

## CTE Programs of Study

### Agriculture, Food, and Natural Resources

- Animal Science
- Applied Agricultural Engineering
- Plant Science

### Architecture and Construction

- Architectural Design

### Arts, Audio/Video Technology and Communications

- **Creative Media Production Academy\***
- Design and Multimedia Arts
- Digital Communications

### Business, Marketing, and Finance

- Accounting and Financial Services
- **Business Management and Entrepreneurship Academy\***
- Business Management

### Education and Training

- Early Learning
- Teaching and Training

### Health Science

- **Biomedical Sciences Academy\***
- Healthcare Diagnostics
- Healthcare Therapeutic

### Hospitality and Tourism

- **Culinary Arts and Hospitality Academy\***

### Human Services

- **Cosmetology Academy\***
- Family and Community Services

### Manufacturing

- Advanced Manufacturing and Machinery Mechanics

### Information Technology

- Networking Systems

### Science, Technology, Engineering, and Mathematics

- Programming and Software Development
- **STEM Academy\***

### Transportation, Distribution, and Logistics

- **Aviation and Aeronautics Academy\***

\*Multiple Programs of Study may exist in each Career Academy

## Career Icons



### Career Awareness

#### Learning ABOUT Work

Build awareness of the variety of careers available and the role of postsecondary education; broaden student options.



### Career Preparation

#### Learning THROUGH Work

Apply learning through practical experience that develops knowledge and skills necessary for success in careers and postsecondary education.



### Career Exploration

#### Learning ABOUT Work

Explore career options and postsecondary for the purpose of motivating students and to inform their decision making in high school and postsecondary education.



### Career Training

#### Learning FOR Work

Train for employment and/or postsecondary education in a specific range of occupations.

# CAREER AND TECHNICAL EDUCATION GUIDE

## Recommended Course Sequences

Agriculture, Food, and Natural Resources			
<b>Animal Science - Business and Industry or STEM Endorsement</b>			
Principles of Agriculture, Food, and Natural Resources (1 credit)	Livestock Production (1 credit)	Veterinary Medical Applications (1 credit)	<ul style="list-style-type: none"> <li>• Advanced Animal Science (1 credit)</li> <li style="text-align: center;"><b>or</b></li> <li>• Practicum in Agriculture (2 credits)</li> </ul> <i>[NOTE: Practicum is highly recommended.]</i>
<b>Applied Agricultural Engineering - Business and Industry or STEM Endorsement</b>			
Principles of Agriculture, Food, and Natural Resources (1 credit)	Agricultural Mechanics and Metal Technologies (1 credit)	Agricultural Equipment Design and Fabrication with Lab (2 credits)	Practicum in Agriculture (2 credits)
<b>Plant Science - Business and Industry or STEM Endorsement</b>			
Principles of Agriculture, Food, and Natural Resources (1 credit)	Horticulture Science (1 credit)	Floral Design 1 (1 credit)	<ul style="list-style-type: none"> <li>• Advanced Floral Design (1 credit)</li> <li style="text-align: center;"><b>and/or</b></li> <li>• Practicum in Agriculture (2 credits)</li> </ul>
Architecture and Construction			
<b>Architectural Design - Business and Industry or STEM Endorsement</b>			
Principles of Architecture (1 credit)	Architectural Design I (1 credit)	Computer Aided Drafting for Architecture (1 credit)	Architectural Design II (2 credits)
			Interior Design II (2 credits)

## Arts, Audio/Video Technology and Communications

### Creative Media Production Academy (NHS) - Business and Industry Endorsement

\*Students in this academy can take any course in the academy as long as they have met the prerequisite for the course. For example, students must take a career exploration course before taking the corresponding career preparation course.

Principles of Arts, Audio/Video Technology, and Communications (1 credit)	Audio/Video Production I (1 credit)	Audio/Video Production II/ Lab (NHSTV) (2 credits)	Practicum in Audio/Video Production (NHSTV) (Internship) (2 credits)
	Commercial Photography I (1 credit)	Commercial Photography II (1 credit)	Practicum in Commercial Photography (Internship) (2 credits)
	Graphic Design and Illustration I (1 credit)	Graphic Design and Illustration II (1 credit)	Practicum in Graphic Design and Illustration (2 credits)

### Design and Multimedia Arts - Business and Industry Endorsement

Principles of Arts, Audio/Video Technology, and Communications (1 credit)	Graphic Design and Illustration I (1 credit)	Commercial Photography I (1 credit)	Career Preparation I (2 credits)
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### Digital Communications - Business and Industry Endorsement

Principles of Arts, Audio/Video Technology, and Communications (1 credit)	Audio/Video Production I (1-2 credits)	Audio/Video Production II (1-2 credits)	Career Preparation I (2 credits)
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## Business, Marketing, and Finance

### Accounting and Financial Services - Business and Industry Endorsement

Principles of Business, Marketing and Finance (1 credit)	Accounting I (1 credit)	Financial Mathematics (1 credit)	Practicum in Business Management (2 credits) <b>or</b> Career Preparation I (2 credits)
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### Business Management and Entrepreneurship Academy (EHS) - Business and Industry Endorsement

Principles in Business, Marketing, and Finance (BME Fundamentals) (1 credit)	Virtual Business (BME Operations I) (.5 credit) <b>and</b> Social Media Marketing (BME Operations II) (.5 credit)	Entrepreneurship (BME Innovation) (1 credit)	Practicum in Business Management/VEI (BME Capstone) (2 credits)
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<b>Business Management - Business and Industry Endorsement</b>				
<b>Option 1</b>	Principles of Business, Marketing and Finance (1 credit)	Business Management (1 credit)	<ul style="list-style-type: none"> <li>• Business Law (1 credit) <b>or</b></li> <li>• Business Information Management I (1 credit)</li> </ul>	<ul style="list-style-type: none"> <li>• Practicum in Business Management (2 credits)</li> </ul>
	<b>Option 2</b>	Principles of Business, Marketing and Finance (1 credit)	Business Information Management I (1 credit)	Business Information Management II (1 credit)

## Education and Training

### Early Learning - Public Service Endorsement

#### Route 1

<b>9th Grade</b>	Principles of Human Services (1 credit)
<b>10th Grade</b>	Child Development (1 credit)
<b>11th Grade</b>	Child Guidance (2 credits)
<b>12th Grade</b>	Practicum in Early Learning (2 credits)

#### Route 2

<b>7th Grade</b>	Lifetime Nutrition Wellness (.5 credit) / Interpersonal Studies (.5 credit)
<b>8th Grade</b>	Principles of Human Services (1 credit)
<b>9th Grade</b>	Principles of Education and Training (1 credit)
<b>10th Grade</b>	Child Development (1 credit)
<b>11th Grade</b>	Child Guidance (2 credits)
<b>12th Grade</b>	Practicum in Early Learning (2 credits)

<b>Teaching and Training - Public Service Endorsement</b>				
<b>Route 1</b>				
<b>9th Grade</b>		Principles of Education and Training (1 credit)		
<b>10th Grade</b>		Child Development (1 credit)		
<b>11th Grade</b>		Instructional Practices (2 credits)		
<b>12th Grade</b>		Practicum in Education and Training (2 credits)		
<b>Route 2</b>				
<b>7th Grade</b>		Lifetime Nutrition Wellness (.5 credit) / Interpersonal Studies (.5 credit)		
<b>8th Grade</b>		Principles of Human Services (1 credit)		
<b>9th Grade</b>		Principles of Education and Training (1 credit)		
<b>10th Grade</b>		Child Development (1 credit)		
<b>11th Grade</b>		Instructional Practices (2 credits)		
<b>12th Grade</b>		Practicum in Education and Training (2 credits)		
<b>Health Science</b>				
<b>Biomedical Sciences Academy (BNHS) - Public Service or STEM Endorsement</b>				
<b>PLTW Academy Courses</b>	PLTW Principles of Biomedical Sciences (PBS) (1 credit)	PLTW Human Body Systems (HBS) (1 credit)	PLTW Medical Interventions (MI) (1 credit)	PLTW Biomedical Innovation (BI) (1 credit) or Alternative Certification Course
	Suggested Courses	Honors Biology	Honors Chemistry	AP Biology or AP Chemistry
				Advanced Animal Science, Forensic Science, or Statistics
<b>Healthcare Diagnostics - Public Service or STEM Endorsement</b>				
Principles of Health Science (1 credit)	Health Science Theory (1 credit)	Anatomy and Physiology (1 credit)	Practicum in Health Science (EMT) (2 credits)	
<b>Healthcare Therapeutic - Public Service or STEM Endorsement</b>				
Principles of Health Science (1 credit)	Health Science Theory (1 credit)	Anatomy and Physiology (1 credit)	Practicum in Health Science (Certified Medical Assistant) (2 credits)	

## Hospitality and Tourism

### Culinary Arts and Hospitality Academy (BNHS) - Business and Industry Endorsement

Principles of Hospitality & Tourism (1 credit)	Intro to Culinary Arts (1 credit)	Culinary Arts (2 credits)	Practicum in Culinary Arts/ Extended Practicum in Culinary Arts (3 credits)

## Human Services

### Cosmetology Academy (SAHS) - Public Service Endorsement

No 9th Grade course offered.	No 10th Grade course offered.	Cosmetology I with Lab (3 credits)	Cosmetology II with Lab (3 credits)

### Family and Community Services - Public Service Endorsement

#### Route 1

	Principles of Human Services (1 credit)
	Family and Community Services (1 credit)
	Counseling and Mental Health (1 credit)
	Practicum in Human Services (2 credits)

#### Route 2

	Lifetime Nutrition Wellness (.5 credit) / Interpersonal Studies (.5 credit)
	Principles of Human Services (1 credit)
	Family and Community Services (1 credit)
	Counseling and Mental Health (1 credit)
	Practicum in Human Services (2 credits)
	Extended Practicum in Human Services (3 credits)

Information Technology			
Networking Systems - Business and Industry or STEM Endorsement			
Principles of Information Technology (1 credit)	Computer Maintenance (1 credit)	Networking (1 credit)	Practicum in Information Technology (2 credits)
			Independent Study in Technology Applications (1 credit)
Manufacturing			
Advanced Manufacturing and Machinery Mechanics - Business and Industry or STEM Endorsement			
Blueprint Reading for Manufacturing (1 credit)	Manufacturing Engineering Technology I (1 credit)	<p style="text-align: center;"><b>This program is being developed.</b></p> <p style="text-align: center;"><b>New courses will be available in 23-24.</b></p>	
Science, Technology, Engineering, and Mathematics			
Programming and Software Development - Business and Industry or STEM Endorsement			
Computer Science I* (1 credit)	Computer Science II* (1 credit)	Computer Science III* (1 credit)	Practicum in Information Technology (2-3 credits)
			Independent Study in Technology Applications (1 credit)

\*NOTE: Computer Science I, II, and III satisfy state requirements for Languages other than English (LOTE)

<b>STEM Academy (NHS) - Business and Industry or STEM Endorsement</b>				
Science	STEM Honors Biology (SC.25H/AC)	STEM Honors Chemistry (SC.27H/AC)	STEM OnRamps Physics (D92OR/AC)	Advanced Science
Math	STEM Honors Geometry (M.112H/AC)	STEM OnRamps Algebra II (D94OR/AC)	Honors Precalculus or OnRamps Precalculus	AP Calculus AB or BC
English	STEM Honors English I (ELA.1H/AC)	STEM Honors English II (ELA.2H/AC)	STEM OnRamps English III (D91OR/AC)	STEM English IV (0024/AC) <b>or</b> STEM English IV AP (ELA.2A/AC) <b>or</b> DC Technical & Business Writing (CT.D90025)
PLTW Academy Courses	PLTW Introduction to Engineering Design (IED) (1 credit) <b>and</b> Computer Science I (LOTE) (CT.849/AC) (1 credit)	PLTW Aerospace Engineering (AE) <b>or</b> PLTW Civil Engineering and Architecture (CEA) <b>or</b> PLTW Digital Electronics (DE) <b>or</b> PLTW Cyber Security (CS) (ALL 1 credit)	Engineering Science (PLTW Principles of Engineering - POE) (1 credit)	PLTW Engineering Design and Development (EDD) (1 credit)
Optional STEM Courses	X	Computer Science II (LOTE) <b>or</b> Foundations of Cybersecurity (PLTW Cybersecurity)	Honors Computer Science III <b>or</b> Foundations of Cybersecurity (PLTW Cybersecurity) <b>or</b> Scientific Research and Design STEM	Practicum in STEM <b>or</b> Project-Based Research



## Transportation, Distribution, and Logistics

### Aviation and Aeronautics Academy (EHS) - Business and Industry or STEM Endorsement

<b>Aviation Mechanics* (TCCD)</b>	Introduction to Aerospace and Aviation [1 HS Credit]	Introduction to Aircraft Technology [1 HS Credit]	Aircraft Airframe Technology (Dual Credit) [2 HS Credits] <b>OR</b> Aircraft Airframe Tech [3 HS Credits]	Aircraft Powerplant Technology (Dual Credit) [2 HS Credits] <b>OR</b> Aircraft Powerplant Technology/Advanced Transportation Systems Laboratory (Dual Credit) [3 HS Credits]
<b>Drone (Unmanned Flight)</b>	Introduction to Aerospace and Aviation [1 HS Credit]	Introduction to Aircraft Technology [1 HS Credit]	Introduction to Unmanned Aerial Vehicles [1 HS Credit]	Project-Based Research First Time Taken [1 HS Credit]
<b>Pilot*** (EHS/TCCD)</b>	Introduction to Aerospace and Aviation [1 HS Credit]	Introduction to Aircraft Technology [1 HS Credit]	Project-Based Research First Time Taken [1 HS Credit] (EHS) <b>OR</b> Practicum in Transportation Systems/Extended Practicum in Transportation Systems First Time Taken (Dual Credit) [3 HS Credits]	<b>Private Pilot (TCCD)</b>
				Practicum in Transportation Systems/Extended Practicum in Transportation Systems First Time Taken (Dual Credit) [3 HS Credits] <b>OR</b> Practicum in Transportation Systems/Extended Practicum in Transportation Systems Second Time Taken (Dual Credit) [3 HS Credits]
				<b>Private Pilot (Simulator)</b>
				Practicum in Transportation Systems First Time Taken [2 HS Credits] (EHS)

**Dual Credit Courses offered throughout the program will be determined by the college in partnership with the Academy Facilitator.**

\* During their Junior and Senior years, students in the Aviation Mechanics Pathway will take two dual credit courses each semester. Completion of TSIA-2 ELAR and Mathematics is required for TCC enrollment. In addition, many of these courses require a high-stakes FAA regulated exam that must be passed in order to pass the class.

\*\* During their Senior year, students in the TCC Private Pilot Pathway will take two dual credit courses each semester. Completion of TSIA-2 ELAR and Mathematics may be required for TCC enrollment. In addition, many of these courses require a high-stakes FAA regulated exam that must be passed in order to pass the class.