

CTAE PATHWAY GUIDE

DENMARK HIGH SCHOOL

645 Mullinax Road, Alpharetta, GA 30004 | www.forsyth.k12.ga.us/dhs



Artificial Intelligence



ARTIFICIAL INTELLIGENCE PATHWAY This pathway deals with the simulation of intelligent behavior in computers. Artificial Intelligence sits at the intersection and synergy of critical components from a variety of fields including programming, data science, mathematical reasoning, creative problem solving, ethics, and applied experiences. Students in the AI pathway will apply professional software development tools and processes to create functional, real-world applications of Artificial Intelligence using machine learning.

PATHWAY COURSES

Foundations of Artificial Intelligence
Artificial Intelligence Concepts
Artificial Intelligence Applications

CAREER CHOICES

Big Data Engineer/Architect
Business Intelligence Developer
Computer Vision Engineer
Data Mining/Analysis
Data Scientist
Machine Learning Engineer
Natural Language Processing Engineer
Researcher/Research Scientist
Robotics Engineer
Software/AI Engineer
Software Architect

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

Cloud Computing



CLOUD COMPUTING PATHWAY This pathway provides a foundational knowledge in programming languages, software development, app creation and the basics of cloud computing. Technical content includes designing, developing, and deploying a virtual private network, creating a cloud environment that is scalable, and demonstrating safe use of big data. These courses serve as a foundation for those students wishing to pursue a certificate credential at the technical school level or enter the workforce with entry-level skills.

PATHWAY COURSES

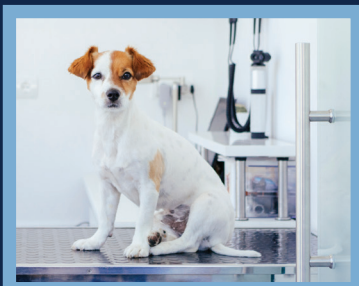
Introduction to Software Technology
Computer Science Principles or AP CS Principles
Cloud Computing

CAREER CHOICES

.NET Developer
AWS Certified Cloud Practitioner
Cloud Engineer
Computer Systems Engineer
Data Scientist
Front-end Developer
Java Developer
Software Engineer
Systems Administrator
Systems Engineer

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: AWS Cloud Computing Practitioner

Companion Animal Systems



COMPANION ANIMAL SYSTEMS PATHWAY Companion animals are a large part of the animal care industry. They are cared for by performing routine tasks under the supervision of veterinarians, scientists, and veterinary technologists and technicians. Animal care and service workers feed, water, groom, bathe, and exercise pets and other nonfarm animals. Veterinary medicine has advanced considerably, and many of the veterinary services offered today are comparable to health care for humans, including cancer treatments.

PATHWAY COURSES

Basic Agriculture Science
Animal Science and Biotechnology
Small Animal Care

CAREER CHOICES

Agricultural Animal Specialist
Agricultural Inspector
Agriculture Teacher
Animal Breeder
Animal Care and Service Worker
Animal Scientist
Biological Technician
Nonfarm Animal Caretaker
Ranch Manager
Veterinarian
Veterinary Assistant
Veterinary Technician

INDUSTRY CREDENTIAL (Credential of Value): Animal Science II

For more education on each pathway, download a complete Program of Study:

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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

Culinary Arts



CULINARY ARTS PATHWAY This pathway introduces students to fundamental food preparation terms, concepts, and methods in culinary arts. Fundamental techniques, skills, and terminology are covered and mastered with an emphasis on basic kitchen and dining room safety, sanitation, equipment maintenance and operation procedures. Courses provide an overview of the professionalism in the culinary industry and career opportunities leading into a career in culinary arts.

PATHWAY COURSES

Introduction to Culinary Arts
Culinary Arts I
Culinary Arts II

CAREER CHOICES

Caterer
Chef and Head Cook
Dining Room Management
Food and Beverage Director
Food Services Manager
Food Stylist and Photographer
Food Writer and Critic
Kitchen Manager
Personal Chef
Prep Cook
Restaurant Entrepreneur
Sous Chef

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Culinary Arts Cook Level II

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

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Engineering and Technology



ENGINEERING AND TECHNOLOGY PATHWAY The major focus of the Introduction to Engineering Design (IED) course is to expose students to design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. IED gives students the opportunity to develop skills and understanding of course concepts through activity-, project-, and problem-based (APPB) learning. It also allows students to develop strategies to enable and direct their own learning.

PATHWAY COURSES

Foundations of Engineering and Technology
Engineering Concepts
Engineering Applications

CAREER CHOICES

Civil Engineer
Designer
Drafter
Electrical Engineer
Industrial Engineer
Machinist
Materials Engineer
Mechanical Engineer
Nuclear Engineer
Quality Control Inspector

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Engineering

Entrepreneurship



ENTREPRENEURSHIP PATHWAY Entrepreneurs, innovators, and small businesses play a key role in Georgia's economy. Business professionals may be managers, owners, accountants, economists, administrators, or analysts. These individuals must possess excellent communication skills and be able to establish working relationships with many different people.

PATHWAY COURSES

Introduction to Business and Technology
Legal Environment of Business
Entrepreneurship

CAREER CHOICES

Advertising and Promotion Manager
Business Educator
Chief Executive Officer
Claims Adjuster or Examiner
Computer Systems Specialist
Cost Estimator
Database Administrator
Financial Analyst or Manager
Network and Computer Analyst
Paralegal and Legal Assistant
Personal Financial Advisor
Training and Development Manager

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: General Management

Financial Services



FINANCIAL SERVICES PATHWAY This pathway introduces students to the basics of the banking system, bank operating procedures, negotiable instruments, and the deposit and credit functions of banks. Current issues and future trends in banking are examined. Students explore the major functions of bank employees by completing a flow-of-work simulation. Students formulate business and individual investment decisions by comparing and contrasting a variety of investment options.

PATHWAY COURSES

Introduction to Business and Technology
Financial Literacy
Banking, Investing and Insurance

CAREER CHOICES

Accountant
Auditor
Business Teacher
Claims Adjuster
Financial Planner
Insurance Sales Agent
Investment Banker
Loan Officer
Salesperson
Tax Associate

INDUSTRY CREDENTIAL (Credential of Value): NOCTI: Financial and Investment Planning

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Healthcare - Allied Health and Medicine



HEALTHCARE - ALLIED HEALTH AND MEDICINE

PATHWAY The healthcare industry offers jobs in a variety of establishments: hospitals, nursing and residential care facilities, physicians, dental, and other health practitioners offices, home health care services, outpatient care centers, ambulatory health care services and medical and diagnostic laboratories.

PATHWAY COURSES

Introduction to Healthcare Science
Essentials of Healthcare
Allied Health and Medicine

CAREER CHOICES

Clinical Laboratory Technician
EMT
Medical Doctor
Medical Laboratory Technician
Orthopedic Technologist
Paramedic
Pediatrician
Pharmacist
Physical Therapist
Radiologic Technologist
School Nurse
Surgical Technologist

INDUSTRY CREDENTIAL (Credential of Value): Certified Clinical Medical Assistant

Marketing and Management



MARKETING AND MANAGEMENT PATHWAY Students develop knowledge and skills in the foundational areas of marketing (economics, human relations and business basics) and the functional areas of marketing (product and service planning, marketing information management, purchasing and pricing, selling and promotion, risk management, financing and distribution/logistics), as well as international marketing, management and entrepreneurship.

PATHWAY COURSES

Marketing Principles
Marketing and Entrepreneurship
Marketing Management

CAREER CHOICES

Advertising Account Executive
Communications Specialist
Customer Service Representative
Entertainment Marketer
Insurance Agent
Logistics Specialist
Market Research Analyst
Marketing Specialist
Media Buyer
Public Relations Specialist
Real Estate Agent

INDUSTRY CREDENTIAL (Credential of Value): Standard Marketing Program of Study

Sports and Entertainment Marketing



SPORTS AND ENTERTAINMENT MARKETING PATHWAY

Students in this pathway will apply their knowledge and skills to this industry in order to master the industry's terminology, market arenas and venues, obtain sponsorships, maintain solid media relations, coordinate and manage campaigns and events, etc. This pathway culminates with an opportunity for students to take the MBA Research "A*S*K Marketing Concepts" end of pathway assessment or the NOCTI "Marketing Education Manager Trainee" end of pathway assessment.

PATHWAY COURSES

Marketing Principles
Introduction to Sports and Entertainment Marketing
Advanced Sports and Entertainment Marketing

CAREER CHOICES

Event Coordinator
Market Researcher
Promoter
Public Relations Professional
Salesperson
Social Media Manager
Sports Agent
Sports Manager
Sports Marketing Professional
Sports Writer

INDUSTRY CREDENTIAL (Credential of Value): Standard Marketing Program of Study

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Veterinary Science



VETERINARY SCIENCE PATHWAY This pathway covers the basics of animal care. Topics covered include disease, parasites, feeding, shelter, grooming, and general animal care. College preparatory students benefit from the course as an elective if they plan to enter college and pursue a degree in the veterinary profession. This course allows students entering the workforce after graduating high school to develop entry-level skills to become employed and to continue their education on the job.

PATHWAY COURSES

- Basic Agricultural Science
- Animal Science and Biotechnology
- Veterinary Science

CAREER CHOICES

- Animal Physical Therapist
- Animal Welfare Specialist
- Animal Care Specialist
- Artificial Insemination Technician
- Breed Association Sales/Promotion
- Cell Culture Specialist
- Companion Animal Breeder
- Companion Animal Nutrition Specialist
- Dairy Unit Herdsman/Manager
- Embryo Transfer Technician
- Veterinarian
- Veterinary Technician

INDUSTRY CREDENTIAL (Credential of Value): Veterinary Assistant

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