Jessamine Career & Technology Center

2019-2020 Course Catalog

Jessamine County Schools

a word from our principal

Dexter Knight

Dear Students, Parents, and Guardians,

The ***power*** of quality Career and Technical Education (CTE) programs has influenced our community, great Commonwealth, and Nation for many years. Through quality CTE programs and Career and Technical Student Organizations students have discovered many rewarding careers and many future business and community leaders have been developed. Our commitment to our students while attending the Jessamine Career and Technology Center (JCTC) is an education that is challenging and relevant, while meeting the growing demands of the real world here in Jessamine County, our state, country, and world.

Please feel free to contact any of our JCTC staff, including the College and Career Readiness (CCR) Center staff to assist you in selecting courses for your high school schedule. Please feel free to contact me with any questions concerning JCTC or Career Technical Education in general. You can reach me by email at dexter.knight@jessamine.kyschools.us or at 881-TECH (8324).

Sincerely,

Dexter Knight, Principal
Jessamine Career and Technology Center

The Jessamine Career and Technology Center is a 50,000 square foot building located directly behind the Jessamine County Board of Education. JCTC offers challenging, high level technology infused Career Pathways in Program Areas in: Agriculture, Business and Marketing, Family & Consumer Sciences, Health Sciences, Information Technology, Biomedical Sciences, Public Safety and Engineering. There is also opportunity for students to earn college credit in many dual credit classes with Morehead State University and Murray State University.

Kentucky's 16 Career Clusters

Kentucky features 16 Career Clusters and for Jessamine County students, pathways are available in all 16 with pathways in various physical locations. Below is a brief overview of each of the pathway offerings here at JCTC:

Agriculture—*In the Agriculture Department…We study animals, large and small. We learn about wildlife creatures that climb and crawl. We grow plants from seed and arrange flowers for every need. We construct from wood and repair small engines that could. We design businesses that serve and technology to help farmers get above the curve. These courses allow you to put your knowledge into action through hands-on learning, indoors and outdoors. If this paragraph caught your eye, the Agriculture Department is the place for you.*

Bio-Medical—*PLTW Biomedical Science students step into the roles of biomedical science professionals to take on real-world challenges and investigate topics including human medicine, physiology, genetics, microbiology, and public health while working with the same equipment and tools used by lab professionals. Students will engage in examining autopsy reports, medical histories, and medical treatments. They will learn the ins and outs of muscle movement, nerve impulses, reflexes, and build tissues and organs on a skeletal Maniken® as exploration of human body systems. They will study prevention, diagnosis and treatment of disease and how to fight infection. They will also evaluate cancer treatment options and how to prevail when organs of our bodies begin to fail. They can expect to do several dissections (heart, brain, fetal pig) and to cap it all off they will design innovative solutions for current pressing health challenges found in areas of modern medicine.*

Business & Marketing—*The Business & Marketing program area prepares students for the professional business world. Students will engage in marketing and business activities including marketing campaigns, customer service, internet marketing, financial services, business management operations, banking, and entrepreneurship. The skills students obtain in Business & Marketing classes will lead them to off campus internships and school based enterprise opportunities including running the school store and bank, planning a fashion show, and flying a drone! Prepare for the working world that awaits with Business & Marketing.*

FCS—*If you enjoy learning about and working with people, creating new food recipes, providing quality child care, or creating projects for fashion/interior design this diverse pathway could be for you. Education, childcare, culinary, hospitality, food science, fashion, and interior design are all featured in this exciting pathway.*

Health Sciences—*If you are interested in providing physical therapeutic services to people, diagnosing illness and implementing strategies for health improvement, improving quality of life for people, exciting work environments, developing a better understanding of the human body, and the chance to wear scrubs to work, then Health Sciences could be your pathway.*

IT—*If you like programming, web page development, game design, computer maintenance and networking, then Information Technology is your pathway. Information Technology classes will lead you to real-world opportunities through the Student Technology Leadership Program, the Programming Club, eSports, possible job opportunities, and school based activities. These opportunities include running the tech support program, programming various robots, live motion capture, independent study courses, and even creating your own game to be played and tested on our JCTC arcade machine!*

Pre-Engineering—*If you enjoy figuring out how things work, solving puzzles (actual or theoretical), taking things apart and putting them back together, and using your creativity in terms of design, the Engineering Program Area could be for you. This program involves students in problem-solving, planning, constructing, programming and managing. The Engineering Program Area includes civil engineering, electrical engineering, and industrial/mechanical engineering pathways.*

Pre-Law—*The Pre-Law program prepares students by providing them the knowledge and skills necessary for success in a legal career. This pathway primarily trains students for a career as an attorney, paralegal, or legal assistant, however, the knowledge and skills gained are also beneficial to students interested in a law enforcement career-(police officer, state trooper, and more). Some of the major topics covered include: how the court system works, trial delivery, case law, statutory law, criminal procedure, and public speaking.*

Public Services—*If you are interested in planning, managing, and/or providing public safety, protective services, and homeland security, this pathway should interest you. Public Services is geared for those students who are interested in a career as an EMT, Firefighter, or Police Officer. Those students who are ready to engage in a career centered around protecting the lives of others and becoming trained in the skills to do so should enter the Public Services pathway.*

Transportation—*If you are interested in a career doing preventive maintenance, troubleshooting, and repair on medium and heavy duty diesel trucks and equipment, then this pathway could be for you. Students work in a classroom and shop setting at our first of its kind diesel mechanics center, which is housed in the bus garage. Work alongside certified mechanics to learn a lucrative trade. Students have the opportunity to earn dual and articulated credit as well as the Entry Level ASE Technician certification.*

A Career Pathway is a sequence of recommended courses focusing on a specific career within the cluster. **To complete a career pathway, students must earn four career-related credits within the career pathway.**

Completion of a Career Pathway within a designated career cluster is a graduation requirement for all Jessamine County students.

JESSAMINE COUNTY CAREER PATHWAYS

Students who complete (take 4 courses in a specific pathway) a Career Pathway in Career and Technical Education will earn the distinction of a CTE (Career and Technical Education) Completer. These students will be recognized at graduation as a CTE completer and may be eligible for Skills Standards Certification or Industry Certification upon successful completion of a Skills Standards Test or Industry Certification Test (fees apply to most Industry Certification Exams).

AGRICULTURE

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Agribusiness Systems	• **Principles of Ag*** • Agribusiness • Ag Sales & Marketing • Ag Communications	• Greenhouse Technology • Ag Ed Internship		Agribusiness
Agricultural Power, Structural, Technical Systems	• **Principles of Ag*** • Ag Construction Skills • Small Power Equipment • Ag Welding & Structures	• Ag Sales & Mkt. • Agribusiness • Ag Ed Internship	Equipment & Engine Training Council 4 Stroke	Agricultural Power
Animal Science Systems	• **Principles of Ag*** • Animal Science • Equine Science AND/OR Small Animal AND/OR Adv. Animal Science	• Ag Sales & Mkt. • Agribiology • Agribusiness • Ag Ed Internship		Animal Science
Environmental Science/Natural Resources Systems	• **Principles of Ag*** • Wildlife Resources • Plant & Land Science OR Agribiology • Environmental Science	• Ag Sales & Mkt. • Greenhouse Technology • Ag Ed Internship		Environmental Science
Horticulture & Plant Science Systems	• **Principles of Ag*** • Plant & Land Science • Floral Design OR Landscaping/Sports Turf Mgmt • Greenhouse Technology	• Agribusiness • Ag Sales & Mkt. • Agribiology • Ag Ed Internship	KY Dept of Ag Pesticide Operator Certification (Pilot)	Horticulture
Veterinary Assisting	• **Principles of Ag*** • Veterinary Assisting I • Veterinary Assisting II • Veterinary Assisting III	• Ag Ed Internship	NAVTA-Veterinary Assisting Certification	Animal Science

Students must take 4 courses to complete a pathway. At least 3 must be **required courses in that pathway. In order to test in Agriculture, one of those three must be Principles of Agriculture. There is a cost associated with industry certification exams.*

AGRICULTURE COURSE DESCRIPTIONS AND DETAILS

Principles of Agricultural Science & Technology (Principles of Ag.)

1 credit
Prerequisite: None
9th-11th grade
Yearlong Course
No seniors will be allowed to enroll in this course
This course introduces students to the various segments of the agriculture industry. Agricultural career opportunities will be emphasized. Basic animal science, plant and land science, and agricultural mechanics skills may be included. The selection and planning of a supervised agricultural experience program and related record keeping will be presented. Personal development and speaking skills will be heavily emphasized. Leadership development will be provided through the FFA. Students will receive personal guidance and counseling with preparatory instructional program selection. Each student will be expected to have a supervised agricultural experience program (SAE).

Agribusiness

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
Semester Course
This course introduces the free enterprise system, the study of economic principles, risk management, business law, budgets, finance, recordkeeping, and careers in agribusiness. Basic skills will be developed to manage a farm or agribusiness. Material will include: managing production/inventory, equipment, credit and taxes, market analysis and developing a business/farm plan. Content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program.

Ag Sales & Marketing

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
Semester Course
This course provides an introduction to agricultural sales and marketing. Course material will

include: Competition in the agriculture market place, marketing decisions, types of markets, contracting, government programs and regulations, personal development, employee and employer responsibilities, communications, promotion strategies, records, files, purchasing materials, stocking, selling and business account procedures. Content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program (SAE).

Ag Communications

1 credit
Prerequisite: Agribusiness or Ag Sales
11th-12th grade
Semester Course
This course is designed to assist students with developing skills needed to be successful leaders and responsible members of society. The student will develop personal attributes and social skills. Emphasis will be placed on interpersonal skills, team building, communication, personal development and leadership. This course will include opportunities for students to apply their knowledge.

Small Power Equipment

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
(This course will be taught at WJHS)
Semester Course
Small Power and Equipment was developed to provide you with an understanding of the components that compose a small engine and introduce you to the industry as a whole. Content will include a study of history behind the industry, each system within the engine, an understanding of business principles, and assembly and disassembly. Leadership opportunities will be provided through the FFA, and character and career building will be explored through Supervised Agricultural Experience Program (SAE).

Ag Construction Skills

1 credit
Prerequisite: Principles of Agricultural Science & Technology, Algebra I and/or enrolled in Geometry
10th-12th grade
(This course will be taught at WJHS)
Semester Course
This course prepares students to construct and maintain agricultural structures and equipment. Develps basic skills such as: tool identification, interpreting plans, calculating a bill of materials, electrification, carpentry, welding, metal fabrication, plumbing, and masonry. Content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program (SAE). This course may be extended to two credits offered on a two-hour basis provided that instruction is enhanced with laboratory experience, project construction, and in-depth skill development.

Ag Welding and Structures

1 credit
Prerequisite: Ag Construction Skills OR Small Power + Geometry
10th-12th grade
(This course will be taught at WJHS)
Semester Course
This course prepares students to evaluate, design and construct agricultural structures. Students learn to design, evaluate and interpret construction plans and calculate a bill of materials. The skills learned in the Agricultural Construction Skills course may be incorporated to construct an agricultural structure. Content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have an agricultural experience program.

Adv. Ag Construction & Welding

1 credit
Prerequisite: Ag Construction Skills and Ag Welding & Structures
10th-12th grade
(This course will be taught at WJHS)
Semester Course
This course is designed for students that are interested in the ultimate shop experience. Students taking this course will work in the shop on two large projects; one will focus on carpentry skills the other will focus on metal working. Students will design and build the projects. Students who take this class must have passed Ag Structures and Welding as well as Ag Construction.

Small Animal Technology

1 credit
Prerequisite: Principles of Agricultural Science & Technology or concurrently enrolled in Principles of Ag
9th-12th grade
Semester Course
This course develops scientific knowledge, management practices, and marketing strategies in small and specialty animal technology. The curriculum may include identification, anatomy, physiology, nutrition, health, selection and care of small animals such as cats, dogs, rabbits, companion birds, ostriches, emus, tropical fish and furbearers. The content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program.

Animal Science

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
Yearlong Course
This course develops knowledge and skills pertaining to livestock identification, selection, nutrition, reproduction and genetics, health management, and marketing of one or more species of farm animals. The latest biotechnology applications will be included. The content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program (SAE).

Equine Science

1 credit
Prerequisite: Animal Science
10th-12th grade
Semester Course
Equine science develops knowledge and skill pertaining to breed identification and selection, anatomy, physiology, nutrition, genetics and reproductive management, training principles, grooming, health, disease, parasite control and sanitation practices. Content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program (SAE).

Advanced Animal Science

Dual Credit Course associated with Morehead State University
1 high school credit/3 hours college credit
Prerequisite: Animal Science I
11th-12th grade
Yearlong Course
Advanced animal science is taught as a dual credit course through Morehead State University. This course is an introduction to the comparative anatomy and physiology of common livestock species, including horses, beef and dairy cattle, swine, sheep and goats. The focus of this course will be on the structure and function of the various organ systems of livestock and how they relate to management practices. Upon completion of the course and a satisfactory grade, students will receive college credit through the University for AGR 143.

Wildlife Resources

1 credit
Prerequisite: Principles of Agricultural Science & Technology or concurrently enrolled in Principles of Ag
9th-12th grade
Semester Course
If you are an outdoors lover, this course is for you. Curriculum in the class may include wildlife habitats, wildlife management, conservation, hunter ethics, wildlife identification, harvesting, marketing, taxidermy, and understanding outdoor recreational enterprises. The content may be enhanced with appropriate computer applications. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program (SAE).

Plant and Land Science

1 credit
Prerequisite: Principles of Agricultural Science & Technology or concurrently enrolled in Principles of Ag
9th-12th grade
Yearlong Course
Plant and Land Science develops basic scientific knowledge and skills pertaining to management of the land and its effects on food and fiber production, the environment, and the quality of life. The relationship of land to plant growth will be emphasized. Plant composition, reproduction, growth, and current biotechnological advances will be included.
Each student will be expected to have a supervised agricultural experience program (SAE)

Agribiology

1 credit
Prerequisite: Integrated Science, Physics or Chemistry
11th-12th grade
Yearlong Course
Agri-Biology is a one-credit interdisciplinary course that meets the "life science requirement" for science credit. This course may count as one of the three required credits in science for high school graduation. Agri-Biology uses agricultural contexts to present the required life science core content for assessment, as outlined in the program of studies. As students study practical agricultural concepts, they apply scientific ways of thinking and working to real-life problems. The agriculture teacher and science teacher work together in planning and evaluating the course. Content may be enhanced by utilizing appropriate technology. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program.

Environmental Science

1 credit
Prerequisite: Wildlife Resources
Recommended: Agribiology or Biology
11th-12th grade
Yearlong Course
This course provides students with a foundation of understanding, knowledge and skills to deal effectively with environmental problems such as global warming, acid rain, endangered species and invasive plants and animals. Students learn a variety of basic laboratory and field techniques including soil and water sampling. The course incorporates both academic and applied studies that include fieldwork in the local area watershed and onsite field trips. The structure and function of natural ecosystems, the history of the environmental movement, impact of legal, economic and political systems on environmental concerns is taught. Students also gain a broad awareness of environmental science and technological career opportunities. An emphasis is placed on students using critical thinking and analytical skills to make a positive impact on the environment. Leadership development will be provided through FFA.
Each student will be expected to have a supervised agricultural experience program (SAE)

Floral Design

1 credit
Prerequisite: Principles of Agricultural Science & Technology
11th-12th grade
Semester Course
This course is designed to allow students to use hands-on activities to learn floral design principles and techniques. Students will also study horticulture plant identification, marketing, and management while preparing for a career in floriculture. The content may be enhanced with appropriate computer applications. Leadership activities will be provided for students who wish to participate.
(Fee $30.00 for floral materials)
Each student will be expected to have a supervised agricultural experience program (SAE).

Greenhouse Technology

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
Yearlong Course
This course provides instruction in plant growth, development, and propagation as well as production and maintenance of bedding and container plants. Fundamental principles of vegetable production and commercial production of vegetable crops may be included. The course focuses heavily on application of skills in the greenhouse setting. Students will select varieties and produce and market a variety of greenhouse crops. The content may be enhanced with appropriate computer applications. Leadership activities will be provided for student's who wish to participate. Each student will be expected to have a supervised agricultural experience program (SAE).

Landscaping/Sports Turf Management

1 credit
Prerequisite: Principles of Agricultural Science & Technology
11th-12th grade
Semester Course
This course combines landscaping and turf management curriculum. The material includes identification of landscape plants and their characteristics, site evaluation, site design, calculation of materials needed, costs for bidding, and installing landscape plans. Landscape plant maintenance will also be presented. Selection, culture and management of turf species used for lawns, golf courses, athletic fields and erosion control may also be included. Content may be enhanced by utilizing appropriate technology. Leadership development will be provided through FFA. Each student will be expected to have a supervised agricultural experience program.

Veterinary Assisting I

1 credit
Prerequisite: Principles of Agricultural Science & Technology
10th-12th grade
Application Required at http://bit.ly/1Rtg6wg
Yearlong Course
For the duration of this entry level class, students will dive into the basics of Vet Assisting including but not limited to proper restraint procedures, customer relations, computer literacy associated with public relations, veterinary medical terminology and basic safety procedures in the veterinary clinic. Students during the first year entry level course will also be responsible for client intake for the grooming lab and keeping proper client records. Students will be required to abide by a dress code and sign parent consent.

Veterinary Assisting II

1 credit
Prerequisite: Veterinary Assisting I
10th-12th grade
Application Required at http://bit.ly/1Rtg6wg
Semester Double-Blocked Course
This class is centered around applying principles that are taught in Vet Assisting I. Students

will be required to adhere to a dress code set forth by the course instructors that would represent that of the certified Veterinary Assistant. Students will be carrying out procedures associated with basic animal nursing including running and operating JCTC's grooming lab.

Veterinary Assisting III

1 credit
Prerequisite: Veterinary Assisting II
11th-12th grade
Application Required at http://bit.ly/1Rtg6wg
Semester Double Blocked Course
Students in this course will be working independently for a portion of the assigned time in class one on one with a licensed veterinarian. Students will be learning high level vet assisting techniques and how they would look day to day in the veterinary clinic. Students will complete either the KOSSA exam in Animal Science of the National Association of Veterinary Technicians in America's national licensure exam for Veterinary Assistants. Cost for Exam is $100.

BIOMEDICAL SCIENCE

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
PLTW Biomedical Science	• Principles of Biomedical Science • Human Body Systems • Medical Interventions • Biomedical Innovations		NOCTI-Biomedical Sciences	

BIOMEDICAL SCIENCE COURSE DESCRIPTIONS AND DETAILS

Principles of the Biomedical Sciences™ -Project Lead The Way (PBS)

1 credit
Prerequisite: None
9th-10th grade
Yearlong Course
In the introductory course of the PLTW Biomedical Science program, students explore concepts of biology and medicine to determine factors that led to the death of a fictional person. While investigating the case, students examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. The activities and projects introduce students to human physiology, basic biology, medicine, and research processes while allowing them to design their own experiments to solve problems. Important concepts covered in course include basic forensic analysis, Diabetes, Sickle Cell Anemia, Heart disease, and Infectious diseases.

Human Body Systems™ -Project Lead The Way (HBS)

1 credit
Prerequisite: Principles of Biomedical Science
10th-11th grade
Yearlong Course
Students examine the processes, structures, and interactions of the human body systems to learn how they work together to maintain homeostasis (internal balance) and good health. Using real-world cases, students take the role of biomedical professionals and work together to solve medical mysteries. Hands-on projects include designing experiments, investigating the structures and functions of body systems, and using data acquisition software to monitor body functions such as muscle movement, reflex and voluntary actions, and respiratory operation. Important concepts covered in the course are communication, transport of substances, locomotion, metabolic processes, defense, and protection.

Medical Interventions™ -Project Lead The Way (MI)

1 credit
Prerequisite: Human Body Systems
11th-12th grade
Yearlong Course
Students investigate the variety of interventions involved in the prevention, diagnosis and treatment of disease as they follow the lives of a fictitious family. The course is a "How-To" manual for maintaining overall health and homeostasis in the body as students explore: how to prevent and fight infection; how to screen and evaluate the code in human DNA; how to prevent, diagnose and treat cancer; and how to prevail when the organs of the body begin to fail. Through these scenarios, students are exposed to the important roles scientific thinking and engineering design play in the development of interventions of the future.

Biomedical Innovations™-Project Lead The Way (BI)

1 credit
Prerequisite: Medical Interventions or concurrent
11th-12th grade
Yearlong Course
Students design innovative solutions for the health challenges of the 21st century. They work through progressively challenging open-ended problems, addressing topics such as clinical medicine, physiology, biomedical engineering, and public health. They have the opportunity to work on an independent project with a mentor from a university, hospital, research institution, or the biomedical industry.

BUSINESS & MARKETING

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Management	• Business Principles • Business Ethics • Business Management • Financial Literacy OR ECO 190 Financial Literacy DC	• School Store Internship OR • Business & Marketing Internship		Business Management
Marketing	• Principles of Marketing • Advanced Marketing Choose 2: • Advertising & Promotion • Fashion Marketing • Sports & Event Marketing • Travel & Tourism Marketing • Financial Literacy • Entrepreneurship	• School Store Internship OR • Business & Marketing Internship		Marketing
Digital Marketing	• Principles of Marketing • Advanced Marketing Choose 2: • Social Media Marketing • Digital Media Marketing • Advertising & Promotion	• School Store Internship OR • Business & Marketing Internship		Marketing

**Students must take 4 courses to complete a pathway. There is a cost associated with industry certification exams.*

BUSINESS & MARKETING COURSE DESCRIPTIONS AND DETAILS

Business Principles

1 credit
Prerequisite: None
9th-12th grade
Semester Course
In this course you'll explore the major areas of business through fun, real world projects. Students will investigate management, financial literacy, marketing, business basics, business computer applications, international trade, and free enterprise. This course establishes basic foundations for further study in business and financial services courses and provides essential information for making financial, business, and economic decisions.

Business Ethics

1 credit
Prerequisite: Business Principles
9th-12th
Semester Course
In recent years, a Pharmaceutical CEO raised the price of a life-saving pill from $18 to $750, Volkswagen installed illegal software in cars in order for them to pass emissions tests, and FIFA executives received kickbacks totaling over $200 million. Business Managers are confronted with ethical dilemmas regularly, the decisions these managers make shape the image and culture of their business. Business Ethics is a principles-based ethics course introducing students to key leadership and ethical knowledge and skills. Students will apply ethical principles and lessons learned from actual business case studies to contemporary, real-world situations that teens and young adults often encounter in school, at home, with friends, and in entry-level job positions.

Business Management

1 credit
Prerequisite: Business Ethics
10th-12th
Semester Course
The Business Management course provides students with an understanding of the business management functions, various management theories, and the basic organization of a business. This course emphasizes the skills needed for managing a business that involves the selection and supervision of employees including efficient use of time, personnel, facilities, and financial resources. Create your own business to help develop management skills in the areas of distribution, planning, controlling, organization, and human resources.

Financial Literacy

1 credit
Prerequisite: Business Management
11th-12th grade
Semester Course
This course is designed to provide students with the knowledge and skills to manage one's financial resources effectively for lifetime financial security. Topics include economics, money in the economy, budgeting, credit, consumer rights, investments and retirement planning. This course is also designed for students who are interested in improving their practical math skills that are commonplace in the world of business and finance. When taken during 12th grade, this course can be counted as a 4th math credit.

ECO 190 Financial Literacy Dual Credit

1 credit
Prerequisite: Business Management
11th-12th grade
Semester Course
This dual credit course, taught through Murray State, is a study of consumer buying practices, family finances, protection of the consumer, and other problems of the household.
The purpose of this course is to prepare the student to manage his/her own personal financial affairs in a competent manner as well as providing a foundation for later study and work in the financial planning field by examining the products and services offered by the financial services industry. This course is also designed for students who are interested in improving their practical math skills that are commonplace in the world of business and finance. 3 college credit hours will be available to those who meet Murray State University admission requirements of 3.0 GPA and 18 on ACT and pay the course fee and admission fee. Students can apply for the Work Ready Scholarship to cover the cost of course tuition.

Principles of Marketing

1 credit
Prerequisite: None
Semester Course
This course provides a basic foundation for further study in marketing. Through projects and problems students will determine how and why marketers make decisions. This course is project based and is designed to include marketing and employment skills that will encourage a successful transition into the working world. Students study economic functions at work in the marketplace, marketing functions including product/service management, promotion, purchasing, pricing, and distribution functions.

Advanced Marketing

1 credit
Prerequisite: Principles of Marketing
Semester Course
This course is designed to enhance marketing skills developed in the Principles of Marketing course and to learn advanced marketing skills in such areas as advertising, customer service, supervision, and employee/employer relations for a wide range of marketing careers. Students assume a managerial perspective in applying economic principles in marketing, analyzing operations needs, examining distribution and financial alternatives, managing marketing information, pricing products and services, developing product/service planning strategies, promoting products and services, purchasing, and professional sales.

Advertising and Promotion

1 credit
Prerequisite: Principles of Marketing
Semester Course
Produce, promote, and design advertising campaigns. This course is designed to provide students with a realistic "hands-on" application of techniques used in the advertising and promotion of goods and services. Students will create a start-up business through the culminating entrepreneurship project. This course will utilize digital media including computer-generated text, graphics, photographs, and sound and video equipment, while being exposed to all forms of media used by industry today.

Entrepreneurship

1 credit-School Store
Prerequisite: Advanced Marketing, or Business Management
11th & 12th Grade (or teacher approval)
Semester Course
This course is designed to provide students the skills needed to effectively organize, develop, create and manage their own business. This course is based on the business and marketing core that includes communication skills, economics, financial analysis, operations, promotion and selling. Learn skills needed for small business management through operating The Shack -- our school based enterprise. This course allows students the opportunity to learn outside the four walls of the classroom and gain valuable work experience.

Fashion Marketing

1 credit
Prerequisite: Principles of Marketing
Semester Course
This course provides instruction in the marketing of apparel and accessories. It is based upon the business and marketing core that includes communication skills, economics, operations, professional development, promotion, selling, distribution and product/service management. The instruction includes basic fashion and marketing basics, the use of design and color, promotions, visual merchandising and career opportunities. Students will have the opportunity to display leadership and project management skills with the production of the annual fashion show.

Sports and Event Marketing

1 credit
Prerequisite: Principles of Marketing
Semester Course
Examine sponsorship, branding, and licensing; as well as the economic impact of the sports and entertainment industry. Create a sports team and learn the ins and outs of marketing a team throughout its season. This course is designed to develop a thorough understanding of the marketing and management concepts and theories that apply to sports and events.

Travel and Tourism Marketing

1 credit
Prerequisite: Principles of Marketing
Semester Course
Explore all aspects of the travel and tourism industry including restaurants, lodging, entertainment, retail, travel, and hospitality. Develop projects that examine services marketing in the travel industry and the development of hospitality packages. This course focuses on communication skills, teamwork, economics, promotion, marketing-information management, and selling.

Social Media Marketing

1 credit
Prerequisite: Principles of Marketing
Semester Course
Explore e-commerce, digital marketing, website management, social media, and online promotion. Students learn how to practice good marketing principles in an "electronic" marketing place. Communicate with real clients to create a website for an existing business and work with community to advance their social media interactions. Students will use various forms of digital media including computer-generated text, graphics, photographs, and website design software, while being exposed to all forms of media used by industry today.

Digital Media Marketing

1 credit
Prerequisite: Principles of Marketing
10th-12th grade
Semester Course
Do you love to take videos of yourself and others? If so this is the class for you! Students will become familiar with use of basic photography, video camera, and computer based editing concepts common to the video editing industry. This hands-on course applies various presentation concepts through the development of projects which includes, but is not limited to: web sites, web movies, television productions, video editing and production. The course is designed

around the learning goals of the students and is project-based. Marketing core standards will be applied in Digital Media Marketing.

School Store Internship

1 credit-School Store Manager
Prerequisite: Entrepreneurship
In this course students will deepen their understanding of management, marketing and finance through the operation and management of the school store. This course is designed to assist students with developing skills needed to be successful leaders and responsible members of society. The student will develop personal attributes and social skills. Emphasis will be placed on interpersonal skills, team building, communication, personal development and leadership. This course will include opportunities for students to apply their knowledge and gain valuable work experience through the operation of the school store.

Business & Marketing Internship

1 credit
Prerequisite: Enrolled in 3rd or 4th Business/Mktng Pathway course or completer
11th-12th grade AND at least 16 years old
12th grade
The Business and Marketing Internship is designed to provide professional opportunities for students to explore careers the require degrees or certification following high school. The internship is tailored to the unique needs and interests of the student and is considered a pathway capstone experience. Students in this program are matched with a business mentor and learn marketing and business skills on the job. On-the-job training is offered for credit with classroom instruction related to student's business or marketing training station. This Internship combines
real-life work experience and business concepts. This experience provides job experience and valuable industry networking and knowledge. A training agreement outlines the expectations of all parties and students will follow state internship guidelines. Internships may be paid or unpaid and will include a classroom component at JCTC. Student must complete online Internship Application.
http://goo.gl/forms/hVBzQxzlLL
Internship times - 5th and 6th block.

ENGINEERING

<table>
<tr><th>Career Pathway</th><th>Required Courses</th><th>Elective Courses</th><th>Industry Certificates</th><th>CTE EOP Assessment</th></tr>
<tr><td>Civil Engineering</td><td>• Introduction to Engineering Design
• Principles of Engineering
• Civil Engineering & Architectural Design
• Engineering Capstone</td><td></td><td>REC Pre-Engineering
Autodesk Inventor</td><td></td></tr>
<tr><td>Electrical/Electronics Engineering</td><td>• Introduction to Engineering Design
• Principles of Engineering
• Digital Electronics
• Engineering Capstone</td><td></td><td>REC Pre-Engineering
Autodesk Inventor</td><td></td></tr>
<tr><td>Industrial/Mechanical Engineering</td><td>• Introduction to Engineering Design
• Principles of Engineering
<table><tr><th>Option 1</th><th>Option 2</th></tr><tr><td>• Automation & Adv. Manufacturing
AND
• Digital Electronics
OR
• Engineering Capstone</td><td>• Robotics Engineering
AND
• Engineering Capstone</td></tr></table></td><td></td><td>REC Pre-Engineering
REC Robotics
Autodesk Inventor</td><td></td></tr>
</table>

***Students must take 4 courses to complete a pathway. In Engineering, Introduction to Engineering and Principles of Engineering must be 2 of the 4. There is a cost associated with industry certification exams..*

ENGINEERING & TECHNOLOGY COURSE DESCRIPTIONS AND DETAILS

Intro to Engineering Design (IED)

1 credit
Prerequisite: Algebra I or currently enrolled
9th-12th grade
Yearlong Course
Students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and use an engineering notebook to document their work.

Principles of Engineering (POE)

1 credit
Prerequisite: Algebra I AND Geometry or currently enrolled
9th-12th grade
Yearlong Course
Through problems that engage and challenge, students explore a broad range of engineering topics, including mechanisms, the strength of structures and materials, and automation. Students develop skills in problem solving, research, and design while learning strategies for design process documentation, collaboration, and presentation.

Civil Engineering & Architectural Design (CEA)

1 credit
Prerequisites: IED and POE and Algebra II (or currently enrolled)
10th-12th grade
Yearlong Course
Students learn important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3D architecture design software.

Automation & Advanced Manufacturing

1 credit
Prerequisites: IED and POE and Algebra II (or currently enrolled)
10th-12th grade
Yearlong Course
Manufactured items are part of everyday life, yet most students have not been introduced to the high-tech, innovative nature of modern manufacturing. This course illuminates the opportunities related to understanding manufacturing. At the same time, it teaches students about manufacturing processes, product design, robotics, and automation. Students can earn a virtual manufacturing badge recognized by the National Manufacturing Badge system.

Digital Electronics (DE)

1 credit
Prerequisites: IED and POE and Algebra II (or currently enrolled)
10th-12th grade
Yearlong Course
From smart phones to appliances, digital circuits are all around us. This course provides a foundation for students who are interested in electrical engineering, electronics, or circuit design. Students study topics such as combinational and sequential logic and are exposed to circuit design tools used in industry, including logic gates, integrated circuits, and programmable logic devices.

Engineering Capstone

1 credit
Prerequisite: IED and POE plus one other Engineering Course
11th-12th grade
Yearlong Course
The knowledge and skills students acquire throughout PLTW Engineering come together in this capstone course as they identify an issue and then research, design, and test a solution, ultimately presenting their solution to a panel of engineers. Students apply the professional skills they have developed to document a design process to standards.

Robotics Engineering

1 credit
Prerequisites: IED and POE and Algebra II or enrolled
10th-12th grade
Yearlong Course
This course leverages the “coolness” of robotics, and the excitement of head to head competition to inspire and engage students. Students will apply the design process and build a mobile robot to play a sport-like game. During this process they will learn key STEM principles, programming, and robotics concepts.

FAMILY AND CONSUMER SCIENCES

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Consumer & Family Management	• FACS Essentials • Foods & Nutrition • Middle to Late Lifespan Dev. OR Parenting • Money Skills			Consumer & Family Management
Culinary & Food Services	• Foods & Nutrition • Adv. Foods & Nutrition • Culinary Arts I (2 credits) • Culinary Arts II (2 credits)		ProStart ServSafe	Culinary & Food Service
Early Childhood Education	• Parenting OR FACS Essentials • Early Lifespan Dev. • Child Development Services I • Child Development Services II	• Principles of Teaching (could be taken as a 5th course) • ECE-Work Based Learning	Commonwealth Childcare Credential (CCCC) Early Care Orientation Certificate Abusive Head Trauma Child Development Associate (CDA)	Early Childhood Education
Fashion & Interior Design	• FACS Essentials • Fashion & Interior Design I • Fashion & Interior Design II • Fashion & Interior Design III OR • Money Skills	• Fashion Entrepreneurship		Fashion & Interior Design
Food Science & Dietetics	• Foods & Nutrition • Advanced Foods & Nutrition • Nutritional Food Science AND/OR Fundamentals of Dietetics	• FACS Essentials • AP Chemistry OR AP Biology	Pre-PAC-Fundamentals of Food Science &/or Pre-PAC-Nutrition, Food & Wellness	
Fundamentals of Teaching	• FACS Essentials • Early Lifespan Development • Middle to Late Lifespan Dev. • Principles of Teaching		Pre-PAC Education Fundamentals	
Hospitality, Travel, Tourism & Recreation	• Principles of Hospitality • Principles of Marketing • Travel & Tourism Marketing • Specialized Svcs. in Hospitality	• Advanced Marketing • Foods • Advanced Foods • Entrepreneurship	Pre-PAC	Hospitality, Travel, Tourism & Recreation

Students must take 4 courses to complete a pathway. At least 3 must be **required courses. There is a cost associated with some industry certification exams.*

FAMILY AND CONSUMER SCIENCES COURSE DESCRIPTIONS AND DETAILS

FACS Essentials

1 credit
Prerequisite: None
8th-10th grade
Semester Course

This comprehensive course provides an opportunity for acquiring basic life skills and guides students to explore and select specific areas for concentrated study. Emphasis is on family, employability skills, adolescent development, introduction to textiles, interiors and design, financial management, challenges of parenting, establishing healthy relationships, and creating a foundation for healthy lifestyles and nutrition. Leadership development will be provided through the Family, Career and Community Leaders of America.

Early Lifespan Development

1 credit
Prerequisite: None
9-12 Grade
Semester Course

This course provides learning experiences that will enable the student to examine the developmental processes in children from conception to adolescence. In each stage of development, the student will explore physical, intellectual, and social/emotional needs of children. Students will also explore the challenges of parenthood. The topics of play, discipline, and child care will be included. This is an excellent class for students interested in careers that involve children.

Middle to Late Lifespan Development

1 credit
Prerequisite: Early Lifespan Development
10th-12th Grade
Semester Course
This course addresses the practical problems related to understanding the types and stages of human growth and development, recognizing effects of heredity and environment on the life stages, meeting the needs of exceptional children, promoting the growth and development in the early years, middle childhood, adolescent, and adulthood stages. Big projects include a pregnancy belly simulation and advanced reality baby project. Students will have the opportunity to complete a short field experience in elderly care.

Child Development Services I

1 credit
Prerequisite: Early Lifespan Development
11th-12th grade
Semester Course
This course provides training for entry-level positions in day care centers, nurseries, kindergartens, and private homes. Students study careers in child development, child guidance, children's health and well being in group care, value of play, teaching strategies and management, and curriculum development. The subject content is reinforced with work practicuum experience in an early childhood education setting.

Child Development Services II

1 credit
Prerequisite: Early Lifespan Dev. and Child Development Services I
11th-12th grade
Semester Double Blocked Course
This course is a continuation of Child Development Services I designed for students who wish to train for supervisory level positions or to further their education at the post secondary level in the area of childcare and development. Students will complete an early care orientation certification, including topics such as recommended practices and child abuse. Students will have the opportunity to work with children in the JCTC playschool lab.

Early Childhood Education Work Based Learning

1 credit
Prerequisite: Early Lifespan Dev., Child Development Svcs. I, Child Development Svcs. II
11th-12th grade
ECE Work-based Learning is a continuation of Child Development Services II. It is designed for students who have completed school-based preparation in early childhood education. Emphasis will be placed on pursuing a CDA (Child Development Associate) Credential, which includes but is not limited to, working with children and compiling an extensive portfolio. The course will provide opportunities to explore careers via workplace learning experiences. Students will develop useful skills and attitudes while learning about the world of work. They will explore real-life business situations and management procedures. Academic competencies needed to be successfully employed will be highlighted through the demonstration of workplace skills.

Parenting

1 credit
Prerequisite: None
9th-12th grade
Semester Course
This course is designed to aid students in developing parenting and care giving skills that can be applied in a variety of situations. Major topics include becoming an informed parent, understanding prenatal development, caring for the newborn, being an effective parent/caregiver, the health and safety of children, and exploring career opportunities in care giving. Students will complete a flour baby project and have the opportunity to take home a reality baby. Leadership development will be provided through the Family, Career and Community Leaders of America.

Money Skills for Math

1 credit
Prerequisite: 12th Grade Only (4th math credit)
Semester Course
This course is designed to provide students with math concepts needed in developing sound money management skills which will help to improve the quality of life for individuals and their families. Components of math, decision making and problem solving skills, goal setting and technology will be integral components of the course. A correlation to the math content in the program of studies was used in developing this course to count as a fourth math credit. Leadership development will be coordinated through Family, Career and Community Leaders of America student organization.

Fashion/Interior Design I

1 credit
Prerequisite: FACS Essentials
10th-12th grade
Semester Course
This course provides opportunities for students to develop career competencies in the fashion and/or interiors industry by applying information related to social, economic, and media influences. Students apply knowledge of design principles and processes through skill performance activities. Work experience will be explored and leadership development will be provided through Family, Career and Community Leaders of America.

Fashion/Interior Design II

1 credit
Prerequisite: Fashion & Interior Design I
11th-12th grade
Semester Course
This course provides opportunities for students to develop career competencies in the fashion and/or interiors industry. Practical problems include advanced textile construction techniques, and/or the creation of floor plans using current industry technology/resources. Entrepreneurial opportunities will be explored. Application of skills will occur in a variety of work sites. Leadership development will be provided through the Family, Career and Community Leaders of America.

Fashion/Interior Design III

1 credit
Prerequisite: Fashion & Interior Design II
11th-12th grade
Semester Course
This course is designed as an advanced course in the pathway for those students wanting to pursue a career in the field. Students will learn about careers and employability skills with in the industry. Marketing & merchandising concepts will be explored as well as operational procedures for a business within the field. Advanced construction techniques will be taught. Students will also run the student enterprise of our embroidery business throughout this course.

Fashion Entrepreneurship

1 credit
Prerequisite: Fashion & Interior Design III
11th-12th grade
Semester Course
This course provides opportunities for students to develop career competencies in the fashion industry through an entrepreneurship approach. Students will apply fashion skills of design principles and processes through performance. Students will learn entrepreneurship skills as they run a school-based business utilizing the industrial embroidery machine.

Foods & Nutrition

1 credit
Prerequisite: None
9th-12th grade
Semester Course
This course is designed to assist students in making critical decisions about food, which contributes to health and well-being. Laboratory instruction is included as an application process. Practical problems addressed relate to attitudes toward food, nutrition facts, special health concerns and diets, management of food resources, preparation skills, food safety, sanitation and careers in nutrition and food service. Leadership development will be provided through the Family, Career and Community Leaders of America.

Advanced Foods and Nutrition

1 credit
Prerequisite: Foods
10th-12th grade
Semester Course
This course is designed to assist students in principles related to food preparation. Specific content addressed will include planning, serving, food presentation, special diets, and nutrition for the lifespan, serving, and food planning for entertainment services. An emphasis on careers related to food service and nutrition (i.e. catering, dietician, and other culinary careers). Lab instruction emphasizes the application process. Leadership development will be provided through the Family, Career and Community Leaders of America (FCCLA) student organization.

Culinary I

1 credit
Prerequisite: Foods and Adv. Foods.
9th-12th grade
Semester Double Blocked Course
This advanced course allows students to increase competencies in a variety of food preparation techniques. Emphasis will be placed on food presentation, garnishing, menu planning and the skills necessary to prepare for a career in the culinary arts profession. Leadership development will be provided through the Family, Career and Community Leaders of America.

Culinary II

1 credit
Prerequisite: Culinary I
9th-12th grade
Semester Double Blocked Course
In this course, students resume progress in pursuing competencies in food production and services. Orientation to the food service industry and development of food preparation skills are reinforced. Food service management functions are introduced. More in-depth information is provided and higher levels of skills are taught. Time is provided for work based learning opportunities. Leadership development will be provided through the Family, Career and Community Leaders of America.

Nutritional Food Science

1 credit
Prerequisite: Foods
11th-12th grade
Semester Course
Nutritional Science is an interdisciplinary course that has a variety of applications to everyday life. Much of the study and work in this course is directed toward providing students with knowledge of nutrition concepts and the various relationships between nutrition and science. Scientific methods are used to conduct laboratory experiments with food. Students explore career possibilities in science, nutrition, microbiology, family and consumer sciences, dietetics and various research specialties. Leadership development will be provided through the Family, Career and Community Leaders of America (FCCLA) student organization.

Fundamentals of Dietetics

1 credit
Pre-requisite: Foods
11th-12th grade
Semester Course
This course is designed to assist advanced foods and culinary students in making critical dietary decisions about food, health and well-being. The course will focus on: the influence of scientific and technical advances in nutrition, food and wellness; structure and function of nutrients; industry food safety, management skills, ethics and career opportunities. Practical workplace problems will be addressed and analyzed using scientific and technical knowledge. Laboratory instructions are included as an application process through food preparation. Workplace experience will be included and leadership development will be provided through Family, Career and Community Leaders of America.

Principles of Teaching I

1 credit
Prerequisite: Early Lifespan Dev.
11th-12th grade
Semester Course
This course is designed to prepare students for a career in education. Students will explore all of the teaching standards recognized by the department of education. A portfolio is required of each student and a college text is used. A minimum of 15 hours of observation time is required, including observations at the elementary, middle, and high school level.

Principles of Hospitality

1 credit
Prerequisite: Foods AND Advanced Foods
11th-12th grade
Semester Course
This course is designed for students interested in careers in the hospitality industry. The instruction includes career awareness in the areas of recreation, travel/tourism, hotel/motel, and restaurant. This course is based on the family and consumer sciences core that includes communication skills, economics, food and beverage operations, promotion, selling, and product/service management. Leadership development will be provided through FCCLA activities and competitive events.

Specialized Services in Hospitality

1 credit
Prerequisite: Foods AND Advanced Foods
11th-12th grade
Semester Course
This course is designed to provide training in specialized services within the hospitality field. Job and career opportunities will be explored. Instruction will include skill development and practice. Shadowing and work experiences in a variety of commercial establishments such as hotels and motels will be included. Leadership development will be provided through the Family, Career and Community Leaders of America (FCCLA) student organization.

HEALTH SCIENCES

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Allied Health	• Principles of Health Science • Emergency Procedures • Medical Terminology • Medical Math OR Allied Health Core Skills		NOCTI-Healthcare Core	
Pre-Nursing	• Principles of Health Science • Emergency Procedures • Medical Terminology • Medicaid Nurse Aide	• Medical Math	State Registered Nurse Aide	
Phlebotomy Technician	• Principles of Health Science • Emergency Procedures • Medical Terminology • Medical Laboratory Aide (Phlebotomist)	• Medical Math	Certified Phlebotomy Tech.	

Students must take 4 courses to complete a pathway. At least 3 must be **required courses. There is a cost associated with industry certification exams.*

HEALTH SCIENCES COURSE DESCRIPTIONS AND DETAILS

Principles of Health Sciences

1 credit
Prerequisite: None
9th-12th grade
Semester Course
Principles of Health Sciences is generally the first course in the Health Science program. This course provides a foundation of core knowledge common to all health careers. The students will be able to build upon this knowledge as progress is made toward the next step in developing skills. The course will provide reliable and realistic information about health science careers and will enable the student to make informed decisions about career choices, the workplace, and post-secondary opportunities. Field trips to and/or guest speakers from various health care fields will be used to enhance learning.

Emergency Procedures

1 credit
Prerequisite: Principles of Health Science
10th-12th grade
Semester Course
This course will focus on potential emergency situations. It is designed to promote an understanding of standard precautions necessary for personal and professional health maintenance and infection control. Upon successful completion of the course, the student will demonstrate the necessary skills in First Aid and Cardiopulmonary Resuscitation (CPR) and will be given the opportunity to take the completion examination as outlined by the sponsoring agency.

Medical Terminology

1 credit
Prerequisite: Principles of Health Science
10th-12th grade
Semester Course
This course is designed to develop a working knowledge of language in all health science major areas. Students acquire word-building skills by learning prefixes, suffixes, roots and abbreviations. Students will learn correct pronunciation, spelling and application rules. By relating terms to body systems, students identify proper use of words in a medical environment. Knowledge of medical terminology enhances the student's ability to successfully secure employment or pursue advanced education in health care.

Medicaid Nurse Aide

2 credits
Prerequisite: Principles of Health, Medical Terminology AND Emergency Procedures: Application Required at http://bit.ly/1oEL8HO
11th-12th grade
Insurance fee: $15
Testing Fee: $50
Seniors receive preferential placement
Semester Double Blocked Course
The Medicaid Nurse Aide program consists of classroom instruction and clinical experience. The program is a minimum of 75 hours with 16 of these hours in the clinical setting. Classroom instruction provides the students with the knowledge and skills required to care for individuals in a long-term care facility/acute care facility. Instruction focuses on communication, infection control, safety, residents' rights and basic nursing skills. The clinical experience allows the students to assume the role of a nurse aide and apply knowledge and skills learned in the classroom setting. Students should complete the Principles of Health Science and Emergency Procedures prior to taking this course. This program meets the requirements set forth by the Kentucky Medicaid Program and provides the opportunity for students to become State Registered Nurse Aide.

Medical Math

1 credit
Prerequisite: 12th grade (4th Math Credit)
Semester Course
This course is designed to focus, utilize and build on mathematical skills commonly used in all health occupations. Students will use applied techniques, problem-solving and critical thinking to perform mathematical operations such as computations, ratio and proportion, weights and measurements and conversions. This course is strongly recommended for all Health Science majors. Successful completion of Algebra I is suggested prior to enrolling in this course. This course may meet the requirements for the fourth elective mathematics credit required for graduation with an allied health major.

Allied Health Core Skills

1 credit
Prerequisite: Emergency Procedures AND Medical Terminology
11th-12th grade
Semester Course
Allied Health Core Skills is designed to provide knowledge, concepts and psychomotor skills necessary for gainful employment as an entry-level health care worker. Assisting students in selecting a career major, classroom instruction and educational objectives are combined with learning experiences, observations, and a work-based learning opportunity such as internship, shadowing, or clinical rotation. This course is

designed for students not enrolled in the Medic-aid Nurse Aide program.

Medical Laboratory Aide (Phlebotomist)

1 credit
Prerequisite: Emergency Procedures AND Medical Terminology plus Application at http://bit.ly/1oEL8HO
12th grade
Semester Double Blocked Course

The internship provides supervised on-the-job work experience related to the students' education objectives in the area of Medical Laboratory Aide/Phlebotomist. Students participating in internship for CTE courses provide supervised work-site experience for high school students who are enrolled in a capstone course associated with their identified career pathway. Internship experiences consist of a combination of classroom instruction and field experiences. Work-based learning is designed to complement the classroom instruction. Students will be required to follow program and agency requirements for attendance and health screenings. These may include but are not limited to: drug screens, TB skin test, and immunization certificates. A Memorandum of Agreement must be completed for all clinical sites. The clinical portion of this course requires 100 hours of experience within a hospital lab, clinical lab, or physician's office. Students must complete a minimum of 30 successful unaided venipuncture collections (or minimum requirement of the clinical site) and 10 successful unaided capillary collections.

INFORMATION TECHNOLOGY

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Web Development & Administration	• Computer Core I • Computer Graphics • Web Design • Adv. Web Design	• Programming	Certiport Digital Literacy IC3 MTA: HTML5 App. Dev. Fundamentals	Web Development/ Administration
Digital Design & Game Development	• Game Design I • Game Design II • Game Design III OR Programming • Game Design IV		Unity (Pilot)	Digital Design & Game Development
Information Support & Services	• Computer Hardware Maintenance • Computer Software Maintenance • Help Desk I • Help Desk II		Choose 2: MTA: Windows Operating System Fund. MTA: Mobility & Device Fund. MTA: Cloud Fund.	Information Support & Services
Computer Programming	• Computer Core I • Programming • C++ • Python		Certiport Digital Literacy IC3 MTA: Intro to Programming using Python	Computer Programming
Network Administration	• Computer Hardware Maintenance • Computer Software Maintenance • Programming • Networking		Choose 2: MTA: Windows Operating System Fund. MTA: Mobility & Device Fund. MTA: Cloud Fund. MTA: Network Fund.	Network Administration

**Students must take 4 courses to complete a pathway. There is a cost associated with some industry certification exams.*

INFORMATION TECHNOLOGY COURSE DESCRIPTIONS AND DETAILS

Computer Core I

1 credit
Prerequisite: None
9th – 12th grade
Semester Course
Students will study computer hardware, operating systems, and functions of multiple computer programs. Students will use computer and application software including word processing, presentation, database, spreadsheets, and the Internet to prepare documents and reports. The impact of computers on society and ethical issues are also presented.

Computer Graphics

1 credit
Prerequisite: Computer Core I or passing score on 8th grade tech assessment
9th – 12th grade
Semester Course
Students will learn design principles and the required software for electronic publishing. The course will focus on electronic image manipulation, page layout, and web page design. The software used in the class will include software from the Adobe Suite along with free software options.

Web Design

1 credit
Prerequisite: Computer Core I and/or Computer Graphics
9th – 12th grade
Semester Course
Students analyze the structure of the World Wide-Web, by basic principles of web document and HTML, and develop multi-media web pages. Course content will include the understanding of hypertext and web structures. Students learn to use web page development software to create or change web pages, insert-

ing text content, graphics and interactive modules. They also learn to use research software tools to help design the look, feel and navigation of a web page. Web page update and work with the hardware associated with the web page is also emphasized.

Advanced Web Design

1 credit
Prerequisite: Computer Graphics AND Web Design
Semester Course
Students analyze the structure of the worldwide web, using various languages including JavaScript, CSS, HTML - HTML5, and develop multimedia web pages. Course content will include the understanding of hypertext and web structures. Students learn to use web page development software to create or change web pages, inserting text content, graphics and interactive modules.

Game Design I

1 credit
Prerequisite: None
Semester Course
This course is an introduction to Game Design. The course provides an overview of story development, gaming history, game reviews, current gaming trends and industry software. Students will begin to create and develop a game story/plot that can be further developed in higher level courses as well as critique current games. Students will then explore image manipulation and 2D game development software. In addition, students will learn the fundamentals of programming.

Game Design II

1 credit
Prerequisite: Game Design I or taken concurrently
Semester Course
This course will focus on creating games using code, animation, and an introduction to 3d design software utilized in the industry. In addition, students will see how the skills and knowledge acquired in Game Design I & II come together utilizing a game engine.

Game Design III

1 credit
Prerequisites: Game Design I & II
Semester Course
Emphasizes creating 3D graphics using one or more state-of-the-art software packages. Provides students with a thorough understanding of techniques for designing advanced 3D games and simulations. Courses will cover 2D and 3D graphics, animation, character development, texturing, rigging, scripting and game setup using state-of-the-art software development tools.

Game Design IV

1 credit
Prerequisites: Game Design I, II and III (or Programming may substitute for III)
Semester Course
This course will focus on creating games using code, 3d characters, objects, and animation utilizing game engines. Students will see how the skills and knowledge acquired in Game Design I - III come together. Students will create work ready products for the industry.

Computer Hardware Maintenance

1 credit
Prerequisite: None
9th-12th grade
Semester Course
Course Description: The Computer Troubleshooting Hardware course will primarily focus on installing, maintaining and troubleshooting computer hardware. In addition, the students will gain the knowledge\experience to purchase hardware and build a computer from the ground up. The course will also offer real world experience by giving the students the opportunity to maintain the technology at JCTC. The course follows the Comp TIA A+ curriculum and will prepare students for the A+ certification. The Comp TIA A+ certification is the industry standard for validating vendor-neutral skills expected of an entry-level computer technician. Those holding the A+ certification have a broad base of knowledge and competency in core hardware and operating system technologies including power supplies, form factors, processors, motherboards, memory, hard drives, expansion cards, multimedia hardware, printers, laptops and basic networking.

Computer Software Maintenance

1 credit
Prerequisite: Computer Hardware Maintenance
9th-12th grade
Semester Course
Course Description: The Computer Troubleshooting Software course will primarily focus on installing, maintaining and troubleshooting computer software. In addition, the students will gain the knowledge\experience to purchase software and install numerous operating systems. The course will also offer real world experience by giving the students the opportunity to maintain the technology at JCTC. The course follows the Comp TIA A+ curriculum and will prepare students for the A+ certification. The Comp TIA A+ certification is the industry standard for validating vendor-neutral skills expected of an entry-level computer technician. Those holding the A+ certification have a broad base of knowledge and competency in core software and operating system technologies including installing & maintaining windows 95-Windows 7, open source software, Linux, MAC operating systems, multimedia resources, the internet, printers, diagnosing, preventative maintenance, and basic networking.

Help Desk I

1 credit
Prerequisite: Computer Hardware & Software Maintenance
(10th-12th grade)
Semester Course
Course Description: This course provides an in-depth look at the process associated technologies available for customer service and support in a technical or non-technical environment. It focuses on the technology, tools and techniques involved in how to run an effective help desk. Students will look at the many software options available for tracking and managing data. Course includes hands-on, real-world projects using current help desk software.

Help Desk II

1 credit
Prerequisite: Computer Hardware and Software Maintenance and Help Desk I
(10th-12th grade)
Semester Course
Course Description: This is a continuation of Help Desk I. This course provides an in-depth look at the process associated technologies available for customer service and support in a technical or non-technical environment. It focuses on the technology, tools and techniques involved in how to run an effective help desk. Students will look at the many software options available for tracking and managing data. Course includes hands-on, real-world projects using current help desk software.

Networking

Dual Credit Course throgh Morehead State University
1 credit high school/3 credits college
Prerequisite: Computer Hardware & Software Maintenance and Help Desk
(11th-12th grade)
Semester Cours
Course Description: Knowing how to install, configure, and troubleshoot a computer network is a highly marketable skill. This course first introduces the fundamental building blocks that form a modern network, such as protocols, topologies, hardware, and network operating

systems. It then provides in-depth coverage of the most important concepts in contemporary networking, such as TCP/IP, Ethernet, wireless transmission, and security. The course will prepare you to select the best network design, hardware, and software for your environment. You will also have the skills to build a network from scratch and maintain, upgrade, and troubleshoot an existing network. Finally, you will be prepared to pass MTA Network certification exam. In order to be eligible for dual credit, students must meet Morehead State University's admission requirements of a 3.0 GPA and ACT Composite score of 18.
*Students may opt to take this course for high school credit only.

Programming

1 credit
Prerequisite: Programming Pathway-Computer Core I; Gaming Pathway-Game Design I & II; Web Development Pathway-Web Design; Network Administration Pathway-Information Support I & II
(10th-12th grade)
Semester Course
Course Description: This introductory programming course is based on the UC Berkeley CS10 course and offers students a hands-on introduction to computer science that surrounds us every day. The course is far more than just learning to program. We'll focus on some of the "Big Ideas" in computing, such as abstraction, design, recursion, concurrency, simulation, and the limits of computation. We'll show some beautiful applications of computing that have changed the world, talk about the history of computing, and where it will go in the future. Students taking this course are expected to have successfully completed Algebra II.

Programming with C++

1 credit
Prerequisite: Programming AND Algebra II or currently enrolled
(10th-12th grade)
Semester Course
Course Description: Programming with C++ is a one-semester course in C++ programming language for students who are interested in expanding their knowledge of computer science. It emphasizes the problem solving using algorithms and C++ data structures. This course is built around a series of computer "problems" that can be solved by creating original applications in the C++ programming language.

Python

1 credit
Prerequisites: Computer Core 1, Intro to Programming, and C++
(10th-12th grade)
Semester Course
Course Description: Python is a one-semester course for students who are interested in expanding their knowledge of computer science. It emphasizes the problem solving process with the Python language. This course is built around a series of computer "problems" that can be solved by creating original applications in the Python programming language.

LAW & PUBLIC SERVICES

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Emergency Medical Technician	• Principles of Health Science • Emergency Procedures • Medical Terminology • Emergency Medical Technician (EMT)	• Medical Math (only as 5th course)	EMT Basic-State/National Certification, CPR, NIMS, HIV/BBP	
Pre-Law	1st & 2nd Course (in any order) • Intro to Law • Criminal Law & Procedure 3rd & 4th Course (in any order) • CRJ 100 Intro to Criminal Justice • CRJ 204 Criminal Investigations	• Trial Advocacy(Mock Trial Specialization) • Adv. Law & Order (Mock Trial Specialization)(Dual Credit is optional) • Pre-Law Internship	NOCTI-Criminal Justice Advanced	
Military Leadership	• Military Leadership I • Military Leadership II • Military Leadership III • Military Leadership IV		TBA	
Fire Science	• Fire Academy I • Fire Academy II		FEMA Certification Series through NIMS IS700a, IS100b, IS200b, ICS300 150 hours toward Kentucky Certified Firefighter (age restricted)	

Students must take 4 courses to complete a pathway. At least 3 must be **required courses. There is a cost associated with industry certification exams.*

PUBLIC SERVICES COURSE DESCRIPTIONS AND DETAILS

Intro to Law

1 credit
Prerequisite: None
9th-12th grade
Semester Course
This course provides an overview of the legal system. Topics include crime types, crime levels-(including classes and degrees), civil vs criminal law, criminal statutes, criminal defenses, arraignments, preliminary hearings, grand jury hearings, bail, plea agreements, discovery, federal vs state law, the state court system, the federal court system, appeals, precedent, motions, jury selection, jury deliberations, sentencing, probation and parole, and more.
*Articulated Credit from EKU or BCTC is possible for students who complete this course with a B or higher (students must attend the college for a full semester to receive the articulated credit)

Criminal Law & Procedure

1 credit
Prerequisite: None
9th-12th grade
Semester Course
This course provides an overview of criminal law, both substantive and procedural. Topics include 4th amendment search and seizure, 4th amendment exceptions, warrants, automobile stops, arrests, stop & frisks, force, criminal statutes, Miranda law, 6th amendment trial rights, 5th amendment self-incrimination, due process, and more.
*Articulated Credit from EKU or BCTC is possible for students who complete this course with a B or higher (students must attend the college for a full semester to receive the articulated credit)

CRJ 100 Introduction to Criminal Justice

1 high school credit/ 3 College Credit Hours
Prerequisite: Introduction to Law AND Criminal Law and Procedure; GPA of 2.5; ACT reading section score of 20; Textbook fee-(*textbook fee may be waived for students with Free or Reduced Lunch)
11th-12th grade
Semester Course
The college course description reads in part: "This course provides an introduction to the philosophical and historical background of agencies of the criminal justice systems, processes, purposes and functions. Includes an evaluation of the criminal justice system today, including trends and career orientation" *Please see BCTC's syllabus for more information about this course

CRJ 204 Criminal Investigation

1 high school credit/ 3 College Credit Hours
Prerequisite: Introduction to Law AND Criminal Law and Procedure; GPA of 2.5; ACT reading section score of 20; Textbook fee-(*textbook fee may be waived for students with Free or Reduced Lunch)
11th-12th grade
Semester Course
The college course description reads in part: "This course provides the fundamentals of crime scene investigations, which includes searching and recording of the scene, collection and preservation of physical evidence, interviews and interrogation of victims, witnesses, and suspects, report writing and case preparation." *Please see BCTC's syllabus for more information about this course

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Trial Advocacy

1 credit
Prerequisite: Intro to Law, Criminal Law & Procedure, and teacher approval
10th-12th grade
Semester Course
This course provides an overview of the trial process and trial presentation. Topics include opening statements, direct examinations, cross examinations, impeaching witnesses, refreshing a witness's recollection, introducing evidence, objections, hearsay evidence, character evidence, closing arguments, courtroom decorum, trial presentation, pre-trial issues, mock trial rules, and more. Students will draft cases with their classmates based on evidence and witness statements provided in class. Students will argue their cases against opposing teams within their class and teams from other schools.

Advanced Law and Order

1 credit
Prerequisite: Intro to Law, Criminal Law & Procedure, Trial Advocacy, and teacher approval
10th-12th grade
Semester Course
This course trains students in advanced trial presentation and is only for students who desire to enhance their understanding of courtroom law. Skills taught in the Trial Advocacy course will be covered in more depth and trial delivery expectations are very rigorous. Students are expected to deliver a case with the skill level of a real attorney. Students are expected to demonstrate all skills required for presenting a criminal trial, including perfect witness examination skills, evidence introduction, making and responding to objections, witness impeachment, and more. Students will draft cases with their classmates based on evidence and witness statements provided in class. Students will argue their cases against opposing teams within their class and teams from other schools.
Students who complete this course with high mastery scores will have the opportunity to apply for the Law Internship course.

Pre-Law Internship

1 credit
Prerequisite: Intro to Law, Criminal Law & Procedure, and teacher approval
11th-12th grade
The Law internship provides students real world legal experience in a professional environment. The goal is for students to gain a well-rounded understanding of what legal professionals do on a day-to-day basis, as well as what skills and knowledge are required to excel in the legal field. During the internship, student interns may work with an attorney, paralegal, legal assistant, court clerk, and/or law enforcement officer.
*Student transportation required
*Completion of a signed internship contract and adherence to all contract terms is required
*Interns do not receive compensation

Emergency Medical Technician-EMT

AC (Articulated Credit) Course Associated with EKU
2 high school credits/3 hours college credit
Seniors Only (must be 18 years of age to test): Application Required at http://bit.ly/1oEL8HO
Fees: Kentucky Board of EMS
$30.00 (Certification Fee)
Kentucky Board of EMS
$10.00 (Application Fee)
National Registry of EMTs
$70.00 (Testing Fee)
Prerequisite: Principles of Health or instructor approval
Yearlong Double Blocked Course
EMT candidates will become familiar in the detailed aspects of emergency medical care. This course is divided into 7 modules of instruction, including preparatory, patient assessment, airway, medical/behavioral emergencies, trauma emergencies, infants and children and EMS operations. An elective model in advanced airway is an addition to this course. This course is designed to prepare the student for national certification board examinations as well as "true to life" patient care. This course consists of 145 hours of lecture and "hands on" skill labs (this does not include any internship with active EMS units assessing and treating injured or ill patients during the certification). Candidates who successfully complete all portions of this course will sit for national boards in the attempt to obtain National Registry and Kentucky State

certifications. In order to fulfill the Kentucky and National Standards, this course will retain the option of conducting Saturday classes. It is the utmost of importance that candidates attend all classes. The issue of missing class will hinder the candidate's ability to comply with national standards. Enrollment and certification requirements are listed in 202 KAR 7:301 Sections (1) and (2).

Military Leadership I

1 credit
Prerequisite: None
9th-12th grade
Semester Double Blocked Course
This is the first course in a four course sequence that provides instruction on wear of the military uniform, military customs and courtesies, the National Anthem, the American flag and the purpose of JROTC.

Military Leadership II

1 credit
Prerequisite: Military Leadership I
9th-12th grade
Semester Double Blocked Course
This is the second course in a four course sequence that focus on the principles of leadership and marching also known as Drill and Ceremonies.

Military Leadership III

1 credit
Prerequisite: Military Leadership II
9th-12th grade
Semester Double Blocked Course
This is the third course in a four course sequence that develop study skills, communication skills, and conflict resolution.

Military Leadership IV

1 credit
Prerequisite: Military Leadership III
9th-12th grade
Semester Double Blocked Course
This is the fourth course in a four course sequence that will discuss diet, exercise, and drug awareness and introduces cadets to first aid.

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*Fire Science Academy Part I-Fundamentals of Fire Fighting

2 credits - 2 blocks - Fall Semester
11th-12 grade: Application Required at http://bit.ly/1oEL8HO
Semester Double Blocked Course
This class is held during 1st and 2nd blocks of the Fall Semester only and is required to enroll in Advanced Fundamentals of Fire Fighting in the spring. This course focuses on fundamentals of Fire Fighting and basic introductory skills. Students will have the opportunity to earn the following industry certificates: NIMS 100b and Haz-whopper.

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*Fire Science Academy Part II-Advanced Fire Fighting

2 credits - 2 blocks - Spring Semester
Prerequisite: Fire Science I
11th-12th grade: Application Required at http://bit.ly/1oEL8HO
Semester Double Blocked Course
This class is held during 1st and 2 blocks of the spring semester. Advanced Fire Fighting will enhance fire service knowledge and advance Fire Fighter skills and abilities of the student. Testing on curriculum and skill drills will be expected in order to complete this class. Industry certificate opportunities: NIMS 200 b, CPR & AED, Hazmat Awareness. The curriculum is NFPA and IAFC approved, preparing the student for the State Fire Commission Fire Fighter I certification provided the student completes required testing upon the age of 18.
**These courses should be taken consecutively in the same school year. Industry certifications are subject to change based on KY Fire Commission recommendations.*

TRANSPORTATION

Career Pathway	Required Courses	Elective Courses	Industry Certificates	CTE EOP Assessment
Diesel Mechanics	Year One: • Diesel Medium/Heavy Duty Truck Inspection, Maintenance, and Minor Repair (IMMR) Sections A-D Year Two: • Diesel Medium/Heavy Truck Service Technology (TST) Sections A-D	Diesel Internship	ASE Entry-level Certification	

TRANSPORTATION COURSE DESCRIPTIONS AND DETAILS

Diesel Medium/Heavy Duty Truck Inspection, Maintenance, and Minor Repair (IMMR Sections A-D)

4 credits - 2 blocks – Fall and Spring Semester
Prerequisite: None
11th-12th grade: Application Required at *http://bit.ly/2EG4Gru*

Yearlong Double Blocked Course
This program introduces the student to the tasks/standards included in Inspection, Maintenance, and Minor Repair. The tasks included in the Inspection, Maintenance, and Minor Repair option are entry-level technician inspection tasks designed to introduce the student to correct procedures and practices of vehicle inspection in a teaching/learning environment. These courses will instruct the student in the principles, theories, and concepts of Medium/Heavy Duty Diesel Truck Technology, and include instruction of Diesel Engines, Brake Systems, Electrical/Electronic Systems, Suspension and Steering Systems, Drivetrains, Preventive Maintenance, and Engine Performance Systems.
**These courses should be taken consecutively in the same school year.*

Diesel Medium/Heavy Duty Truck Service Technology (TST Sections A-D)

4 credits - 2 blocks – Fall and Spring Semester
Prerequisite: Successful Completion of IMMR A-D
11th-12th grade: Application Required at *http://bit.ly/2EG4Gru*

Yearlong Double Blocked Course
This program presents the theory, component identification, operation, diagnosis, and the service and repair of Medium/Heavy Duty Truck Diesel Engines, Brake Systems, Electrical/Electronic Systems, Suspension and Steering Systems, Drivetrain Systems, Engine Performance Systems, and Preventive Maintenance. The instruction will also include identification and use of appropriate tools and testing/measurement equipment required to accomplish certain tasks. The student will also locate and use current reference and training materials from accepted industry publications and resources, and write industry standard work orders.
**These courses should be taken consecutively in the same school year. http://bit.ly/2EG4Gru*

OTHER OFFERINGS AT JCTC

College & Career Readiness- CCR

One graded credit for curricular portion of the course and up to two additional Pass/ Fail credits for approved work experience.
12th grade students ONLY.
Yearlong Course
Now available as an online course, students enrolled are required to attend a mandatory orientation meeting outlining requirements and procedures for the course. The meeting is held within the first full week of the semester. College & Career Readiness is required for those students enrolled in work block/ work based learning. Topics covered include analysis of various work related issues, development of resumes, cover letters and interviewing techniques. Studies include how personality and learning style affect career choice. Methods of college selection, admission and affordability are also explored. Lessons providing financial literacy, virtue and character are also weaved throughout the course. College visits to most regional universities are available to interested students.

TYPES OF CREDIT:

DC (Dual Credit) - A course which counts as both a high school and college credit. The course may be aligned with Asbury University, BCTC, EKU, Kentucky State, Murray State, or other colleges/universities. Upon successful completion of the course, the student will have college credit which, in most cases, can be transferred to other institutions of higher learning if they choose not to attend the college/university that provided the course.

AC (Articulated Credit) – A course which will count as college credit if the student enrolls as a full time student at the college/university that provided the course. The student will receive high school credit as well for the course.