

# Career and Technical Education



**NORTHWEST ISD**  
**Career & Technical**  
**Education**

## CTE Career Clusters and Programs of Study

### Agriculture, Food, and Natural Resources

- Animal Science
- Applied Agricultural Engineering
- Plant Science

### Architecture and Construction

- Architectural Design
- **Construction Academy\***

### Arts, Audio/Video Technology and Communications

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

### Business, Marketing, and Finance

- **Business Management and Entrepreneurship Academy\***
- Business Management

### Education and Training

- Early Learning
- Teaching and Training

### Engineering

- **STEM Academy\***

### Health Science

- **Biomedical Sciences Academy\***
- Health Science

### Hospitality and Tourism

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

### Human Services

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

### Information Technology

- Networking Systems (phasing out)
- Programming and Software Development

### Manufacturing

- Advanced Manufacturing

### Transportation, Distribution, and Logistics

- **Aviation Academy\***

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

# TEA CTE Completer Guide

## Program of Study Accountability

Completion of a program of study is among the indicators used for evaluating the performance of high school campuses and districts that include high school campuses.

## Completer

A student served by an LEA who completes, passes, and receives credit for three or more high school CTE courses for four or more credits, including at least one level 3 or level 4 course, from within the same program of study.

A CTE completer must meet all of the criteria, from within the same program of study:

- 3 or more CTE courses for
- 4 or more credits, with at least
- One course (or more) at Level 3 or 4



### CTE Level 1

#### *Learning ABOUT Work*

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



### CTE Level 3

#### *Learning THROUGH Work*

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



### CTE Level 2

#### *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.



### CTE Level 4

#### *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

#### Animal Science - Business and Industry Endorsement

Principles of Agriculture, Food, and Natural Resources (1 credit)	Livestock and Poultry Production (1 credit)	Veterinary Medical Applications (1 credit)	Advanced Animal Science (1 credit) <b>or</b> Practicum in Agriculture (2 credits) <i>[NOTE: Practicum is highly recommended.]</i>

#### Applied Agricultural Engineering - Business and Industry Endorsement

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)

#### Plant Science - Business and Industry Endorsement

Principles of Agriculture, Food, and Natural Resources (1 credit)	Horticulture Science (1 credit)	<ul style="list-style-type: none"> <li>• Floral Design 1 (1 credit)</li> <li><b>or</b></li> <li>• Greenhouse Operations and Production (1 credit)</li> </ul>	Advanced Floral Design (1 credit) <b>and/or</b> Practicum in Agriculture (2 credits)

### Architecture and Construction

#### Architectural Design - Business and Industry Endorsement

Principles of Architecture (1 credit)	Architectural Design I (1 credit)	Architectural Design II (2 credits)	Computer Aided Drafting for Architecture (1 credit)

#### Construction Academy - Business and Industry Endorsement

Principles of Construction (1 credit)	Building Maintenance Technology I (2 credits)	Building Maintenance Technology II (2 credits)  <b>Course Available in 2027-2028</b>	Practicum in Construction Technology (2 credits)  <b>Course Available in 2028-2029</b>

## Arts, Audio/Video Technology and Communications

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

Principles of Arts, Audio/Video Technology, and Communications	Audio/Video Production I	Audio/Video Production II (NHSTV)	<ul style="list-style-type: none"> <li>• Practicum in Audio/ Video Production (NHSTV) (Internship) or</li> <li>• Digital Design and Media Production</li> </ul>	
	Commercial Photography I	Commercial Photography II	<ul style="list-style-type: none"> <li>• Practicum in Commercial Photography (Internship)</li> <li>• Digital Design and Media Production</li> </ul>	
	Graphic Design and Illustration I	Graphic Design and Illustration II	<ul style="list-style-type: none"> <li>• Practicum in Graphic Design and Illustration (Internship)</li> <li>• Digital Design and Media Production</li> </ul>	

### 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) <b>or</b> Commercial Photography I (1 credit)	Commercial Photography II (1 credit)	<ul style="list-style-type: none"> <li>• Practicum in Commercial Photography (2 credits) or</li> <li>• Digital Design and Media Production (1 credit)</li> </ul>	

### 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)	<ul style="list-style-type: none"> <li>• Practicum in Audio/ Video Production (2 credits) or</li> <li>• Design and Media Production (1 credit)</li> </ul>	

## Business, Marketing and Finance

### Business Management and Entrepreneurship Academy (EHS) - Business and Industry Endorsement

<b>BME Fundamentals</b> Principles in Business, Marketing, and Finance (1 credit)	<b>BME Operations</b> Entrepreneurship I (1 credit)	<b>BME Innovation</b> Entrepreneurship II (1 credit)	<b>BME Capstone</b> Practicum in Business Management/VEI (2 credits) <b>or</b> Business Management Project-Based Capstone (1 credit)

## Business Management - Business and Industry Endorsement

Principles of Business, Marketing and Finance (1 credit)	Business Management (1 credit)	Foundations in Business Communications and Technology (1 credit)	Business Law (1 credit) <b>or</b> Business Communications and Technology (1 credit)

## Education and Training

### Early Learning - Public Service Endorsement

Route 1: Recommended Course Sequence	
9th Grade	 Principles of Education and Training (1 credit)
10th Grade	 Child Development (1 credit)
11th Grade	 Child Guidance (2 credits)
12th Grade	 Practicum in Early Learning (2 credits)
Route 2: Recommended Course Sequence	
8th Grade	 Principles of Human Services (1 credit)
9th Grade	 Principles of Education and Training (1 credit)
10th Grade	 Child Development (1 credit)
11th Grade	 Child Guidance (2 credits)
12th Grade	 Practicum in Early Learning (2 credits)

## Teaching and Training - Public Service Endorsement

Route 1: Recommended Course Sequence	
9th Grade	 Principles of Education and Training (1 credit)
10th Grade	 Child Development (1 credit)
11th Grade	 Instructional Practices (2 credits)
12th Grade	 Practicum in Education and Training (2 credits)
Route 2: Recommended Course Sequence	
8th Grade	 Principles of Human Services (1 credit)
9th Grade	 Principles of Education and Training (1 credit)
10th Grade	 Child Development (1 credit)
11th Grade	 Instructional Practices (2 credits)
12th Grade	 Practicum in Education and Training (2 credits)

# Engineering

## STEM Academy (NHS) - Business and Industry or STEM Endorsement

Recommended Course Sequences				
	9th Grade	10th Grade	11th Grade	12th Grade
<b>Science</b>	STEM Honors Biology (SC.25H/AC)	STEM Honors Chemistry (SC.27H/AC)	STEM OnRamps Physics (D92OR/AC)	Advanced Science
<b>Math</b>	STEM Honors Geometry (M.112H/AC)	STEM OnRamps Algebra II (D94OR/AC)	Honors/AP Precalculus or OnRamps Precalculus	AP Calculus AB or BC
<b>English</b>	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)
<b>PLTW Academy Courses</b>				
	Engineering Design Process (1 credit)	Engineering Design & Presentation (1 credit)	<ul style="list-style-type: none"> <li>• Aerospace Design I <b>or</b></li> <li>• Civil Engineering I <b>or</b></li> <li>• Digital Electronics <b>or</b></li> <li>• Advanced Eng Des Presentation (2 credits)</li> </ul>	Engineering Design and Problem Solving (1 credit)
<b>Optional STEM Courses</b>	Honors Computer Science I (LOTE) (CT.849/AC) (1 credit)	Honors Computer Science II (LOTE) <b>or</b> Foundations of Cybersecurity	Honors Computer Science III <b>or</b> Foundations of Cybersecurity <b>or</b> Scientific Research and Design STEM	Practicum in Engineering <b>or</b> CTE Project Based Capstone STEM

# Health Science

## Biomedical Sciences Academy (BNHS) - Public Service or STEM Endorsement

	9th Grade	10th Grade	11th Grade	12th Grade
<b>PLTW Academy Courses</b>	PLTW Principles of Biomedical Sciences (PBS) (1 credit)	PLTW Human Body Systems (HBS) (1 credit)	PLTW Medical Interventions (1 credit)	PLTW Biomedical Innovation (1 credit)
<b>Suggested Courses</b>	Honors Biology	Honors Chemistry	AP Biology or AP Chemistry	Advanced Animal Science, Forensic Science, or Statistics

## Health Sciences - Public Service Endorsement

Principles of Health Science (1 credit)	Health Science Theory (1 credit)	Anatomy and Physiology (1 credit)	Practicum in Health Science (CCMA or EMT) (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 (NHS) - Business and Industry Endorsement

No 9th Grade course offered.	No 10th Grade course offered.	<ul style="list-style-type: none"> <li>• Cosmetology I with Lab (3 credits) and</li> <li>• Intro to Cosmetology (1 credit)</li> </ul>	Cosmetology II with Lab (3 credits)

## Information Technology

### Networking Systems - Business and Industry or STEM Endorsement

No 9th Grade course offered.	No 10th Grade course offered.	Networking (1 credit)	Practicum in Information Technology (2 credits)
			Independent Study in Technology Applications (1 credit)

### Programming and Software Development - Business and Industry or STEM Endorsement

Computer Science I/ Honors Computer Science I* (1 credit)	Computer Science II / Honors Computer Science II* (1 credit)	Honors Computer Science III* (1 credit)	Practicum in Information Technology (2-3 credits)
			Independent Study in Technology Applications (1 credit)

## Manufacturing

### Advanced Manufacturing - Business and Industry or STEM Endorsement

Principles of Manufacturing (1 credit)	Manufacturing Engineering Technology I (1 credit)	Manufacturing Engineering Technology II (1 credit)	Practicum in Manufacturing (2 credits)

# Transportation, Distribution, and Logistics

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

	1st Year	2nd Year	3rd Year	4th Year
<b>Aviation Maintenance* (TCCD)</b>	Introduction to Aerospace and Aviation [1 HS Credit]	Introduction to Aircraft Technology [1 HS Credit]	DC Aircraft Airframe Technology/Advanced Transportation Systems Laboratory (Dual Credit) [3 HS Credits]	DC 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]	Practicum in Transportation Systems First Time Taken [2 HS Credits]
<b>Aviation (Flight)** (EHS/TCCD)</b>	Introduction to Aerospace and Aviation [1 HS Credit]	Introduction to Aircraft Technology [1 HS Credit]	Aviation Ground School [1 HS Credit] (EHS)	<b>Private Pilot (TCCD)</b>
				Practicum in Transportation Systems/Extended Practicum in Transportation Systems First Time Taken (Dual Credit) [3 HS Credits]
				<b>Private Pilot (Simulator)</b>
				Practicum in Transportation Systems First Time Taken [2 HS Credits] (EHS)