

CTAE PATHWAY GUIDE

ALLIANCE ACADEMY FOR INNOVATION



1100 Lanier 400 Parkway, Cumming, GA 30040 | www.forsyth.k12.ga.us/alliance

Aerospace/ Flight Operations



AEROSPACE/FLIGHT OPERATIONS students will gain a fundamental knowledge base in aviation history and regulations, the basic principles of flight, aerospace careers, and factors influencing work systems, aerospace technologies, and basic aviation meteorology. This pathway provides a foundation that enables the student to apply the basics of aircraft navigation and utilize efficient communication methods for safe aircraft operations.

PATHWAY COURSES

Fundamental of Aerospace
Flight Operations I
Flight Operations II

CAREER CHOICES

Aerospace Engineers
Air Traffic Controllers
Aircraft Cargo Handling Supervisors
Airfield Operations Specialists
Aviation Safety Specialists
Avionics Inspectors
Commercial Pilots
Flight Attendants
Operations Technicians

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-TDL-Flight-Operations.pdf>

Aviation Maintenance



AVIATION MAINTENANCE students will gain a fundamental knowledge base in aviation history and regulations, the basic principles of flight, aerospace careers, and factors influencing work systems, aerospace technologies, and basic aviation meteorology. Students will then build a solid knowledge base in the basics of aircraft maintenance, performance, and design.

PATHWAY COURSES

Fundamental of Aerospace
Aviation Maintenance I
Aviation Maintenance II

CAREER CHOICES

Aerospace Engineer
Aircraft Crew Chief
Airway Transportation Systems Specialist
Aviation Inspector
Aviation Maintenance Manager
Aviation Mechanics and Technicians
Avionics Technicians
Designated Airworthiness Representative

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-TDL-Aviation-Maintenance.pdf>

Computer Science



COMPUTER SCIENCE students will prepare for entry-level, technical, and professional IT careers, including the design, development, implementation, and maintenance of computer systems and software, as well as knowledge of computer operating systems, programming languages, and software development required of cutting-edge technologies. Students will build a solid understanding and foundation of computer science which emphasis on computational thinking practices: connecting computing, developing computational artifacts, abstracting, analyzing problems and artifacts, communicating, and collaborating.

PATHWAY COURSES

Introduction to Digital Technology
Computer Science Principles or AP CS Principles
AP Computer Science

CAREER CHOICES

Computer Hardware Engineers
Computer Network Architects
Computer Programmers
Computer System Analysts
Database Administrators
Information Security Analysts
Information Systems Managers
Network Administrators
Software Developers
Software Engineers
Video Game Designers

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Information-Technology-Computer-Science.pdf>

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Criminal Investigations



CRIMINAL INVESTIGATIONS students will examine the basic concepts of law related to citizens' rights and the responsibilities, and students will receive instruction in critical skill areas including: communicating with diverse groups, conflict resolution, ethics, CERT (Citizens Emergency Response Training, or similar program), basic firefighting, report writing, terrorism, civil and criminal law. Starting with historical perspectives of the origin of the system, the pathway reviews the overall structure.

PATHWAY COURSES

Introduction to Law, Public Safety, Corrections, & Security
Criminal Justice Essentials
Criminal Investigations

CAREER CHOICES

Attorney
Bailiff
Border Patrol
Correctional Officer/Jailer
Crime Scene Investigator
Detective
Forensic Science Technician
Judge
Paralegal
Parole Officer
Police Officer
Private Detective and Investigator
Probation Officer
Sheriff's Deputy
State Trooper

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-LPSCS-Criminal-Investigations.pdf>

Cybersecurity



CYBERSECURITY students will learn to understand, communicate, and adapt to a digital world as it impacts their personal life, society, and the business world. The pathway is designed to provide students the basic concepts and terminology of cybersecurity and for them to examine how the concept of security integrates into the importance of user involvement, security training, ethics, trust, application of cybersecurity practices and devices, and best practices management.

PATHWAY COURSES

Introduction to Digital Technology
Introduction to Cybersecurity
Advanced Cybersecurity

CAREER CHOICES

Administrative Support Workers Network
Computer Network Support Specialist
Computer Operators
Computer Support Specialists
Computer System Administrators
Computer User Support Specialist
First-Line Supervisors of Office
Information Systems Managers
Network System Administrators

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Distribution and Logistics



DISTRIBUTION AND LOGISTICS students will learn about the employment opportunities in the transportation, distribution, and logistics fields and exposed to all areas of distribution and logistics. This pathway will introduce students to global supply chain logistics covering topics, such as the global logistics environment, the importance of planning and logistics strategies, customer service, material handling safety and operations, global supply chain operations, and quality control. Successful completion of this pathway will prepare students for the Certified Logistics Associate (CLA) exam.

PATHWAY COURSES

Logistics Fundamentals
Logistics Operations
Materials Management

CAREER CHOICES

Laborers and Freight, Stock and Materials
Logisticians
Logistics Analysts
Logistics Engineers
Logistics Managers
Materials Mover
Packers and Packers
Power Distributors and Dispatchers
Storage and Distribution Managers
Supply Chain Managers
Transportation Managers

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-TDL-Distribution-Logistics.pdf>

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Energy Systems



ENERGY SYSTEMS students will explore the relationship between force, work, energy, and power and study the characteristics, availability, conversion, control, transmission, and storage of energy and power. The pathway will guide students to examine and apply the principles of electrical, fluid, and mechanical power. Students research renewable, nonrenewable, and inexhaustible resources and conservation efforts as part of this pathway.

PATHWAY COURSES

- Foundations of Energy Technologies
- Energy and Power: Technology
- Appropriate and Alternative Energy Technologies

CAREER CHOICES

- Electricians
- Electrical Engineer
- Electrical Power-Life Installers and Repairs
- Electronics Technicians
- Engineering Technicians
- Equipment, Cable, Line Installers
- Equipment, Cable, Line Repairers
- Hazardous Waste Technicians
- Industrial Production Manager
- Mining Engineers
- Petroleum Engineers
- Pipefitters/ Pipe Layers
- Power Plant Operators
- Value/Regulator Repairers

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Energy-Energy-Systems.pdf>

Financial Technologies (FinTech)



FINANCIAL TECHNOLOGIES (FinTech) students will explore what new financial technologies are emerging and how technological advances in data analytics are enabling innovation in the financial industry. Through this pathway students examine new services and business models in various areas of banking, insurance, and financial asset management. Various forms of technologies and internet research will be highlighted to expose students to the resources available within financial technology.

PATHWAY COURSES

- Introduction to Financial Technology
- Financial Technologies and Services
- Coding for FinTech

CAREER CHOICES

- Account Manager
- Analytics Specialist
- Business Development Manager
- Business Systems Analyst
- Data Scientist
- Database Administrator
- Email Marketing Specialist
- Product Manager
- Salesforce Administrator
- Senior NET Developer
- Software Engineer/Developer

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Firefighting



FIREFIGHTING students will learn essential components needed for fire and emergency services. Students will be prepared for exploring firefighting, emergency medical responder, and public safety communications. After completing this course, the student will be able to sit for the exam to certify as a Firefighter I per National Fire Protection Association (NFPA®) 1001, Standard for Fire Fighter Professional Qualifications. This course is also based on the Basic Firefighting Training Program from the GA Public Safety Training Center (GPSTC).

PATHWAY COURSES

- Introduction to Law, Public Safety, Corrections and Security
- Essentials of Fire and Emergency Services
- Applications of Firefighting

CAREER CHOICES

- Forest Fire Inspectors
- Forest Fire Prevention Specialists
- Private Detectives and Investigators
- Fire Inspectors
- Firefighters
- First Line Prevention Workers
- First Line Supervisors

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-LPSCS-Firefighting.pdf>

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Game Design



GAME DESIGN students will gain an understanding of the fundamental principles used at every stage of the game creation process. First, game genres and modes of play are explored in terms of the psychology of incentives, motivation to play, and social networking. Next, virtual characters and non-player characters are reviewed from concept drawing to 2D and 3D art, rigging, and animation. Next, level design, storytelling, and animation are added to develop a virtual world around the characters.

PATHWAY COURSES

Introduction to Digital Technology
 Computer Science Principles
 Game Design: Animation and Simulation

CAREER CHOICES

Audio Engineer
 Computer Systems Managers
 Computer Game Designer
 Computer Programmer
 Information Systems Managers
 Multimedia Artists and Animators
 Software Developer
 Technology Support Specialist
 Video Game Tester

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Graphic Design



GRAPHIC DESIGN students will learn processes involved in the technologies of printing, publishing, packaging, electronic imaging, and their allied industries. Students will also gain more experience in creative problem solving and the practical implementation of those solutions across multiple areas of graphic design and graphic communications. Content will cover electronic systems and software programs used in graphic design, page composition, image conversion, and digital printing.

PATHWAY COURSES

Introduction to Graphics and Design
 Graphic Design and Production
 Advanced Graphic Design

CAREER CHOICES

Advertising and Promotions Managers
 Art Directors
 Commercial and Industrial Designers
 Creative Designer
 Fashion Design
 Film and Video Editors
 Graphic Designer
 Illustration
 Interior Designers
 Multimedia Artist and Animators
 Photography
 3D Animation

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-AAVTC-Graphic-Design.pdf>

Health Information Technology



HEALTH INFORMATION TECHNOLOGY students will take an overall look at the current state of healthcare in the United States. Students will analyze the larger role that technology and information technology play in the healthcare system, the impact that technology has on the healthcare field, and which careers will be available due to these changes. Students will also analyze the three main groups of HIT applications in hospitals and the clinical functions. The importance of patient confidentiality and security will be analyzed, as well the challenges involved with the Health Information Exchange implementation.

PATHWAY COURSES

Introduction to Healthcare Science
 Essentials of Health Information Technology
 Applications of Health Information Technology

CAREER CHOICES

Computer Programmers
 Computer Support Specialists
 Computer User Support Specialists
 Informatics Nurse Specialists
 Medical Transcriptionists
 Medical Records & Health Information
 Software Developers
 Techs Medical Secretaries

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Health-Science-Health-Informatics-Health-Information-Technology.pdf>

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Healthcare – Emergency Medical Responder



HEALTHCARE – EMERGENCY MEDICAL RESPONDER

students will be provides initial stabilizing care to the sick or injured prior to the arrival of Emergency Medical Services Professionals (EMS), and to assist EMS personnel in transporting patients for definitive care at an appropriate hospital/facility. Major areas of instruction include Introductory Medical Terminology and Anatomy & Physiology; Responder Safety; Incident Command; Blood-borne Pathogen Training; Basic Physical Assessment; and Treatment of Trauma and Medical Emergencies; Cardiopulmonary Resuscitation and the use of Automatic External Defibrillators (AEDs).

PATHWAY COURSES

Introduction to Healthcare Science
Essentials of Healthcare Science
Emergency Medical Responder

CAREER CHOICES

Emergency Nurse
EMT and Paramedic
Firefighter
Licensed Practical Nurse
Paramedic Technologist
Registered Nurse

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Health-Science-Therapeutic-Services-Emergency-Medical-Responder.pdf>

Hospitality and Tourism



HOSPITALITY AND TOURISM students will learn about the basics of marketing and business in relation to the hospitality, recreation, and tourism industry in the U.S. and abroad. Students will study destination geography, world economies, and historical timelines related to major segments of the hospitality industry. The vital roles of group, convention and meeting planning, human relations, communications and ethics will be discussed along with the recreation industry segment. Students will also demonstrate skills in handling legal and liability issues and human resources functions.

PATHWAY COURSES

Marketing Principles
Hospitality, Recreation, and Tourism Essentials
Hospitality, Recreation, and Tourism Management

CAREER CHOICES

Catering Manager
Country Club Management
Cruise Director
Entrepreneur
Golf Course Management
Hotel Management
International Tourism
International Hotel Management
Sales Representative
Social Media Marketer
Tourism Director
Travel Agent
Travel Blogger
Travel Planner

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Hospitality-Tourism-Hospitality-Recreation-Tourism.pdf>

Legal Services – Applications of Law



LEGAL SERVICES – APPLICATIONS OF LAW students will be provided with an overview of the judicial process and role in our constitutional system of government. This course focuses on substantive law, both criminal and civil law, as well as the application of the law to factual scenarios. Students will learn the basic concepts of criminal law in order to analyze factual scenarios and apply criminal law to justify an appropriate criminal charge and the presence of possible defenses.

PATHWAY COURSES

Introduction to Law, Public Safety, Corrections and Security
Essentials of Legal Services
Applications of Law

CAREER CHOICES

Attorneys
Correction Officers & Jailers
Court Reporters
Criminal Investigators
Information Security
IT Specialists
Paralegals and Legal Assistants
Police Officers
Public Safety Communication
Security and Protective Services

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-LPSCS-Applications-of-Law.pdf>

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Mechatronics



MECHATRONICS students will be introduced to direct current concepts and applications, pneumatic system fundamentals, and programmable logic controllers (PLCs). Topics include electrical laws and principles, magnetism, series, parallel, and simple combination DC circuits, pneumatic system principles and components, and PLC installation and programming. They will also learn about alternating current theory and applications of varying sine wave voltages and current, motor theory and operating principles, control devices, symbols and schematic diagrams, preventative maintenance and troubleshooting.

PATHWAY COURSES

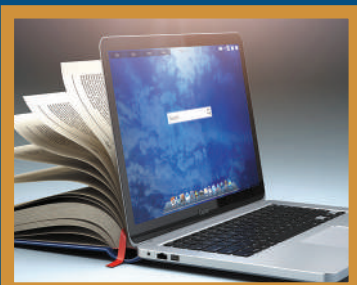
Introduction to Mechatronics
AC Theory, Electric Motors, and Hydraulic Systems
Semiconductors Mechanical Sys, & Pump and Piping Systems

CAREER CHOICES

Chemical Plant and System Operators
Commercial Equipment Repairers
Computer User Support Specialists
Electrical and Electronics Repairers
Electronics Engineering Technicians
Industrial Engineers
Industrial Engineering Technicians
Industrial Equipment Repairers
Industrial Machinery Mechanics

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Manufacturing-Mechatronics.pdf>

Teaching as a Profession



TEACHING AS A PROFESSION students will learn to plan, manage, and provide education and training services, and related learning support services such as administration, teaching/training, administrative support, and professional support services. They will be engaged in observations, interactions, and analyses of critical and contemporary educational issues and investigate issues influencing the social and political contexts of educational settings in Georgia and the United States and actively examines the teaching profession from multiple vantage points both within and outside of the school.

PATHWAY COURSES

Examining the Teaching Profession
Contemporary Issues in Education
Teaching as a Profession Internship

CAREER CHOICES

Adult Educator
After-School Program Supervisor
Coach
Education Evaluator
Educational and Teacher Aide
K-12 School Teacher
Media Specialist
Post-Secondary Vocational Education
Recreation Attendant
School Administration
Special Education Teacher

<https://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/POS-Education-Training-Teaching-as-a-Profession.pdf>