



Great Oaks Career Campuses
Course Guide
2017-18 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.

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Academic Courses

English Courses

English 11

Subject Code: 050180

All Year

Credit Recommendation: 1

This course integrates literature, composition, listening, speaking, and analytical skills. Students investigate the American experience through authors of different genres. Students will cover close contextual reading and will write both academic and personal pieces reflecting explicit conventions and appropriate vocabulary awareness as learning paths of Ohio's Learning Standards to college and career readiness.

English 12

Subject Code: 050190

All Year

Credit Recommendation: 1

This course is designed to prepare 12th graders for entry into the workforce and/or college upon graduation. Students will combine reading and writing strategies of literature, research, listening and speaking, and problem solving skills while demonstrating vocabulary building and documenting evidence within critique and expository writing from Ohio's Learning Standards. Common tasks focus on developing practical, analytical, and persuasive forms of communication whereby students will examine ideas objectively and express themselves effectively as they prepare to be productive citizens in a diverse society.

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.

Applied Technical Math

Subject Code: 119999

All Year

Credit Recommendation: 1

This course is based on Ohio's Learning Standards and weaves algebra, geometry and statistics and probability concepts into a single course. The topics of the course extend skills learned in earlier courses to solve problems using the properties of real numbers, identifying and using quantities, measurement and units, creating and manipulating expressions and equations, graphing data and equations, connecting geometry and algebra, and analyzing data in context to aid the student to make predictions and decisions.

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.

Probability and Statistics**Subject Code: 111500****All Year****Credit Recommendation: 1**

This course has been designed as an elective course for students who have completed the required Advanced Algebra, Algebra II, or an equivalent course to meet graduation requirements. Students will study real-world problems involving data collection and sampling, measures of central tendency, statistical analysis, spreadsheet applications, graphical displays of data, data modeling, qualitative and quantitative analysis, and theoretical and experimental probability.

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.

Biochemistry**Subject Code: 139998****All Year****Credit Recommendation: 1**

This course emphasizes the chemistry of biological substances and processes through the study of the predictive physical interactions of matter. Course content includes the application of chemistry concepts such as chemical reactions and solubility to water, macromolecules, and chemicals used within the home. Investigations are used to understand and explain the behavior of matter in a variety of inquiry and design scenarios 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.

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

Subject Code: 150600

Semester 1

Credit Recommendation: 0.5

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 with Financial Literacy

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 2

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

College Credit Plus

Students who meet the qualification requirements may enroll in College Credit Plus options. They will earn high school credit for the subject plus the indicated number of College Credit Recommendation upon successful completion of the course. For example, a student passes College Communications and receives credit for high school English, plus earns seven semester College Credit Recommendation. All options are one year courses offered in partnership with Hocking College.

College English

ENGL 1510 English Composition I Semester 1 Credit Recommendation: 1

Subject Code: 059920

ENGL 2123 English Composition II Semester 2 Credit Recommendation: 1

Subject Code: 059920

These courses develop writing skills through medium length writing assignments, concentrating on organizing and unifying essay components. Students are provided with a range of options in several topic areas within a broad definition of the communication process. The students will increase awareness and application of specific written communication techniques including short research-based projects.

ECE 155 (Early Childhood Education) Semester 2 Credit Recommendation 1

Health, Safety, and Nutrition in Childhood – Seniors Only

A course on concepts and techniques for managing health, safety, and nutrition in child care settings serving infants through school age children. Topics include: childhood communicable diseases, licensing requirements, and nutritional needs of young children.

ECE 160 (Early Childhood Education) Semester 2 Credit Recommendation 1

Assessment and Observation in Early Childhood Education – Seniors Only

A course on strategic and purposeful techniques for observing, recording, and assessing the progress of children from infants to school age.

Introduction to American Literature I – (Laurel Oaks Only)

ENGL 2253 Semester 1 Credit Recommendation: 1

Subject code: 050300

This course is designed to introduce students to American literary history from a recognized period of commencement (1624) to the close of the antebellum era of the mid-nineteenth century (1860). Students will consider historical events in light of their general impact on writers of the time and look at how those writers influenced political, social, and cultural developments. Important literary movements and a range of genres will be discussed and analyzed through a series of close readings and critical discussions. The class will also undertake a general but useful study of literary theory. The course may be organized either historically or thematically.

Technical Writing – (Laurel Oaks Only) Semester 2 Credit Recommendation: 1

ENGLISH 2225

Subject Code: 050400

This course involves organizing and presenting written data with an emphasis on clear, precise, objective thinking and writing as demonstrated through a series of written documents. Assignments will include audience analysis, purpose, and format appropriate for letters, memos, reports, and other documents used in technical areas.

College Algebra **All Year** **Credit Recommendation: 1**

MTH 1113 College Algebra

Subject code: 119999

This course is an extension of high school algebra and is designed for students who have successfully completed Algebra II. Concepts of study include analysis of the family of functions; graphing functions to include transformations, inverses and domain and range constraints; exponential and logarithmic functions; functions with radical and rational numbers; solving equations and inequalities; systems of equations; and matrix operations and their use in solving systems of equations.

College Biology

BIOS 1121 Biology I

Semester 1

Credit Recommendation: 1

Subject Code: 132330

BIOS 1122 Biology II

Semester 2

Credit Recommendation: 1

Subject Code: 132330

College Biology investigates the fundamental concepts of heredity and evolution to provide a framework to explore biological concepts. The study of cellular structure and processes is also included.

College Chemistry (Scarlet Oaks Only) **All Year** **Credit Recommendation: 1**

CHEM 1131 Environmental Chemistry

Subject Code: 132326

This general course provides students with an understanding of fundamental chemical principles, including inorganic, organic and environmental aspects. Problem-solving, experimentation measurements, and applications are explored. Students will be able to demonstrate a basic aptitude in laboratory and analytical techniques.

Social Studies

GOVT 1142 American Government and Politics Semester 1

Credit Recommendation: 1

Subject Code: 159950

This course covers the functions, structures, institutions, processes and products of the national government and the impact on citizens.

HUM 2201-500 Western Civilization & Culture Semester 2

Credit Recommendation: 1

Subject Code: 150890

This course provides an understanding that the human experience is not, and never has been, a series of stagnant, isolated moments. Students will learn to appreciate the fact that not all people have shared the same world views, opportunities, or problems. The students will write a final reflection essay that discusses the development of civilization and what we can learn from it.

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 Technology - Collision (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 Technology - Mechanics (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Ground Transportation Maintenance****Subject Code: 17700****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**

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.

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****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 environment and understand rules, regulations and orders relevant to the airport industry.

Aviation General 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 Structure and Design****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 Airframe Systems and Components**Subject Code: 177016****All Year****Credit Recommendation: 1.5****Aviation Airframe Related****Subject Code: 177016****All Year****Credit Recommendation: 1**

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, ignition systems.

CareerX Lab (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.

College Agriculture (Laurel Oaks)**Senior Year Only:****Agronomic Systems****Subject Code: 010620****Semester 1****Credit Recommendation: 1.8**

Students will apply knowledge and skills required to research, develop, produce and market major agricultural and horticultural crops. Cultural and sustainable production practices will be examined while students apply scientific knowledge of plant development, nutrition and growth regulation. The knowledge and skills needed to manage water, soils, and pests related to agronomic crops will be assessed. Students will employ technological advances, communication, business, and management strategies appropriate for the industry.

Global Economics and Food Markets**Subject Code: 010130****Semester 1****Credit Recommendation: 1**

Students will examine economic principles related to agriculture, food, and natural resources along with the operation and use of commodity futures and option markets. Students will learn economic principles with emphasis on their application to the solution of agricultural industry problems. They will examine future exchanges and commodity futures contracts, hedging strategies, as well as put and call options. Throughout the course, students will become familiar with the causes and consequences of economic growth, globalization and development.

Greenhouse and Nursery Management (CTAG)**Subject Code: 010610****Semester 2****Credit Recommendation: 1.8**

Students will learn the operational practices needed for the successful growth of nursery stock and/or greenhouse plants. They will learn essential greenhouse practices including water and fertilizer distribution, lighting, ventilation and temperature control. Students will learn pest and disease identification and control along with bio-security practices. Students will demonstrate knowledge of propagation methods, plant health, nutrition, and growth stimulation. Throughout this course, business and employability skills will be emphasized.

Business Mgt. for Agricultural & Environmental Systems (CTAG)**Subject Code: 010115****Semester 2****Credit Recommendation: 1**

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.

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, 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 panels. Specialty commercial circuit installation will be addressed. Students will apply operating principles to the installation and troubleshooting of motors and controls.

Computer Service Technician and Networking (Diamond, Live and Laurel Oaks)**Junior Year:****Information Technology****Subject Code: 145005****All Year****Credit Recommendation: 1**

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.

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.

Computer Software (CTAG)**Subject Code: 145030****All Year****Credit Recommendation: 1**

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: 1.5**

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.

Programming (CTAG)**Subject Code: 145060****All Year****Credit Recommendation: 1.5**

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.

Construction Framing and Finishing Technologies (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.

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.

Remodeling/Renovation**Subject Code: 178023****All Year****Credit Recommendation: 1.5**

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.

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.

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.

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 and Scarlet Oaks)

Junior Year:

Hospitality Fundamentals (CTAG)

Subject Code: 330000

All Year

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 –In Process)

Subject Code: 330100

All Year

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:**Baking and Pastry Arts****Subject Code: 330125****Semester 1****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.

Contemporary Cuisine**Subject Code: 330105****Semester 2****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.

Dental Assisting (Laurel and Scarlet Oaks)**Junior Year:****Oral Diagnosis and Treatment Planning****Subject Code: 072080****All Year****Credit Recommendation: 1.5**

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: 1.5**

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 chair-side 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.

Senior Year:**Medical and Dental Office Technology****Subject Code: 072155****All Year****Credit Recommendation: 1.5**

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.

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.

Digital Arts and Design (Diamond, Laurel, Live and Scarlet Oaks)

Junior Year:

Creating and Editing Digital Graphics (CTAG)

Subject Code: 145100

All Year

Credit Recommendation: 1

Students will learn to design, develop, and produce interactive media projects, web sites, and social media contexts. Students will demonstrate methods of creating professional quality media using commercial and open source software.

Multimedia and Image Management Techniques (CTAG)

Subject Code: 145105

All Year

Credit Recommendation: 1

Students will apply principles of image creation, management procedures, and multimedia techniques as they create, revise, optimize, and export graphics for video, print, and web publishing. The course will address issues related to web based publishing, social media, and security. Students will utilize current commercial and open source languages, programs, and applications.

Visual Creation (CTAG)

Subject Code 340315

All Year

Credit Recommendation: 1

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:

Design Techniques (CTAG)

Subject Code: 145095

All Year

Credit Recommendation: 1

Students will learn techniques for transforming photographic images through use of digital cameras, computers, and mobile devices. To accomplish this, they will learn software photo editing techniques including layering, color correction, masking, and special effects using current commercial and open source programs and applications.

Creating and Editing Digital Graphics (CTAG)

Subject Code: 145100

All Year

Credit Recommendation: 1

Students will learn to design, develop, and produce interactive media projects, web sites, and social media contexts. Students will demonstrate methods of creating professional quality media using commercial and open source software.

Information Technology Capstone

Subject Code: 145015

All Year

Credit Recommendation: 1

The capstone course provides opportunities for students to apply knowledge, attitudes and skills that were learned in 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

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 Senior Lab

Subject Code: 350201

All Year

Credit Recommendation: 3

Students learn all aspects of child development and participate in field experiences at pre-schools and day care centers. They create and implement lesson plans that align with Ohio's Early Learning and Development Standards. Students can earn the Step Up to Quality Certification for Curriculum and Assessments for Early Childhood Education Teachers.

Engineering Technologies and Robotics (Scarlet Oaks)

Junior Year:

Manufacturing Operations

Subject Code: 175003

All Year

Credit Recommendation: 1.5

Students will learn the production processes applied across manufacturing operations. Students will be able to demonstrate a broad array of technical skills with an emphasis given to quality practices, measurement, maintenance and safety.

Digital Electronics (CTAG)

Subject Code: 175007

All Year

Credit Recommendation: 1.5

Students are introduced to the process of combinational and sequential logic design. The system uses a precise sequence of discrete voltages representing numbers, non-numeric symbols or commands for input, processing, transmission, storage, or display. Engineering standards and methods for technical documentation will also be learned.

Senior Year:

Robotics

Subject Code: 175004

All Year

Credit Recommendation: 1.5

Students will apply the knowledge and skills necessary to program and operate robots using the teach pendant as the main interface point. The students will learn robotic operations and system configurations. Students will code, compile, and debug programs using the robotic programming language.

Computer Integrated Manufacturing**Subject Code: 175006****All Year****Credit Recommendation: 1.5**

In this course, students will be introduced to all aspects of computer-integrated manufacturing. They will learn about robotics and automation, manufacturing processes, computer modeling, manufacturing equipment, and flexible manufacturing systems.

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:

Exercise and Athletic Training (CTAG)

Subject Code: 072000

All Year

Credit Recommendation: 1.5

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: 1.5

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:

Exercise and Athletic Training (CTAG)

Subject Code: 072000

All Year

Credit Recommendation: 1.5

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: 1.5

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.

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 that successfully complete this course at a chartered institution 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: 1.5**

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.

Health Science and Technology**Subject Code: 072001****All Year****Credit Recommendation: 1.5**

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.

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 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.

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 the 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**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.

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.

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.

The Correctional System and Services (CTAG)**Subject Code: 170915****All Year****Credit Recommendation: 1**

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

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.

Investigations and Forensics in Criminal Investigations

Subject Code: 170914

All Year

Credit Recommendation: 1.5

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.

Masonry (Laurel Oaks)

Senior Year Only:

Concrete and Residential Masonry

Subject Code: 178006

All Year

Credit Recommendation: 1.5

In this course, students will learn to read and interpret construction plans and drawings for masonry applications. They will learn to select materials based on physical attributes and job requirements. Students will set grades and construct forms, for concrete foundations, footings, and retaining walls. They will mix, reinforce, pour and finish concrete in various residential and commercial applications.

Construction Safety and Crew Leadership (CTAG)

Subject Code: 178018

All Year

Credit Recommendation: 1.5

This course covers OSHA standards (30-hr OSHA) and requirements as they apply to the construction industry and crew/project management. Topics include safety and health hazards, safe practices, construction safety management, and crew management. Emphasis is on hazard identification, avoidance, control and prevention.

Precision Machining (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.

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**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: 1.5

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.

Health Science and Technology

Subject Code: 072001

All Year

Credit Recommendation: 1.5

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.

Senior Year:

Surgical Support

Subject Code: 072070

All Year

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

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 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.

Sustainable Urban Agriculture (Diamond Oaks)

Junior 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.

Greenhouse and Nursery Management (CTAG)**Subject Code: 010610****All Year****Credit Recommendation: 1.5**

Students will learn the operational practices needed for the successful growth of nursery stock and/or greenhouse plants. They will learn essential greenhouse practices including water and fertilizer distribution, lighting, ventilation and temperature control. Students will learn pest and disease identification and control along with bio-security practices. Students will demonstrate knowledge of propagation methods, plant health, nutrition, and growth stimulation. Throughout this course, business and employability skills will be emphasized.

Senior Year:**Agricultural and Environmental Systems Capstone****Subject Code: 010190****All Year****Credit Recommendation: 1**

Students apply agricultural and environmental systems program knowledge and skills in a more comprehensive and authentic way. Capstones are project/problem-based learning opportunities that occur both in and away from school. Under supervision of the school and through partnerships, students combine classroom learning with work experience to benefit themselves and others. These can take the form of mentorship employment, cooperative education, apprenticeships and internships.

Landscape Systems Management (CTAG)**Subject Code: 010615****All Year****Credit Recommendation: 1**

Students will learn methods for establishing and managing landscapes to promote growth and balance. The classification and care of woody and herbaceous landscape plants will be learned. Students will learn to optimize growing conditions, balance nutrients, and manage pests and disease. They will apply proper planting, fertilizing, and pruning techniques while safely operating well maintained specialized equipment. Throughout the course, students will assess implications of landscape installation on the environment, and employ communication, business, and management strategies.

Plant and Horticultural Science (CTAG)**Subject Code: 010155****All Year****Credit Recommendation: 1**

This course focuses on the knowledge and skills required to research, develop, produce and market agricultural, horticultural, and native plants and plant products. Students will apply principles of plant physiology and anatomy, plant protection and health, reproductive biology in plants, plant nutrition and disorders to the management of soils and plants. Throughout the course, students will learn communication, leadership, and business management skills reflective of the industry.

Veterinary Assisting (Diamond, Live, 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 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:*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 animal. Throughout the course, students will apply the internal functions of anatomical structures to the business and industry principles of the animal industry.

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, Live and Scarlet Oaks)**Junior Year:****Information Technology****Subject Code: 145005****All Year****Credit Recommendation: 1**

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.

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.

Senior Year:**Object Oriented Programming****Subject Code: 145065****All Year****Credit Recommendation: 1**

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.

Visual Programming**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.

Systems Analysis and Design**Subject Code: 145075****All Year****Credit Recommendation: 1**

Students will learn the theory and practice of software testing and develop an understanding of the analysis and design phases of software development. Students will effectively use appropriate programming languages and software patterns to improve software development. A variety of commercial and open source programs, applications, and tools will be used.

Welding (Diamond, Laurel, Live and Scarlet Oaks)**Junior Year:****Gas Metal Arc Welding****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**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**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.