental influences. Further, students will calculate an individual's kilocalorie burn rate and recommend an ideal diet and physical fitness plan.

Firefighting/Emergency Medical Service (Scarlet Oaks)**Junior Year:****Foundations of Firefighting and Emergency Medical Services****Subject Code: 170342****All Year****Credit Recommendation: 1**

This course introduces students to the foundational concepts of firefighting safety and emergency medical services. Students will analyze and practice skills outlined in the Ohio Department of Public Safety Fire Protection and Ohio Emergency Medical Services rules and regulations in preparation for Firefighter I&II curriculum and EMT licensure.

Homeland Security Protecting America's Critical Infrastructure**Subject Code: 170916****All Year****Credit Recommendation: 1**

In this course, students will learn techniques to secure and protect America's people and infrastructure from natural and manmade disaster. Students will look at a range of issues including cyber security, intelligence gathering, and local emergency planning that can be applied in their own community. Students will also learn to manage critical incidents through training in National Incident Management and the Incident Command System. Student will complete multiple FEMA certifications in this course.

Firefighter I (CTAG)**Subject Code: 170343****All Year****Credit Recommendation: 1**

This course prepares students for a career in the fire service. Students learn the history of firefighting, ground operations, fire science, fire suppression, and use of protective equipment, rescue equipment, tools and appliances. Students will apply knowledge by training with fire equipment and live fire exercises, and practicing a variety of rescue situations. Students who successfully complete this course at a chartered institution (Great Oaks) will be eligible to take the Ohio Firefighter I certification test.

Senior Year:**Emergency Medical Technician (CTAG)****Subject Code: 170345****All Year****Credit Recommendation: 1.5**

Emergency Medical Technicians are first responders who provide basic medical care to sick and injured people. In this course, students will learn the knowledge and skills necessary to provide lifesaving first aid. Students will assess, diagnose, and treat a variety of illnesses and injuries in the process of providing pre-hospital care. Students who successfully complete this course at a chartered institution (Great Oaks) will be eligible to take the National Registry Exam for Ohio EMT certification.

Firefighter II (CTAG)**Subject Code: 170344****All Year****Credit Recommendation: 1.5**

This course builds on the knowledge and skills learned in Firefighter I. Students will apply knowledge and skills to advanced training in fire suppression, fire science, rescue, equipment, tools, appliances, and hazardous materials operations. Students who have completed Firefighter I and successfully complete this course will be eligible to take the Ohio Firefighter II certification test.

Health Technology – (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Medical Terminology (CTAG)****Subject Code: 072150****All Year****Credit Recommendation: 1**

This course focuses on the applications of the rules for constructing and defining medical terms with an emphasis on building a working medical vocabulary. Topics include using the appropriate abbreviations and symbols for anatomical, physiological and pathological classifications and the associated medical specialties and procedures. Students will decipher medical terms by identifying and using word elements with an emphasis on derivation, meaning, and pronunciation. Further, students will interpret and translate medical records and documents.

Health Science and Technology**Subject Code: 072001****All Year****Credit Recommendation: 1**

This first course in the career field provides students an overview of the opportunities available in the healthcare industry. Students will learn fundamental skills in effective and safe patient care that can be applied across a person's lifespan. They will also be introduced to exercise science and sports medicine, the field of biomedical research and the importance of managing health information.

Patient Centered Care**Subject Code: 072050****All Year****Credit Recommendation: 1**

Students will apply psychomotor nursing skills needed to assist individuals in meeting basic human needs. Students will implement interventions following a nursing assistant plan of care. Students will collect patient's vital signs including temperature, pulse rate, respiration rate, and blood pressure. Students will perform phlebotomy procedures with emphasis on infection prevention, universal precautions, proper patient identification, specimen acquisition, handling, and processing. Additionally, students will observe patients' physical, mental, and emotional conditions and document any change.

Senior Year:**Patient Centered Care and Diagnostics****Subject Code: 072055****Semester 1****Credit Recommendation: 1.5**

In this course, students establish and implement treatment plans while providing primary nursing care. Topics include pharmacology, phlebotomy, mental health nursing and acute care nursing. Students use diagnostic techniques to develop patient health assessments. Emphasis is placed on the synthesis of information gathered through health history, observation, and the detection of deviations and variations from normal physical characteristics. In addition, students learn the legal and ethical principles needed to function within the scope of practice.

Health Science Capstone**Subject Code: 072105****Semester 2****Credit Recommendation: 1.5**

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Health Sciences courses in a more comprehensive and authentic way. Capstones often include project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

Heating, Ventilating and Air Conditioning (Diamond and Live Oaks)**Junior Year:****Construction Technology Core & Sustainable Construction****Subject Code: 178000****All Year****Credit Recommendation: 1.5**

Students will learn principles in basic safety (10-hr OSHA), construction math, hand and power tool care and operation, blueprint reading, material handling, communication and employability skills. An emphasis will be placed on safe and green construction practices.

Mechanical, Electrical and Plumbing Systems**Subject Code: 178002****All Year****Credit Recommendation: 1.5**

Students learn physical principles and fundamental skills across mechanical systems in construction. Students will select materials and assemble and test basic electrical circuits. Students will select materials and assemble simple copper and plastic plumbing applications for both supply and drains. They will perform simple maintenance of electric motors, electric fixtures and plumbing fixtures. Students will be able to select and install basic ductwork components and learn the operation and maintenance of heating and cooling equipment.

Senior Year:**Heating and Cooling Systems****Subject Code: 178012****All Year****Credit Recommendation: 1.5**

Students will apply principles of heating and cooling to the installation, troubleshooting and maintenance of residential and commercial heating, ventilation, and air conditioning/refrigeration (HVAC/R) systems.

HVAC Refrigeration**Subject Code: 178013****All Year****Credit Recommendation: 1.5**

Students will install, troubleshoot and service residential and commercial refrigeration systems. Students will learn laws of thermodynamics, pressure and temperature relationships, the refrigeration cycle, and refrigerant management. Students will address hydronic systems, chilled water systems, package units, and cooling towers.

Heavy Equipment Operations and Engineering (Laurel and Live Oaks)

Junior Year:

Construction Technology Core & Sustainable Construction

Subject Code: 178000

All Year

Credit Recommendation: 1.5

Students will learn principles in basic safety (10-hr OSHA), construction math, hand and power tool care and operation, blueprint reading, material handling, communication and employability skills. An emphasis will be placed on safe and green construction practices.

Heavy Equipment Operations

Subject Code: 178026

All Year

Credit Recommendation: 1.5

Students will perform heavy equipment operating techniques and perform operator level maintenance. Students will learn to survey using lasers, transits and machine control systems. Additionally, students will learn the techniques and processes for clearing, grubbing, stripping, excavating, backfilling, stockpiling, and cutting and spreading of fill material. Throughout the course, safety is emphasized.

Senior Year:

Construction Site Preparation

Subject Code: 178027

All Year

Credit Recommendation: 1.5

Students will use surveying, topographic, satellite positioning, and geomatics instruments to locate and prepare a site for construction. Students will establish lot and building lines as well as grade levels and use site plans and elevation drawings to determine excavation needs. Students will locate and mark underground and overhead services, identify soil conditions that may require shoring and position batter boards. Additionally, students will identify the parameters for site selection and zoning regulations and the process for filing building permits.

Plan Reading (CTAG)

Subject Code: 178019

All Year

Credit Recommendation: 1.5

Students will learn blueprint reading as it relates to architecture and construction. Students will use scaling, orthographic projections, dimensioning practices, symbols, notations, and abbreviations to perform area calculations and to interpret floor plan, section, and elevations. Using construction plans, students will identify problems or shortcomings related to the layout and installation of materials for the project.

Industrial Diesel Mechanics (Laurel and Scarlet Oaks)

Junior Year:

Truck Diesel Engines

Subject Code: 177007

All Year

Credit Recommendation: 1.5

Students will inspect, diagnose, and repair diesel truck engines. Students will learn the principles of valve train assemblies, lubrication, intake, exhaust and fuel systems. Additionally, skill development in engine testing, inspection and repair of electronic fuel management systems are emphasized. Students will break down and assemble heavy truck engines and supporting systems.

Truck Braking, Suspension, and Steering Systems

Subject Code: 177005

All Year

Credit Recommendation: 1.5

Students will perform inspections, troubleshoot malfunctions, and service truck undercarriage systems. Students will identify poor-performing air brake systems and replace malfunctioning components. Students will install leaf springs, shock absorbers and air suspension components. Students will inspect and replace truck steering components and replace wheel bearings. Additionally, students will perform wheel alignment and tire inspections, diagnostics, and repair. Identifying workplace risk factors associated with repetitive motion and lifting, operating, and moving of a heavy object is emphasized.

Senior Year:**Ground Transportation Electrical/Electronic****Subject Code: 177002****All Year****Credit Recommendation: 1.5**

Student will diagnose and repair vehicle electrical systems including chassis electrical, charging, starting and lighting systems. Students will learn the fundamentals of direct current (DC) electronics including series, parallel, and series parallel circuits. Students will use electronic diagnostic tools, read schematics, and utilize printed and electronic repair manuals to troubleshoot electrical circuits, test components and replace defective modules.

Ground Transportation Maintenance (CTAG)**Subject Code: 177000****All Year****Credit Recommendation: 1.5**

In this course, students will apply skills needed to inspect and perform general service on vehicles. Students will research applicable service information and technical service bulletins, and perform maintenance on vehicles. Students will inspect and service engine, drive train, suspension, steering, electrical and braking systems. Students will perform ignition maintenance including spark plug/glow plug and ignition wire and coil pack replacement. Additionally, students change fluids and filters and inspect vehicles for leaks and fluid condition.

IT Systems and Cybersecurity (Live and Laurel Oaks)**Junior Year:****Information Technology****Subject Code: 145005****All Year****Credit Recommendation: 1.5**

This first course in the IT career field is designed to provide students with a working knowledge of computer concepts and essential skills necessary for work and communication in today's society. Students will learn safety, security, and ethical issues in computing and social networking. Students will also learn about input/output systems, computer hardware and operating systems, and office applications.

Computer Software (CTAG)**Subject Code: 145030****All Year****Credit Recommendation: 1.5**

Students will apply knowledge and skills of commercial and open source operating systems in portable, stand alone, and networked devices. Students will install a variety of operating systems manually and using remote assistance. They will learn to configure, modify, and troubleshoot operating systems. Desktop virtualization, system security, and operating system history will be addressed.

Senior Year:**Networking****Subject Code: 145035****All Year****Credit Recommendation: 1**

Students will install, configure, and troubleshoot network hardware and peripherals. Students will learn networking by exploring the OSI model, network topologies, and cabling. Students will design simple networks, know how to select physical devices, and be able to configure the equipment. Knowledge and skills relating to the operation and usage of network protocols will be developed.

Cybersecurity (CTAG)**Subject Code: 146005****All Year****Credit Recommendation: 1**

Students will learn the components of cybersecurity and the role each plays in preventing, detecting and mitigating vulnerabilities and attacks. Components include the security of the network infrastructure, security of the systems, and the prevention, detection, and mitigation of common vulnerabilities and attacks. Throughout this course, students will examine and implement security safeguards for desktop, network, and application security.

Computer Hardware (CTAG)**Subject Code: 145025****All Year****Credit Recommendation: 1**

Students will learn to install, repair, and troubleshoot computer hardware systems. They will perform preventative maintenance practices and learn techniques for maintaining computer hardware security. Communication skills and professionalism in troubleshooting situations will be emphasized.

Law Enforcement (Scarlet Oaks)**Junior Year:****The American Criminal Justice System (CTAG)****Subject Code: 170911****All Year****Credit Recommendation: 1**

This first course in the Criminal Justice pathway traces the history, organization, and functions of local, state, and federal law enforcement. Students will study criminal behavior and apply constitutional and criminal law to crime and punishment. Students will learn law enforcement terminology, classifications and elements of crime, and how various court systems are used to judge and punish offenders.

Investigations and Forensics in Criminal Investigations**Subject Code: 170914****All Year****Credit Recommendation: 1**

Forensic science uses a structured and scientific approach to the investigation of crimes including assault, abuse and neglect, domestic violence, accidental death and homicide. Students will learn the psychology of criminal behavior and apply it to investigative procedures. Students will collect and analyze evidence through case studies and simulated crime scenes such as fingerprint analysis, ballistics, and blood spatter analysis.

Police Work and Practice in Public Safety (CTAG)**Subject Code: 170913****All Year****Credit Recommendation: 1**

In this course, students will learn the skills necessary to prevent, detect and react to crime. Students will learn self-defense and subject control techniques, methods to conduct patrols, surveillance, and traffic procedures. Students will understand the ethical and legal responsibilities of police officers on patrol. Additionally, students will learn the operations of police and emergency telecommunication systems.

Senior Year:**Security and Protective Services****Subject Code: 170912****All Year****Credit Recommendation: 1.5**

Private security is an ever-expanding industry that requires trained professionals that can detect, deter, and investigate crime. The course focuses on private security measures used to protect lives, property, and proprietary information. Students completing the Ohio Peace Officer Training Academy Private Security curriculum provided by an approved instructor will be eligible to sit for the OPOTA certification exam as a private security guard.

The Correctional System and Services (CTAG)**Subject Code: 170915****All Year****Credit Recommendation: 1.5**

The correctional officer plays a critical role in the criminal justice system. In this course students will learn institutional rehabilitation and community corrections strategies that prepare them for work in a correctional setting. The student will learn the role and responsibilities of a correctional officer including processing inmates, maintaining security in a correctional setting, and understanding inmate mental health needs.

Secondary Practical Nursing (Scarlet Oaks)

Junior Year:

Patient Centered Care

Subject Code: 072050

Semester 1

Credit Recommendation: 1.5

Students will apply psychomotor nursing skills needed to assist individuals in meeting basic human needs. Students will implement interventions following a nursing assistant plan of care. Students will collect patient's vital signs including temperature, pulse rate, respiration rate, and blood pressure. Students will perform phlebotomy procedures with emphasis on infection prevention, universal precautions, proper patient identification, specimen acquisition, handling, and processing. Additionally, students will observe patients' physical, mental, and emotional conditions and document any change.

Medical Terminology (CTAG)

Subject Code: 072150

Semester 2

Credit Recommendation: 1.5

This course focuses on the applications of the rules for constructing and defining medical terms with an emphasis on building a working medical vocabulary. Topics include using the appropriate abbreviations and symbols for anatomical, physiological and pathological classifications and the associated medical specialties and procedures. Students will decipher medical terms by identifying and using word elements with an emphasis on derivation, meaning, and pronunciation. Further, students will interpret and translate medical records and documents.

Senior Year:

Patient Centered Care and Diagnostics

Subject Code: 072055

Semester 1

Credit Recommendation: 2.5

In this course, students will establish and implement treatment plans while providing primary nursing care. Topics include pharmacology, phlebotomy, mental health nursing and acute care nursing. Students will use diagnostic techniques to develop patient health assessments. Emphasis is placed on the synthesis of information gathered through health history, observation, and the detection of deviations and variations from normal physical characteristics. In addition, students will learn the legal and ethical principles needed to function within the scope of practice.

Lifespan Development and Medical Intervention (CTAG)

Subject Code: 072060

Semester 2

Credit Recommendation: 2.5

Students will gain necessary skills and knowledge to meet the needs of individuals from infancy through the human life cycle in a safe, legal, and ethical manner using the nursing process. Topics include physical, psychological, and cultural variations associated with maturing and aging. Emphasis will be placed on regulatory compliance, patient assessment, patient safety, and medical interventions. Additionally, students will use psychomotor nursing skills to assist in day-to-day patient care activities.

Surgical Technology (Diamond and Scarlet Oaks)

Junior Year:

Medical Terminology (CTAG)

Subject Code: 072150

All Year

Credit Recommendation: 1

This course focuses on the applications of the rules for constructing and defining medical terms with an emphasis on building a working medical vocabulary. Topics include using the appropriate abbreviations and symbols for anatomical, physiological and pathological classifications and the associated medical specialties and procedures. Students will decipher medical terms by identifying and using word elements with an emphasis on derivation, meaning, and pronunciation. Further, students will interpret and translate medical records and documents.

Health Science and Technology**Subject Code: 072001****All Year****Credit Recommendation: 1**

This first course in the career field provides students an overview of the opportunities available in the healthcare industry. Students will learn fundamental skills in effective and safe patient care that can be applied across a person's lifespan. They will also be introduced to exercise science and sports medicine, the field of biomedical research and the importance of managing health information.

Lifespan Development and Medical Intervention**Subject Code: 072060****All Year****Credit Recommendation: 1**

Students gain necessary skills and knowledge to meet the needs of individuals from infancy through the human life cycle in a safe, legal, and ethical manner using the nursing process. Topics include physical, psychological, and cultural variations associated with maturing and aging. Emphasis will be placed on regulatory compliance, patient assessment, patient safety, and medical interventions. Additionally, students use psychomotor nursing skills to assist in day-to-day patient care activities.

Senior Year:**Surgical Support****Subject Code: 072070****Semester 1****Credit Recommendation: 1.5**

Students will demonstrate knowledge and skill necessary to carry out delegated tasks associated with the safe and efficient operating room support functions and related procedures. Topics include surgical technology theory, patient care concepts, and sterilization techniques. Student will assist with the passing of instruments and the positioning of patients. Additionally, students will prepare patients for transport to and from surgery, maintain equipment and supplies, and prepare the operating room for surgery.

Health Science Capstone**Subject Code: 072105****Semester 2****Credit Recommendation: 1.5**

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in Health Sciences courses in a more comprehensive and authentic way. Capstones often include project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through community partnerships, students may combine classroom learning with work experience. This course can be delivered through a variety of delivery methods including cooperative education or apprenticeship.

Veterinary Assisting (Diamond, Live, and Scarlet Oaks)**Junior Year:****Animal Health****Subject Code: 010915****All Year****Credit Recommendation: 1.5**

Students will examine causes, symptoms, and treatment of common diseases with emphasis on developing preventative health management plans. Topics will include the study of pathogens and classifying types of diseases and disorders. Students will perform animal health assessments and compare to standard characteristics. Throughout the course, students will utilize principles of technology to manage information systems and research issues affecting the industry.

Animal Anatomy and Physiology**Subject Code: 010945****All Year****Credit Recommendation: 1.5**

Students will examine the structure and function of the major organ systems as well as the function and principle of blood flow in animals. Students will study internal and external anatomical parts and their functions and investigate the relationship among these parts and systems within the body of the animal. Throughout the course, students will apply the internal functions of anatomical structures to the business and industry principles of the animal industry.

Senior Year:**Business Mgmt. for Agricultural & Environmental Systems (CTAG)****Subject Code: 010115****All Year****Credit Recommendation: 1.5**

Students will examine elements of business, identify organizational structures and apply management skills while developing business plans, financial reports and strategic goals for new ventures or existing businesses. Learners will use marketing concepts to evaluate the marketing environment and develop a marketing plan with marketing channels, product approaches, promotion and pricing strategies. Throughout the course, students will apply concepts of ethics and professionalism while implications of business regulations will be identified.

Veterinary Science**Subject Code: 010930****All Year****Credit Recommendation: 1.5**

Students will learn causes, symptoms, and treatment of common diseases with special emphasis on developing preventative health management plans and breeding programs. Topics include veterinary pharmacology, radiology and imaging techniques, principles of surgery, safe laboratory skills, and the concepts of ethics and professionalism in the work place. Students will develop skills in inquiry and statistical methods. Throughout the course, learners will utilize principles of technology to manage information systems and research issues affecting the industry.

Web Applications and Game Development (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Web Design (CTAG)****Subject Code: 145010****All Year****Credit Recommendation: 1**

Students will learn the dynamics of the web environment while pursuing an in-depth study of both Hypertext Markup Language (HTML) and Cascading Style Sheets (CSS). Web based protocols such as FTP, TCP/IP, and HTTP will be addressed. Students will create a website with tag text elements, special characters, lines, graphics, hypertext links, and graphical tables.

Programming (CTAG)**Subject Code: 145060****All Year****Credit Recommendation: 1**

In this course, students will learn the basics of building simple interactive applications. Students will learn the basic units of logic: sequence, selection, and loop. Students will apply algorithmic solutions to problem-domain scenarios. Students will gain experience in using commercial and open source languages, programs, and applications.

Visual Programming (CTAG)**Subject Code: 145070****All Year****Credit Recommendation: 1**

Students will create event-driven programs using object-oriented programming techniques for use in web based and standalone applications. Students will map out, design, and test computer applications, web applications, and mobile applications. Both commercial and open source programs and applications will be used.

Senior Year:**Object Oriented Programming (CTAG)****Subject Code: 145065****All Year****Credit Recommendation: 1.5**

Students will learn to represent programming concepts as "objects" that have data fields and associated procedures known as methods. Students will implement classes such as support static, instance method, inheritance, polymorphism, exception handling, and object serialization. A variety of commercial and open source programs and applications will be used.

Information Technology**Subject Code: 145005****All Year****Credit Recommendation: 1.5**

This first course in the IT career field is designed to provide students with a working knowledge of computer concepts and essential skills necessary for work and communication in today's society. Students will learn safety, security, and ethical issues in computing and social networking. Students will also learn about input/output systems, computer hardware and operating systems, and office applications.

Welding (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Gas Metal Arc Welding (CTAG)****Subject Code: 176000****All Year****Credit Recommendation: 1.5**

Students will use the gas metal arc welding process (GMAW) to join various types of metal. They will cut metals using oxy-fuel processes and perform multiple types of welds and joints in all positions up to and including overhead. They will select the appropriate type of electrode wire, shielding gas and adjust welding equipment based on the physical characteristics and metal properties. Students will apply quality control factors to evaluate weld quality.

Shielded Metal Arc Welding (CTAG)**Subject Code: 176001****All Year****Credit Recommendation: 1.5**

Students will be able to use the shielded metal arc welding process (SMAW) to join various types of metal. They will perform multiple types of welds and joints in all positions up to and including overhead. They will select the appropriate type of electrode and adjust welding equipment based on the physical characteristics and properties of the metal. Students will apply their quality control factors to evaluate the quality of welds.

Senior Year:**Flux Cored Arc Welding****Subject Code: 176002****All Year****Credit Recommendation: 1.5**

Students will be able to safely use the flux cord arc welding process (FCAW) to join various types of metal. They will perform multiple types of welds in all positions up to overhead. They will select the appropriate type of cored electrode and adjust welding equipment based on the physical characteristics and properties of the metal. Students will apply their understanding of quality control factors to evaluate the quality of welds.

Gas Tungsten Arc Welding (CTAG)**Subject Code: 176003****All Year****Credit Recommendation: 1.5**

Students will use the gas tungsten arc welding process (GTAW) to join various types of metal. They will perform multiple types of welds and joints in all positions up to and including overhead. They will select the appropriate type of electrode, filler metal and shielding gas and be able to adjust welding equipment based on the physical characteristics and properties of the metal. Students will apply quality control factors to evaluate weld quality.