

# CTAE PATHWAY GUIDE

## ALLIANCE ACADEMY FOR INNOVATION

1100 Lanier 400 Parkway, Cumming, GA 30040 | [www.forsyth.k12.ga.us/alliance](http://www.forsyth.k12.ga.us/alliance)



### Aerospace Flight Operations



**AEROSPACE/FLIGHT OPERATIONS PATHWAY** This pathway will introduce students to the basics of aircraft navigation and the communication methods necessary for safe aircraft operations. Additionally, students will gain a meteorological foundation for understanding the forecasting and charting of weather patterns as applied to the air transportation industry.

#### PATHWAY COURSES

Fundamental of Aerospace  
Flight Operations I  
Flight Operations II

#### CAREER CHOICES

Aerospace Engineer  
Air Traffic Controller  
Aircraft Cargo Handling Supervisor  
Airfield Operations Specialist  
Aviation Safety Specialist  
Avionics Inspector  
Commercial Pilot  
Flight Attendant  
Operations Technician

**INDUSTRY CREDENTIAL (Credential of Value): FFA: Federal Aviation Administration - Private Pilot Airplane**

### Computer Science



**COMPUTER SCIENCE PATHWAY** Careers in Computer Science lead individuals to create, modify, and test codes - all while inventing and designing new approaches to computing technology and finding innovative uses for existing technology. Career area focus requires solving complex problems in computing for business, medicine, science, and other fields.

#### PATHWAY COURSES

Introduction to Software Technology  
Computer Science Principles or AP CS Principles  
AP Computer Science A

#### CAREER CHOICES

Computer Programmers  
Computer Hardware Engineers  
Computer Network Architects  
Computer System Analysts  
Database Administrators  
Information Security Analysts  
Software Developers  
Software Engineers  
Software Testers

**INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Information Technology (IT) Specialist - Software Development**

### Cybersecurity



**CYBERSECURITY PATHWAY** This pathway is designed to introduce students to the field of cybersecurity while examining best practices related to the management of security, ethics, trust, internal/external threats, cryptography, and wireless technologies. Computer-related jobs are generally high paying, and those working in the profession require a foundational knowledge of problem solving and logical thinking.

#### PATHWAY COURSES

Introduction to Hardware Technology  
Introduction to Cybersecurity  
Advanced Cybersecurity

#### CAREER CHOICES

Administrative Support Workers Network  
Computer Network Support Specialist  
Computer Operator  
Computer Support Specialist  
Computer System Administrator  
Computer User Support Specialist  
First-Line Supervisors of Office  
Information Systems Manager  
Network System Administrator

**INDUSTRY CREDENTIAL (Credential of Value): Security and Certification**

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### Drone Unmanned Aircraft Systems



#### DRONE UNMANNED AIRCRAFT SYSTEMS PATHWAY

This pathway provides a foundation for a student to earn a commercial license to pilot an unmanned aircraft system. Topics covered will be weather and effects of weather on an unmanned aircraft, types and uses of unmanned aircraft, pre-flight planning and checks, FAA requirements, technology and remote instruction, radio communications, and more. Students will have an opportunity to earn their remote pilot license by taking and successfully passing the FAA Part 107 Exam.

#### PATHWAY COURSES

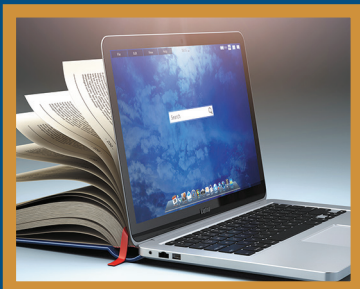
Fundamentals of Aerospace  
Flight Operations I  
Unmanned Aircraft Systems

#### CAREER CHOICES

Delivery Service  
Insurance and Claim Research  
Operator and Editor  
Photographer  
Public Safety/Emergency Service  
Surveyors and Mapping Technician  
Television, Video, and Film Camera  
Unmanned Aircraft Vehicle (UAV) Pilot

INDUSTRY CREDENTIAL (Credential of Value): FFA: Unmanned Aircraft

### Education as a Profession



**EDUCATION AS A PROFESSION PATHWAY** Educational services is the second largest industry which includes a variety of institutions that offer academic education or career and technical instruction. This includes elementary, middle and secondary schools, universities, colleges, professional schools, community or junior colleges and career and technical institutes. The overall demand for educational services will increase as growing emphasis on improving education along with retirements will create large numbers of job openings.

#### PATHWAY COURSES

Education as a Profession I  
Education as a Profession II  
Education as a Profession Practicum

#### CAREER CHOICES

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

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Teaching as a Profession

### Financial Technologies (FinTech)



**FINANCIAL TECHNOLOGIES (FinTech) PATHWAY** Students will examine new services and business models in various areas of banking, insurance, and financial asset management. This pathway focuses on the usage of technology that powers financial ecosystems, digital finance platforms, mobile payments, and digital asset management. Students will explore the characteristics and functions of electronic and mobile payment systems and the design and development of dynamic, data-driven financial applications using client- and server-side architecture.

#### 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

INDUSTRY CREDENTIAL (Credential of Value): Not Yet Approved by the Georgia Department of Education

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### Fire Emergency Services - EMR



#### FIRE AND EMERGENCY SERVICES - EMR PATHWAY

Firefighters and emergency service workers are frequently the first emergency personnel at the scene of a traffic accident or medical emergency and may be called upon to put out a fire, treat injuries or perform other vital functions. Firefighters control and extinguish fires or respond to emergency situations where life, property, or the environment is at risk. Duties may include fire prevention, emergency medical service, hazardous material response, search and rescue, and disaster assistance.

#### PATHWAY COURSES

Introduction to Law, Public Safety, Corrections and Security  
Essentials of Fire and Emergency Services  
Emergency Medical Responder

#### CAREER CHOICES

Advanced Fire Administrator  
Arson Investigator  
Basic Fire Company Officer  
Emergency Medical Responder  
Firefighters  
First Line Supervisor  
Forest Fire Inspector  
Incident Safety Officer  
Public/Private Crisis Manager

**INDUSTRY CREDENTIAL (Credential of Value): FEMA Emergency Medical Responders Certification**

### Game Design



**GAME DESIGN PATHWAY** After establishing foundational knowledge, game genres and modes of play are explored in terms of the psychology of incentives, motivation to play, and social networking. Virtual characters and non-player characters are reviewed from concept drawing to 2D and 3D art, rigging, and animation. Level design, storytelling, and animation are added to develop a virtual world around the characters. Students are strongly encouraged to add an internship.

#### PATHWAY COURSES

Introduction to Software Technology  
Computer Science Principles or AP CP Principles  
Game Design: Animation and Simulation

#### CAREER CHOICES

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

**INDUSTRY CREDENTIAL (Credential of Value): Unity Certification Associate**

### Graphic Design



**GRAPHIC DESIGN PATHWAY** This pathway starts with an introduction to the graphic design principals while exploring the techniques of creative problem solving. Next students will explore the various printing techniques including screen-printing and offset printing. Then the students will choose a to specialize in either Graphic Design or Graphic Production focusing on the demand and real world techniques of the specialty.

#### PATHWAY COURSES

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

#### CAREER CHOICES

Advertising and Promotions Manager  
Art Director  
Commercial and Industrial Designer  
Creative Designer  
Fashion Design  
Film and Video Editor  
Graphic Designer  
Illustration  
Interior Designer  
Multimedia Artist and Animator  
Photography  
3D Animation

**INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Visual Communications and Interactive Media Design**

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### Healthcare – Diagnostic Clinical Lab



#### HEALTHCARE – DIAGNOSTIC CLINICAL LAB PATHWAY

This pathway provides career opportunities for persons with a strong interest in the initial phase of detecting health problems—the diagnostic phase. This includes procedures such as X-rays, fluoroscopies, sonograms, and clinical laboratory tests examining blood and other body fluids. Occupations are increasingly more varied because of complex new technology seeking to explain how the human body works.

#### PATHWAY COURSES

Introduction to Healthcare Science  
Essentials of Healthcare  
Clinical Lab I

#### CAREER CHOICES

Clinical Chemistry Technologist  
Clinical Laboratory Technician  
Immunology Technologist  
Medical Services Manager  
Medical Laboratory Technologist  
Ophthalmic Medical Technologist  
Medical and Health Services Manager  
Medical Lab Assistant  
Microbiology Technologist  
Nuclear Medicine Technologist

INDUSTRY CREDENTIAL (Credential of Value): National Health Science

### Healthcare – Emergency Medical Responder



#### HEALTHCARE – EMERGENCY MEDICAL RESPONDER

**PATHWAY** Employment of EMTs and paramedics is expected to grow much faster than average. Demand for emergency services will increase as a large segment of the population ages and becomes more likely to have medical emergencies. Those certified in EMT-Intermediate and EMT-Paramedic fields will have favorable job prospects. There will also be a demand for parttime, volunteer EMTs and paramedics in rural areas.

#### PATHWAY COURSES

Introduction to Healthcare Science  
Essentials of Healthcare Science  
Emergency Medical Responder

#### CAREER CHOICES

Ambulance Driver  
Emergency Nurse  
EMR Analyst  
EMT and Paramedic  
Firefighter  
Licensed Practical Nurse  
Paramedic Technologist  
Registered Nurse

INDUSTRY CREDENTIAL (Credential of Value): FEMA Emergency Medical Responders Certification

### Healthcare – Emergency Medical Technician



#### HEALTHCARE – EMERGENCY MEDICAL TECHNICIAN

**PATHWAY** A growing aging population is expected to increase the likelihood of medical emergencies, thus increasing the need for EMTs and paramedics. Plus, emergency rooms are frequently overcrowded, which increases the amount of time that EMTs and paramedics must spend with each patient. This is also likely to increase the number of job positions.

#### PATHWAY COURSES

Introduction to Healthcare Science  
Essentials of Healthcare Science  
Emergency Medical Technician

#### CAREER CHOICES

Air Ambulance Medical Attendant  
Ambulance Driver  
Emergency Dispatcher  
Emergency Room Technician  
Fire Depart. Emergency Medical Tech.  
Forensic Science Technicians  
Industrial Medic  
Offshore Medic  
Paramedic  
Surgery Technologist

INDUSTRY CREDENTIAL (Credential of Value): Emergency Medical Technician Certification

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### Hospitality, Recreation, and Tourism



#### HOSPITALITY, RECREATION, AND TOURISM PATHWAY

Georgia represents the 8th largest tourism economy in the country and the 2nd largest industry in Georgia. This industry includes lodging, hotels and resorts; conventions, meetings, trade shows and events; restaurants and food service; recreation, attractions, sporting events and travel. The industry is primarily a service-oriented industry, workers will need good communication skills, and they will have to understand the importance of meeting the needs of individuals.

#### PATHWAY COURSES

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

#### CAREER CHOICES

Catering Manager  
Country Club Management  
Cruise Director  
Hotel Management  
International Tourism  
International Hotel Management  
Social Media Marketer  
Tourism Director  
Travel Blogger  
Travel Planner

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Travel and Tourism

### International Business



**INTERNATIONAL BUSINESS PATHWAY** This pathway provides students with a foundation of core concepts required to succeed in an international business environment. Key concepts include global awareness, spirit of entrepreneurship, and cultural competency. At the end of this pathway, students will have developed the project management and business management skills that are the basis for developing and managing a business in an international market.

#### PATHWAY COURSES

Introduction to International Business  
Global Awareness and Cultural Competency  
International Business Concepts

#### CAREER CHOICES

Economist  
Foreign Exchange Trader  
Logistics Manager  
International Foreign Policy Advisor  
International Marketing Manager  
International Trade Manager  
International Accountant  
Import/Export Coordinator  
Supply Chain Manager  
Trade Specialist

INDUSTRY CREDENTIAL (Credential of Value): Not Yet Approved by the Georgia Department of Education

### Law Enforcement/Criminal Investigations



#### LAW ENFORCEMENT/CRIMINAL INVESTIGATIONS PATHWAY

This pathway is designed to provide students with career-focused educational opportunities in various public safety fields. Each course has elements which cover tactics, methods, and skills utilized in law enforcement and other public safety organizations.

#### PATHWAY COURSES

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

#### CAREER CHOICES

Attorney  
Bailiff  
Correctional Officer  
Detective  
Dispatcher  
Jailer  
Law Enforcement Technician  
Parole Officer  
Police Officer  
Probation Officer

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Criminal Justice

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### Law Enforcement/ Forensic Science



#### LAW ENFORCEMENT/FORENSIC SCIENCE PATHWAY

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, basic firefighting, report writing, terrorism, civil and criminal law. Students will learn investigative techniques and crime scene investigation skills using the scientific method.

#### PATHWAY COURSES

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

#### CAREER CHOICES

Coroner  
Detective  
Evidence Technician  
Fingerprint Technician  
Forensic Investigator  
Forensic Pathologist  
Medical Examiner  
Police Officer  
Sheriff's Officer  
Special Agent

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Criminal Justice

### Legal Services – Applications of Law



#### LEGAL SERVICES – APPLICATIONS OF LAW PATHWAY

Occupations are numerous and represent multiple levels of education and skills. Courses are designed to provide students with the understanding of the various services which ensure the proper function of our nation's legal system. Job openings will stem from employment growth attributable to the desire for increased corporate, industrial and homeland security. Also, a more security conscious society and concern about drug-related crimes should contribute to the increasing demand.

#### PATHWAY COURSES

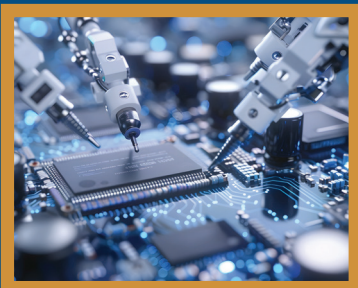
Introduction to Law, Public Safety, Corrections & Security  
Essentials of Legal Services  
Applications of Law

#### CAREER CHOICES

Attorney  
Correction Officer and Jailer  
Court Reporter  
Criminal Investigator  
Information Security  
IT Specialist  
Paralegals and Legal Assistant  
Police Officer  
Public Safety Communication  
Security and Protective Service

INDUSTRY CREDENTIAL (Credential of Value): Not Yet Approved by the Georgia Department of Education

### Mechatronics



**MECHATRONIC PATHWAY** Mechatronics is a diverse field encompassing many interrelated disciplines including Electronics, Mechanics, Fluid Power, Electrical Control Systems, Programmable Logic Controllers (PLC), Computers, and Robotics. People employed in the mechatronics field deal with automated systems in a wide variety of applications. They also deal with related professional and technical support activities such as production planning and control, maintenance, and engineering.

#### 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 Operator  
Commercial Equipment Repairer  
Computer User Support Specialist  
Electrical and Electronics Repairer  
Electronics Engineering Technician  
Industrial Engineer  
Industrial Engineering Technician  
Industrial Equipment Repairer  
Industrial Machinery Mechanic

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Mechatronics Level I

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