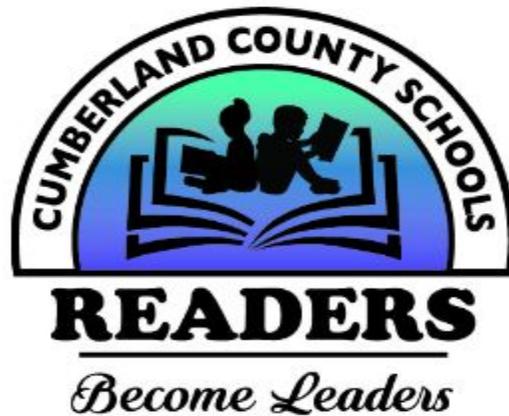# CUMBERLAND COUNTY SCHOOLS
Career & Technical Education
COURSE CATALOG 2017-2018

It is important that you plan wisely. The choices you make during registration will determine your classes next year. Each course request you make is a factor when school officials set budgets for educational needs. Schedule changes will be made based only on graduation requirements or on post-secondary school admission requirements. These changes must be made within ten days of the beginning of each semester.

GRADUATION REQUIREMENTS

English   **4 Credits**
                       English I- 1 credit
                       English II- 1 credit
                       English III- 1 credit
                       English IV- 1 credit

Mathematics   **4 Credits**
                       Algebra I- 1 credit
                       Algebra II- 1 credit
                       Geometry- 1 credit
                       Math (see options in catalog)- 1 credit

Science   **3 Credits**
                       Lab Science (see options in catalog)- 1 credit
                       Biology- 1 credit
                       Chemistry- 1 credit

Social Studies   **3.5 Credits**
                       World History- 1 credit
                       US History- 1 credit
                       Economics- .5
                       Personal Finance- .5
                       US Government- .5

Health &   **1.5 Credits**
Physical Fitness   Lifetime Wellness- 1 Credit
                       Physical Education- .5 Credit

Foreign Language   2 Credits* (same language)

Fine Arts: 1 Credit* (see options)

Program of Study   3 Credits in one area

Additional Electives: Number varies

*May be waived for students to expand program of study.

Total number of credits needed to graduate from CCHS or SMHS is 27 credits.

COURSE DESCRIPTIONS Career & Technical Education

ADVANCED MANUFACTURING

Principles of Manufacturing

This course is designed to provide students with exposure to various occupations and pathways in the Advanced Manufacturing career cluster, such as Machining Technology, Electromechanical Technology, Mechatronics, and Welding. Content covers basic quality principles and processes, blueprints and schematics, and systems.

TCAT Electromechanical Technology I, II

Electronic Technicians apply electronic theory, principles of electrical circuits, electrical testing procedures, engineering math and physics. These concepts and related knowledge are used to lay out, build, test, troubleshoot, repair and modify development and production electronic equipment. This course is for Dual Enrollment.

TCAT Machining Technology I, II

The work of machine tool operators, machinists, tool and die makers, industrial maintenance personnel and those in related occupations requires skill in machining metal by such machine tools as milling machines, lathes, grinders, drill presses, CNC milling machines, EDM machines and the ability to use precision measuring tools. The course in machine shop is designed to give students experience on a variety of machine tools similar to those on which they will work after graduation. Instruction is given in related blueprint reading and math, precision measuring, and such basic metallurgy as properties of metals, their workable characteristics, best treatment of metals, and relative hardness. This course is for Dual Enrollment.

TCAT Mechatronics I, II

This program of study is designed for students Interested in becoming a Mechatronics Technician, Mechanical Engineering Technician, Robotics Technician, or Mechatronics Engineer. Course content focused on the components of manufacturing systems, collection and analysis of quality data, electronics, mechanics, fluid power systems, computers and control systems, industrial robotics and their programming along with technical documentation and troubleshooting. This course is for Dual Enrollment.

TCAT Welding I, II

The student will be involved in welding theory, blueprint reading and welding safety. In the shop, the student will be involved in all phases of the welding field. Learning to weld in all positions (flat, horizontal, vertical, and overhead). This includes aluminum, mild steel, stainless steel, pipe and sheet. This course is for Dual Enrollment.

Industry Certifications Advanced Manufacturing

NIMS Certification
Product Certification
Siemens Certification

AGRICULTURE, FOOD & NATURAL RESOURCES

AGRICULTURE, FOOD, & NATURAL RESOURCES

Agriculture Power & Equipment

This is an applied course in agricultural engineering with special emphasis on laboratory activities involving small engines, tractors, and agricultural equipment. The standards in this course address navigation, maintenance, repair, and overhaul of electrical motors, hydraulic systems, and fuel powered engines as well as exploration of a wide range of careers in agricultural mechanics.

Agriscience

Agriscience consists of standards that prepare students for biology, subsequent science courses and post- secondary pursuits. The content area includes ecology, biological processes, sexual and asexual reproduction and a study of the chemical and physical laws that govern life processes. This course helps students understand the important role of the agricultural science industry moves in the 21st century.

Agriscience-Honors

Agriscience consists of standards that prepare students for biology, subsequent science courses and post- secondary pursuits. The content area includes ecology, biological processes, sexual and asexual reproduction and a study of the chemical and physical laws that govern life processes. This course helps students understand the important role of the agricultural science in the 21st century.

*Either class (Agriscience or Agriscience- Honors) count towards the first class for any Program of Study within this field

Greenhouse Management

Greenhouse Management is an applied-knowledge course designed to prepare students to manage greenhouse operations. This course covers principles of greenhouse structures, plant health and growth, growing media, greenhouse crop selection and propagation, and management techniques. It provides students with the technical knowledge and skills needed to prepare for further education and careers in horticulture production.

Introduction to Plant Science

This class is taught for Dual Credit. Topics covered will include plant anatomy & physiology, reproduction, pest management, plant nutrition and culture, cropping and growing systems. Greenhouse growing structure, human relations and personnel management.

Landscape and Turf Science

The course is designed to provide challenging academic standards and relevant technical knowledge and skills needed for further education and careers in landscape design, floral design, and turf grass management. Content includes site analysis and planning, principles of design, and plant selection and care techniques.

Large Animal Science

This is an applied course in veterinary and animal science for students interested in learning more about becoming a veterinarian, vet tech, vet assistant, or pursuing a variety of scientific, health, or agriculture professions.

Organizational Leadership & Communications

Organizational Leadership and Communications is an applied-knowledge course for students interested in learning more about the attributes and skills of successful leaders in the agriculture industry. This course covers organizational behavior, communication, management, and leadership topics. Students participate in activities that will assist them in the development of communication and interpersonal skills transferrable to any agribusiness application.

Principles of Agriculture Mechanics

This is an intermediate course introducing students to basic skills and knowledge in construction and land management. Topics include project management, basic engine and motor mechanics, land surveying, irrigation and drainage, agriculture structures, and basic metalworking techniques.

Small Animal Science

Small Animal Care contains objectives to prepare students for careers in managing and caring for specialty and companion animals. As our population

raises more specialty and companion animals for production purposes and personal value, careers that work with these animals in a safe environment will continue to expand.

Supervised Agriculture Experience
A *Supervised Agricultural Experience* (SAE) is a structured experiential learning opportunity that takes place in a setting outside of regular school hours. Individual LEAs can choose whether or not to offer credit, provided participating students demonstrate mastery of the standards outlined below. SAEs allow students to experience the diversity of agriculture and natural resources industries and to gain exposure to agricultural-related career pathways. SAEs require a documented formal project scope, accurate recordkeeping, and student advisor supervision.

Veterinary Science
Veterinary Science challenges students to use advanced technologies and medical treatments to maintain the health of animals. The animal health industry continues to grow in importance and prominence as more people purchase animals for pleasure and sustenance.

Industry Certifications in Agriculture
Commercial Pesticide Certification
Animal Science Certification

ARCHITECTURE & CONSTRUCTION
Architecture & Carpentry Program of Study

Fundamentals of Construction
This course, is a prerequisite for the Construction Trades. It will provide a basic introduction to the construction industry. Course content includes leadership development, safety, math related to the construction trades, hand- tool and power-tool operation, blueprint reading, and rigging. The emphasis of this entry-level course is on identification and recognition.

Residential Commercial Construction I
Prerequisites: Fundamentals of Construction

This course will introduce students to basic skills and knowledge related to residential and commercial carpentry. Topics covered include wood, metal, and concrete building materials; fasteners; hand and power tools; fabrication based on construction plans; and framing of platform and post-and-beam structures in both wood and metal. This course gives students an introduction to the skill and knowledge base typically required for apprentice carpenters.

Residential Commercial Construction II
Prerequisite- Residential Commercial Construction I. This course offers an opportunity for students who have demonstrated a motivated interest in construction to learn and improve upon their basic skills. Layout, marketing, and job-site organizational skills are emphasized.

TCAT Building Construction
This program provides students with basic training in building homes. The training is based upon fundamental construction techniques with an emphasis on energy efficiency and sustainability. This course is for Dual Enrollment.

TCAT Heating, Ventilation, Air Conditioning (HVAC)
This program provides the student with entry-level skills needed in a variety of domestic and commercial service areas. This course is for Dual Enrollment.

Industry Certifications Architecture & Construction
HVAC Excellence Certification
NCCER Core Curriculum Certification
NCCER Construction Technology Certification

ARTS, AUDIO/VISUAL TECHNOLOGY & COMMUNICATIONS
Arts, Audio/Visual Technology &

Communications

Digital Arts & Design I

This course in the Arts, A/V Technology & Communications cluster is for students interested in art and design professions. The primary aim of this course is to build a strong understanding of the principles and elements of design and the design process. Students will learn to utilize industry tools to conceptualize and create print and video communications for targeted audiences. Students will acquire basic skills in computer de- sign, photography and video creation.

Digital Arts & Design II

This is a course that builds on the basic principles and the design process learned in Digital Arts & Design I. Students will learn to perform advanced software operations to create photographs and illustrations of increasing complexity. Students will employ design principles and use industry software to create layouts for a variety of applications.

Digital Arts & Design III

This is the third course in the Digital Arts & Design program of study. Applying design skills developed in prior courses, students will expand their creative and critical thinking skills to create comprehensive multimedia projects and three-dimensional designs. Upon completion of this course, students will be able to use industry standard software to create multimedia projects.

Foundations of Fashion Design

This course introduces students to the rich history of the fashion industry and the basic design principles that are integral to its operation Fashion industry, elements and principles of design, textile history and composition, as well as basic construction principles.

Fashion Design

This is an applied-knowledge course intended to prepare students to pursue careers in the fashion industry. Building on the knowledge acquired in Foundations of Fashion Design.

Visual Art I

This is an introductory class, requiring no prior art background. This course provides hands-on studio experiences in creating art plus an introduction to art history and art criticism. Students explore drawing and painting. Students will be encouraged to experiment with tools, material, techniques, processes, and ideas.

BUSINESS MANAGEMENT & ADMINISTRATION

Accounting I

Accounting I is an essential course for students who wish to pursue careers in business and finance, or for those who wish to develop important skillsets related to financial literacy. Whether students aspire to be future business owners or work in finance with other companies, accounting skills are fundamental to success and applicable in many different fields. In this course, proficient Accounting students develop skills to analyze business transactions, journalize, post, and prepare worksheets and financial statements, and apply financial analysis to business processes.

Advanced Computer Applications

Advanced Computer Applications prepares students to continue postsecondary training in business-related programs, provides advanced training for students pursuing a career in administrative and information support, and supports obtaining an industry certification in specific software applications. The school announcements are also done in this course.

Business Communications

This course is designed to develop students' effective oral and electronic business communication skills. This course develops skills in multiple methods of communications, including social media, as well as electronic publishing, design, layout, composition, and video conferencing.

Business Management

Business Management focuses on the development of the planning, organizing, leading, and controlling functions required for the production and delivery of goods and services. This applied knowledge course addresses the management role of utilizing the businesses' resources of employees, and equipment.

Computer Applications

This course is a foundational course intended to teach students the computing fundamentals and concepts involved in the use of common software

applications. Upon completion of this course, students will gain basic proficiency in word processing, spreadsheets, databases, and presentations.

Introduction to Business & Marketing

Introduction to Business and Marketing is an introductory course designed to give students an overview of the Business Management and Administration, Marketing, and Finance career clusters. The course helps students prepare for the growing complexities of the business world by examining basic principles of business, marketing, and finance in addition to exploring key aspects of leadership, ethical and social responsibilities, and careers.

Industry Certifications in Business

Microsoft Office Specialist, Expert, or Master Certification
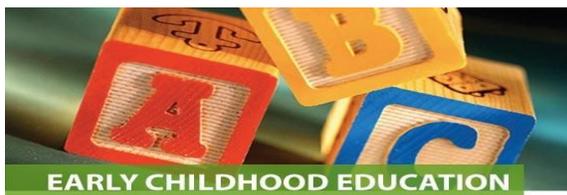
EDUCATION & TRAINING

Fundamentals of Education

This is a foundational course in the Education and Training career cluster for students interested in learning more about becoming a school counselor, teacher, librarian, or speech-language pathologist.

Teaching as a Profession I

This course covers the components of instruction, teaching strategies, types of assessments, student learning, special populations, and educational technology.

Teaching as a Profession II

This course is an applied knowledge course for students interested in learning more about becoming a teacher, school counselor, librarian, or speech-language pathologist. This covers classroom management, concepts of higher order thinking, differentiating instruction, and strategies of effective classroom planning. This course can be taken for Dual Enrollment.

TCAT Early Childhood Education Careers I, II, III

These courses prepare students for various child care related careers including, but not limited to childcare providers, preschool teachers, directors, nannies, early childhood specialists, interventionists, childcare referral counselors, and family specialists. Through in-depth academic studies in child growth and development, students gain a solid understanding of the early childhood years and a working knowledge of children in this critical stage of their development. Students work directly with pre-school children within the on-campus facility as well as participate in a field-site placement practicum in the community to acquire skills and confidence in teaching. These courses are for Dual Enrollment.

Industry Certifications Education Training

Child Development Associate Certification

FINANCE

Accounting I

Accounting I introduces concepts and principles based on a double-entry system of maintaining the electronic and manual financial records for a sole proprietorship, a partnership, and a corporation. It includes analyzing business transactions, journalizing, posting and preparing worksheets and financial statements.

Accounting II

This is an advanced study of concepts, principles, and techniques used by businesses to maintain electronic and manual financial records. This course expands on content explored in Accounting I to cover the accounting processes of a variety of different firms, including merchandising, manufacturing, and service-oriented businesses. Can be taken as Dual Accounting for college credit.

Introduction to Business & Marketing

This course gives students an overview of the Business Management and Administration, Marketing, and Finance career clusters. Students prepare for the growing complexities of the business world by examining basic principles of business, marketing, and finance in addition to exploring key aspects of leadership.

GOVERNMENT & PUBLIC ADMINISTRATION

Principles of Public Service
This course is a foundational course in the Public Management and Administration program of study. This course covers fundamental philosophies of constitutional government in the US as well as basic principles of public management and administration, including history and development, organizational structures, and modern functions.

Public Law & Budgeting
This course covers advanced topics such as laws and regulations affecting business operations of government, government funding sources, and budgeting practices, in addition to providing students with the opportunity to develop an original proposal for a community initiative that will involve ongoing engagement with local citizens and officials.

Public Management & Administration
This course covers basic organizations and management principles of public and nonprofit organizations, including standard policies and procedures, emerging trends, community planning, and funding and budgeting.

HEALTH SCIENCE

Anatomy & Physiology
Prerequisite: Health Science Education

This course is designed for the student to develop an understanding of the human body in health and disease. Medical terminology is a focus of the course. This course is recommended for any student who plans to study a professional health career (including, but not limited to, dental careers, medicine, physical therapy, occupational therapy, nursing or nutrition). This course also satisfies a lab science requirement.

Cardiovascular
Cardiovascular Services is an applied course in the *Diagnostic Services* program of study intended to prepare students with an understanding of the roles and responsibilities of those seeking employment in the cardiovascular field of healthcare. Upon completion of this course, proficient students will have a thorough understanding of the anatomy and physiology of the heart and be knowledgeable about both invasive and non-invasive cardiovascular procedures.

Diagnostic Medicine
Prerequisite: Health Science Education
Diagnostic Medicine creates a picture of an individual's health status at a single point in time. This could include the following careers and career areas: audiologist, cardiology, imaging, medical laboratory, radiography, nuclear medicine, stereotactic radiosurgery, cytotechnology, clinical laboratory technician, pathologists, medical physician, and histotechnologist.

Emergency Medical Services
Prerequisite: Health Science Education
This course is designed to prepare students to pursue careers in the fields of emergency medicine. Upon completion of this course, proficient students will be able to identify careers and features of the EMS systems and define the importance of workforce safety and wellness. Can also be taken for Dual Enrollment. Must be 17 before the course concludes.

Health Science Education
This course is an introduction to broad standards that serve as a foundation for health care professions. Units included are academics in health care, communications systems, legal responsibilities, ethics, teamwork, safety practices, and an overall of health careers.

Medical Terminology
This course will develop a working knowledge of the language of health professions. Understanding and interpreting medical language as it relates to the care and well-being of a patient will be the primary focus. This course can be taken for Dual Enrollment.

Medical Therapeutics

Prerequisite: Health Science Education
This course provides knowledge and skills to maintain or change the health status of an individual over time. It includes hands-on activities of patient care. This includes careers such as dental, dietetics, medical assistance, home health, nursing, pharmacy, respiratory, social work, and others.

Nursing Education
Prerequisite: Health Science Education and Medical Therapeutics
Nursing Education is a capstone course designed to prepare students to pursue careers in the field of nursing. Upon completion of this course, a proficient student will be able to implement communication and interpersonal skills, maintain residents' rights and independence, provide care safely, prevent emergency situations, prevent infection through infection control, and perform the skills required of a nursing assistant. Students will experience hands on training and caring for patients in local nursing homes. Students are eligible to take the certification examination as a Certified Nursing Assistant (CNA).

Industry Certifications Health Science
Electrocardiogram (EKG)
Emergency Medical Responder Certification
Certified Nursing Assistant
Cardiopulmonary resuscitation (CPR)

HOSPITALITY & TOURISM
Program of Study

Culinary Arts I
This course equips students with the foundational knowledge and skills to pursue careers in the culinary field as a personal chef, caterer, executive chef, and food and beverage manager. Upon completion of this course, proficient students will have knowledge in the components of commercial kitchen safety and sanitation, history of the foodservice industry, careers, nutrition, recipe basics, proper kitchen tools and equipment, and kitchen staples.
  *Culinary Arts II Hot
  Foods, Level* II

Culinary Arts II
Prerequisite: Culinary Arts I

Culinary Arts II is an applied-knowledge course to prepare students for careers in the culinary field as a personal chef, caterer, executive chef, and food and beverage manager. Upon completion of this course, proficient students will have an understating of commercial kitchen safety and sanitation, menu planning, food presentation, purchasing and inventory, preparation skills, cooking principles, and food preparation.

Culinary Arts III

HUMAN SERVICES/ EDUCATION & TRAINING
  Prerequisite: Early Childhood Education
Prerequisite: Culinary Arts I, Culinary II
Culinary Arts III is an advanced course intended to further equip students with the skills and knowledge needed to pursue a variety of careers in the culinary field. Upon completion of the course, students will be proficient in components of commercial kitchen safety and sanitation, dining room service, food preparation and presentation, bakeshop preparation skills and equipment, and advanced cooking principles.

Culinary Arts IV
Baking & Pastry
Prerequisite: Culinary Arts I, Culinary II, Culinary III
Culinary Arts IV is the capstone course in the *Culinary Arts* program of study intended to prepare students for careers such as personal chef, caterer, executive chef, and food and beverage manager. Course content covers the components of commercial kitchen safety and sanitation, food presentation, bakeshop preparation skills, sustainability practices, professionalism, and business opportunities. Upon completion of this course, proficient students will have applied the full range of knowledge and skills acquired in this program of study toward the planning and catering of an event approved by the instructor.

Industry Certifications for Culinary Arts
ServSafe Certification

HUMAN SERVICES

Family Studies
10-12th Grades
Course topics include knowledge of the demographic, historical, and social changes of interpersonal relationships, as well as parenting, and the effect of stressors on the family. Artifacts will be created for inclusion in a portfolio, which will continue to build throughout the program of study

Introduction to Human Studies
This course is a foundational course for students interested in becoming a public advocate, social worker, dietician, nutritionist, counselor, or community volunteer. Understanding of human needs, overview of social services, career investigation, mental health, and communication are the focus.

Nutrition Across the Lifespan
This is an introductory course designed to give students the opportunity to learn about food preparation in the home kitchen as well as aspects of human nutrition. Foods labs are conducted regularly to give students exposure to kitchen equipment and food preparation techniques. This course also satisfies Lifetime Wellness requirement.

Nutrition Science & Diet Therapy
Nutrition Science and Diet Therapy is an applied knowledge course in nutrition for students interested in the role of nutrition in health and disease. Upon completion of this course, proficient students will be able to develop a nutrition care plan as part of the overall health care process, use methods for analyzing the nutritional health of a community, and understand the relationship of diet and nutrition to specific diseases. The course places emphasize on the role of diet as a contributor to disease and its role in the prevention and treatment of disease.

students to learn
skill   successful. Since
This course prepares students for a variety-
especially in examining the diversity and
10-12th Grade, Level I

Lifespan Development
Lifespan Development builds basic knowledge in human growth and development. Upon completion of the course, proficient students will have knowledge of developmental theory, principles of growth, behavior of children from conception through adolescence, adult development and aging, and death and dying. Artifacts will be created for inclusion in a portfolio, which will continue to build throughout the program of study. This course will also include child development.

Psychology
Psychology is the science of the mind and the scientific study of the way the human mind works and influences behavior, or the influence of the particular person's character on behavior

Sociology
Sociology enables the student to engage in the exploration of people and their lives in groups and to gain knowledge of human social behavior.

INFORMATION TECHNOLOGY
INFORMATION TECHNOLOGY

Coding I
This course intended to teach students the basics of computer programming. The course places emphasis on practicing standard programming techniques and learning the logic tools and methods typically used by programmers to create simple computer applications. Upon completion of this course, students proficient in programming and logic can solve problems by planning multistep procedures. They are able to write, analyze, review, and revise programs, converting detailed information from workflow charts and diagrams into coded instructions in a computer language.

Coding II

This course challenges students to develop advanced skills in problem analysis, construction of algorithms, and computer implementation of algorithms as they work on programming projects of increased complexity. In so doing, they develop key skills of discernment and judgment, as they must choose from among many languages, development environments, and strategies for the program life cycle.

Computer Science Foundations

This is a course intended to provide students with exposure to various information technology occupations and pathways such as Networking Systems, Programming and Software Development, and Web Design. Depending on the focus area, proficient students will also demonstrate an understanding of electronics and basic digital theory; project management and teamwork; client relations; causes and prevention of Internet security breaches; and writing styles appropriate for web publication.

Computer Systems

This course is an intermediate course designed to prepare students with work-related skills and aligned certification in the information technology industry. Content provides students the opportunity to acquire knowledge in both theory and practical applications pertaining to hardware, operation systems, safe mode, command prompt, security, networking printers, and customer service management.

Cybersecurity I, II

The *Cybersecurity* program of study offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and cybersecurity-related careers in the Information Technology career cluster. Students will develop knowledge in security integration, application of cybersecurity practices and devices, ethics, and best practices management. The fundamental skills in this program covers both in house and external threats to network security and design, how to enforce network level security policies, and how to safeguard an organization's information.

Networking

This course is designed to emphasize the conceptual and practical skills necessary to design, manage, and diagnose network hardware and software. Proficient students will identify types of networks, understand layers of the open systems interconnection model, prevent security risks, and apply troubleshooting theory to the successful execution of networking tasks.

Web Design Foundations

Web Design Foundations is a course that prepares students with work-related web design skills for advancement into postsecondary education and industry. The course is intended to develop fundamental skills in both theory and practical application of the basic web design and development process, project management and teamwork, troubleshooting and problem solving, and interpersonal skill development

Website Development

Website Development builds on the skills and knowledge gained in Web Design Foundations to further prepare students for success in the web design and development fields. Emphasis is placed on applying the design process toward projects of increasing sophistication, culminating in the production of a functional, static website. As students work toward this goal, they acquire key skills in coding, project management, basic troubleshooting and validation, and content development and analysis. Artifacts of the work completed in this course will be logged in a student portfolio demonstrating mastery of skills and knowledge

Industry Certifications Information Technology

Comp TIA IT Fundamentals Certification
Comp TIA A+ Certification
Comp TIA Security +
CIW Web Design Specialist

Law, Public Safety, Corrections and Security

LAW, PUBLIC SAFETY, CORRECTIONS, & SECURITY

Court Systems & Practices

This course will identify careers in legal and correctional services, evaluate legal documents as they pertain to the rights of citizens outlined in the US Constitution, and analyze the criminal court system process from arrest to parole.

Criminal Justice I

This course serves as a comprehensive survey of how the law enforcement, legal, and correctional systems interact with each other in the United States. Students will understand the context of local, state, and federal laws, have investigative skills pertaining to basic crime scenes and incident documentation, and understand the importance of

communications and professionalism in law enforcement.

Criminal Justice II
This course is designed to cover the initial crisis scenario management to arrest, transport, trial, corrections, procedures, as well as laws governing the application of justice in the US are examined in detail, with special emphasis on the best practices and professional traits required of law enforcement and legal professions.

Criminal Justice III
This is the final course designed to equip students with the knowledge and skills to be successful in the sciences of criminal investigations. Students will learn terminology and investigation skills related to the crime scene, aspects of criminal behavior and applications of the scientific inquiry to solve crimes.

Principles of Law, Corrections, and Security
This introductory course is designed to prepare students to pursue careers in the field of law enforcement, legal services, corrections, and security. A proficient student will be able to identify careers in these fields, summarize the laws that govern the application of justice, and draw key connections between the history of the criminal justice system and the modern legal system.

MARKETING

Introduction to Business & Marketing
Introduction to Business and Marketing is designed to give students an overview of the Business Management and Administration, Marketing, and Finance career clusters. The course helps students prepare for the growing complexities of the business world by examining basic principles of business, marketing, and finance in addition to exploring key aspects of leadership, ethical and social responsibilities, and careers.

Marketing and Management I
This course focuses on the study of marketing concepts and their practical applications. Students will examine the risks and challenges that marketers face to establish a competitive edge in the sale of products and services. Topics covered include foundational marketing functions such as promotion, distribution, and selling, as well as coverage of economics fundamentals, international marketing, and career development.

Marketing & Management II
Advanced Strategies are studied in marketing concepts and principles used in management. Students will examine the challenges, responsibilities, and risks managers face in today's workplace. Subject matter includes finance, business ownership, risk management, marketing information systems, purchasing, promotion, and human resource skills.
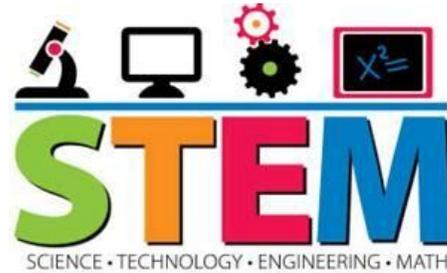
PROGRAM OF STUDY

STEM

Engineering Design I
This course covers essential knowledge, and concepts required for postsecondary engineering and technology fields of study. Students will learn what the various engineering disciplines, as well as admissions requirements for postsecondary engineering and engineering technology programs are in Tennessee.

Engineering Design II
This course covers knowledge, skills, and concepts required for postsecondary engineering and technology fields of study. Students will distinguish the differences between scientists and engineers, understand the importance of ethical practices in engineering and technology, identify components of control systems, describe differences between laws related to fluid power systems, explain why material and mechanical properties are important to design, create simple free body diagrams, use measurement devices employed in engineering, conduct basic engineering economics analysis, follow the steps in the engineering design process to complete a team project, and effectively communicate design solutions to others.

Engineering Practicum
This course is intended to provide students with the opportunity to apply the skills and knowledge learned in previous Engineering courses within a professional, working environment. In addition to developing an understanding of the professional and ethical issues encountered by engineers and technologies in the workplace, students learn to refine their skills in

problem solving, research, communications, data analysis, teamwork, and project management.

Principles of Engineering & Technology
This is the first course in the Engineering sequence. This course covers basic skills required for engineering and technology fields of study. Upon completion of this course, proficient students are able to identify and explain the steps in the engineering design process.

Industry Certifications STEM
Certified Solidworks Associate Academic
 11-12th Grades

TRANSPORTATION, DISTRIBUTION & LOGISTICS

Aviation I: Principles of Flight
Principles of Flight builds on the fundamental knowledge and skills learned in Introduction to Aerospace while teaching students the essential competencies needed for flight under normal conditions. Upon completion of this course, proficient students will be able to apply knowledge, skills, and procedures in a variety of simulated flight environments.

Aviation II: Advanced Flight
Aviation II: Advanced Flight is the capstone course in the Aviation Flight program of study intended to prepare students for careers in aviation. While continuing to build upon the knowledge, skills, and competencies acquired in the Introduction to Aerospace and Aviation I, students in Aviation II will receive rigorous instruction in preparation to take the Federal Aviation Administration (FAA) Private Pilot written exam.

Introduction to Aerospace
This course is a comprehensive foundational course for students interested in pursuing careers in aviation. This course covers the basic principles governing flight and the regulation of flight that every aviation professional must know regardless of his or her occupation—as a pilot or an engineer, a salesperson or a specialist, a mechanic or a statistician.

Maintenance & Light Repair I,
The Maintenance and Light Repair I course prepares students for entry into Maintenance and Light Repair

II. Students explore career opportunities and requirements of a professional service technician. Content emphasizes beginning transportation service skills and workplace success skills. Students study safety, tools, equipment, shop operations, basic engine fundamentals, and basic technician skills.

Maintenance & Light Repair II,
This course prepares students for entry into Maintenance and Light Repair III. Students study automotive general electrical systems, starting and charging systems, batteries, lighting, and electrical accessories. Upon completing all of the Maintenance and Light Repair courses.

Maintenance & Light Repair III,
The Maintenance and Light Repair III Course prepares students for entry into Maintenance and Light Repair IV. Students study suspension and steering systems and brake systems. Students will service suspension and steering systems and brake systems.

Maintenance & Light Repair IV,
The Maintenance and Light Repair IV course prepares students for entry into the automotive workforce or into post-secondary training. Students study and service automotive HVAC systems, engine performance systems, automatic and manual transmission/ transaxle systems, and practice workplace soft skills. Upon completing all of the Maintenance and Light Repair courses, students may enter automotive service industry as ASE Certified MLR Technician.

Industry Certifications Transportation, Distribution, & Logistics
Automotive Service Excellence Student Certification