

CTAE PATHWAY GUIDE

DENMARK HIGH SCHOOL

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



Artificial Intelligence



ARTIFICIAL INTELLIGENCE students study 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 Developers
Computer Vision Engineer
Data Mining/Analysis
Data Scientists
Machine Learning Engineers
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 students will develop an overall understanding of cloud computing, cloud concepts, core services, security, architecture, and support. 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. Students will also dive deeply into cloud computing best practices and learn how cloud computing helps users develop a global infrastructure.

PATHWAY COURSES

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

CAREER CHOICES

Software Engineer
Cloud Engineer
Data Engineer
System Engineer
Full Stack Developer
Java Developer
Data Scientist
Systems Administrator
.NET Developer
Front-end Developer

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

Companion Animal Systems



COMPANION ANIMAL SYSTEMS students will learn the major areas of scientific agricultural production and research and learn problem solving lessons, introductory skills, and knowledge in agricultural science and agri-related technologies. This pathway also introduces students to the scientific principles that underlie the breeding and husbandry of agricultural animals, and the production, processing, and distribution of agricultural animal products. Students will also learn skills and concepts involved with the care and management of companion animals.

PATHWAY COURSES

Basic Agriculture Science
Animal Science and Biotechnology
Small Animal Care

CAREER CHOICES

Agricultural Animals
Agricultural Inspectors
Agriculture Teachers
Animal Breeders
Animal Care and Service Workers
Animal Scientists
Biological Technicians
Nonfarm Animal Caretakers
Ranch Managers
Veterinarians
Veterinary Assistants
Veterinary Technicians

INDUSTRY CREDENTIAL (Credential of Value): Precision Animal Science II

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

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

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

INDUSTRY CREDENTIAL (Credential of Value): Microsoft Technology Associate (MTA): Software Development Fundamentals

Culinary Arts



CULINARY ARTS students will complete a variety of skills required by the restaurant and food industry such as knife skills, cooking techniques, menu planning, food purchasing and costing, food safety and sanitation, and front of the house service. The pathway allows students to develop in-depth knowledge and hands-on skill mastery of culinary arts and allows them to refine hands-on production of the classic fundamentals in the commercial kitchen.

PATHWAY COURSES

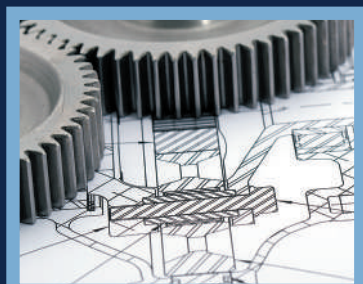
Introduction to Culinary Arts
Culinary Arts I
Culinary Arts II

CAREER CHOICES

Cake Designer
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
Pastry Chef
Personal Chef
Restaurant Entrepreneur

INDUSTRY CREDENTIAL (Credential of Value): American Culinary Federation (ACFEF) Secondary Culinary Graduate

Engineering and Technology



ENGINEERING AND TECHNOLOGY students will combine hands-on projects and rigorous curriculum to be prepared for challenging postsecondary engineering and technology problems; and build solid technical writing, comprehension, calculation, problem-solving, and technical skills. Students are encouraged to take relevant math and science courses, such as advanced algebra, chemistry, calculus, geometry, trigonometry, physics, design, and engineering concepts.

PATHWAY COURSES

Foundations of Engineering and Technology
Engineering Concepts
Engineering Applications

CAREER CHOICES

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

INDUSTRY CREDENTIAL (Credential of Value): NOCTI Engineering and OSHA 10

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Entrepreneurship



ENTREPRENEURSHIP students focus on recognizing a business opportunity, starting a business, operating and maintaining a business. Students will align business goals that focus on planning, organizing, coordinating, and controlling the resources needed to produce and provide goods and/or services that lead to owning and operating a small business. They will learn statutes and regulations affecting businesses, families, and individuals.

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 Analyst
Cost Estimator
Database Administrator
Financial Analyst or Manager
Network and Computer System
Paralegal and Legal Assistant
Personal Financial Advisor
Training and Development Manager

INDUSTRY CREDENTIAL (Credential of Value): NOCTI General Management

Fashion Marketing



FASHION MARKETING students will be introduced to the retail industry including the fundamentals of fashion marketing, key marketing concepts essential to every business, types of businesses involved in the industry, and an array of career opportunities. Students will develop skills in such areas as fashion economics, marketing segmentation and target marketing, product selection and buying, and inventory system. The pathway will also help them develop skills necessary for managing pricing, visual merchandising, advertising, special promotions, professional sales, and customer service.

PATHWAY COURSES

Marketing Principles
Fashion, Merchandising, and Retailing Essentials
Advanced Fashion, Merchandising, and Retailing

CAREER CHOICES

Advertising and Promotions Manager
Brand Managers
Entrepreneurs/Company Owners
Fashion Designers
General Merchandise Managers
Merchandise Analysts
Manufacturer's Sales Representatives
Online Merchants
Product Developers
Retail Buyers
Visual Merchandisers
Wholesale and Retail Buyers

INDUSTRY CREDENTIAL (Credential of Value): MBA Standard Marketing Program of Study/End of Program HS Exam

Financial Services



FINANCIAL SERVICES students will focus on recognizing a business opportunity, starting a business, operating and maintaining a business. Students will align business goals that focus on planning, organizing, coordinating, and controlling the resources needed to produce and provide goods and/or services that lead to owning and operating a small business. Methods for measuring the financial performance of financial institutions and investments are also analyzed.

PATHWAY COURSES

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

CAREER CHOICES

Accountant
Auditor
Business Teacher
Claims Adjuster
Financial Project Specialist
Financial Planner
Insurance Sales Agent
Research
Sales and Service

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

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Marketing and Management



MARKETING AND MANAGEMENT students will focus on managing the processes responsible for identifying, anticipating, and satisfying customer requirements in a manner that is profitable for the business. Student skills include management and entrepreneurship, marketing, buying and merchandising, marketing communications and promotion, professional sales, marketing information management and research, channel management, global marketing, and internet/online marketing.

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
- Product Development Management
- Public Relations Specialist

INDUSTRY CREDENTIAL (Credential of Value): MBA Standard Marketing Program of Study/End of Program HS Exam

Sports and Entertainment Marketing



SPORTS AND ENTERTAINMENT MARKETING students will learn about the major segments of the sports and entertainment industry and the social and economic impact the industry has on the local, state, national, and global economies. The products and services offered to consumers and the impact of marketing on these products and services are examined. Students will also have opportunities to develop managerial and analytical skills and deepen their knowledge in sports/entertainment marketing.

PATHWAY COURSES

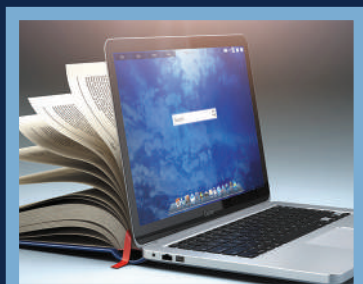
- Marketing Principles
- Introduction to Sports and Entertainment Marketing
- Advanced Sports and Entertainment Marketing

CAREER CHOICES

- Agent
- Communications Specialist
- Customer Service Representative
- Demonstrator and Product Promoter
- Entertainment Marketer
- Entrepreneur
- Market Research Analyst
- Marketing Specialist
- Media Buyer
- Product Development Management
- Public Relations Specialist

INDUSTRY CREDENTIAL (Credential of Value): MBA Standard Marketing Program of Study/End of Program HS Exam

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

INDUSTRY CREDENTIAL (Credential of Value): NOCTI Teaching as a Profession (College EDUC 2110 Credit in Georgia)

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Veterinary Science



VETERINARY SCIENCE students will learn the major areas of scientific agricultural production and research and learn problem solving lessons, introductory skills, and knowledge in agricultural science and agri-related technologies. This pathway also covers the basics of animal care. Topics covered include disease, parasites, feeding, shelter, grooming, and general animal care.

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 Tech

INDUSTRY CREDENTIAL (Credential of Value): Precision Veterinary Assistant

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