



2025-2026

Career & Technical Education

Career and Technical Education Programs of Study Table

Programs of Study	9th Grade	10th Grade	11th Grade	12th Grade	Certification
Agriculture					
Animal Science	Principles of Agriculture, Food and Natural Resources	Small Animal Management and Equine Science	Livestock Production	Practicum in Agriculture, Food and Natural Resources	<i>Elanco Fundamentals of Animal Science</i>
Animal Science (Vet Med)	Principles of Agriculture, Food and Natural Resources (Also Offered in 8th grade as high school credit)	Small Animal Management and Equine Science	Veterinary Medical Applications	Advanced Animal Science (Also a Science Credit) ; Practicum of Veterinary Medicine	<i>Elanco Veterinary Medical Applications; Certified Veterinary Assistant, Level 1</i>
Agriculture Technology and Mechanical Systems (AG Mechanics)	Principles of Agriculture, Food and Natural Resources (Also Offered in 8th grade as high school credit)	Agricultural Mechanics and Metal Technologies	Agricultural Structures Design and Fabrications	Agriculture Equipment and Structure Fabrication; or Practicum in Agriculture, Food, and Natural Resources (Applies Agriculture Engineering)	<i>AWS D9.1 Sheet Metal Welding</i>
Plant Science	Principles of Agriculture, Food and Natural Resources (Also Offered in 8th grade as high school credit)	Floral Design I (Also a Fine Arts Credit)	Advanced Floral Design	Plant and Soil Science (Also a Science Credit)	<i>BASF Plant Science</i>
Plant Science (Floral Design)	Principles of Agriculture, Food and Natural Resources (Also Offered in 8th grade as high school credit)	Floral Design I (Also a Fine Arts Credit)	Advanced Floral Design	Practicum in Agriculture, Food and Natural Resources	<i>Principles of Floral Design; Texas State Florist's Association Knowledge, Level 1, Level II</i>
Audio/Video Technology					
Digital Communications (Audio/Video)	Principles of Arts, Audio/Video Technology, and Communications	Audio/Video Production I (Dual Credit)	Audio/Video Production II (Dual Credit)	Practicum of Audio Video Production	<i>Adobe Certified Professional in Digital Video Using Adobe Premier Pro</i>
Graphic Design & Interactive Media (Photography)	Principles of Arts, Audio/Video Technology, and Communications	Commercial Photography I	Commercial Photography II	Practicum in Commercial Photography	<i>Adobe Certified Professional in Visual Design using Adobe Photoshop</i>
Graphic Design & Interactive Media (Video Game Design)	Principles of Arts, Audio/Video Technology, and Communications	Video Game Programming	Advanced Video Game Programming	Practicum in Animation	<i>Adobe Certified Professional Graphic Design & Illustration using Adobe Illustrator</i>
Graphic Design & Interactive Media (Yearbook)	Principles of Arts, Audio/Video Technology, and Communications	Graphic Design and Illustration I	Graphic Design and Illustration II	Practicum in Graphic Design and Illustration	<i>Adobe Certified Professional Print & Digital Media Publication using Adobe</i>
Business, Marketing and Finance					
Accounting and Financial Services	Principles of Business, Marketing, and Finance	Accounting I; Financial Mathematics (Also a Math Credit)	Accounting II (Also a Math Credit) ; Financial Analysis	Practicum in Entrepreneurship	<i>Accounting - Basics; Accounting Foundations; Intuit QuickBooks Certified User</i>
Marketing and Sales	Principles of Business, Marketing, and Finance	Sports and Entertainment Marketing, and Social Media Marketing	Advertising and Sports and Entertainment Marketing II	Career Preparation I	<i>Stukent Social Media Marketing</i>
Real Estate	Principles of Business, Marketing, and Finance	Financial Mathematics (Also a Math Credit)	Fundamentals of Real Estate; Financial Analysis	Commercial Lending and Real Estate	<i>Real Estate Sales Agent License</i>
Education and Training					
Teacher and Training	Principles of Human Services; Principles of Education and Training	Child Development (Dual Credit)	Instructional Practices (Ready Set, Teach I) (Dual Credit)	Practicum in Education and Training (Ready, Set, Teach II)	<i>Educational Aide I</i>

Energy Career Cluster					
Refining and Chemical Process (11th/12th Dual Credit - Students Must Have Own Transportation to COM)			<ul style="list-style-type: none"> • Introduction to Process Technology • Introduction to Instrumentation and Electrical 	<ul style="list-style-type: none"> • Petrochemical Safety, Health, and Environment • Advanced Instrument and Electrical 	Dual Credit Earned
Engineering					
Engineering Foundations	Introduction to Engineering Design (PLTW) or Principles of Applied Engineering (offered in 8th grade)	Engineering Science (Also a Science Credit)	Engineering Design and Presentation I	Engineering Design and Presentation II	Certified SolidWorks Associate
Engineering Foundations (Aerospace)	Introduction to Engineering Design (PLTW) or Principles of Applied Engineering (offered in 8th grade)	Engineering Science (Also a Science Credit)	Aerospace Engineering (PLTW)	Practicum in STEM	Autodesk Associate (Certified User) Fusion 360
Engineering Foundations (Robotics)	Introduction to Engineering Design (PLTW) or Principles of Applied Engineering (offered in 8th grade)	Engineering and Design I	Robotics I	Robotics II (Also a Math Credit)	Autodesk Associate (Certified User) Fusion 360
Human Services					
Cosmetology and Personal Care Services (Barbering)		Principles of Cosmetology Design and Color Theory	Barbering I	Barbering II	Barber Operating License
Cosmetology and Personal Care Services (Cosmetology)		Introduction to Cosmetology	Cosmetology I	Cosmetology II	Cosmetology Operator License
Health Science					
Healthcare Diagnostics (Imaging)	Introduction to Imaging Technology; Medical Terminology (Dual Credit)	Imaging Technology I (Dual Credit)	Imaging Technology II (Dual Credit)	Practicum in Health Science in Imaging (Dual Credit)	Limited Medical Radiologic Technologist
Healthcare Therapeutics	Principles of Health Science	Medical Terminology	Medical Microbiology (Also a Science Credit)	Anatomy and Physiology (Also a Science Credit)	Science Credit/Honors Course
Healthcare Therapeutics (EMT, EKG, PCT, Pharm Tech, Dental)	Principles of Health Science	Medical Terminology	Health Science Theory or Pharmacology (Pharm Tech)	Practicum in Health Science (EMT, EKG, PCT, PharmTech, Dental)	Emergency Medical Technician - Basic; Certified EKG Technician; Patient Care Technician; Pharmacy Technician; Registered Dental Assistant X-Ray
Information Technology					
Cybersecurity	Fundamentals of Computer Science	Computer Science I (Also a LOTE Credit)	Networking + Networking Lab (COM ONLINE Dual Credit)	Practicum in Information Technology (COM ONLINE Dual Credit)	Dual Credit Earned
Programming and Software Development	Fundamentals of Computer Science	Computer Science I (Also a LOTE Credit)	Computer Science II (Also a LOTE Credit)	Practicum in STEM	Certified Entry-Level Python Programmer
Law and Public Services					
Law Enforcement	Principles of Law, Public Safety, Corrections, and Security	Law Enforcement I	Law Enforcement II	Forensic Science (Also a Science Credit) ; or Counseling and Mental Health; Practicum of Law, Public Safety, Corrections, and Security	IAED Emergency Telecommunicator
Transportation					
Automotive	Automotive Basics	Automotive Technology I: Maintenance and Light Repair	Automotive Technology II: Automotive Services	Practicum in Transportation Systems	ASE Entry-Level Automobile

*Classes offered at Junior High Level: Principles of Agriculture, Food and Natural Resources; Principles of Applied Engineering; Principles of Human Services; & Career Exploration

Agriculture, Food, and Natural Resource Career Cluster

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Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) career cluster focuses on the essential elements of life, food, water, land, and air. This career cluster includes occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

Statewide Program of Study: **Animal Science**

The Animal Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of animals and other living organisms. This program of study includes applying biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field, which could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students will research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.

Secondary Courses for High School Credit



9th Grade

- Principles of Agriculture, Food, and Natural Resources
(Also offered in 8th grade as a high school credit)

10th Grade

- Small Animal Management
- Equine Science

11th Grade

- Livestock Production

12th Grade

- Advanced Animal Science
- Veterinary Medical Applications
- Veterinary Medical Applications + Agricultural Laboratory and Field Experience
- Practicum in Agriculture, Food, and Natural Resources

Aligned Advanced Academic Courses

AP or IB

AP Biology
IB Biology SL
IB Biology HL

Dual Credit

Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow an animal scientist in a biology lab to learn about applying science to understand animals and wildlife
- Intern in a veterinary clinic, caring for animals and wildlife being treated in the clinic

Expanded Learning Opportunities

- Participate in an FFA career, leadership, and speaking contest like an agriscience fair
- Attend an agricultural industry seminar



Aligned Industry-Based Certifications

- Certified Veterinary Assistant, Level I
- Elanco Fundamentals of Animal Science Certification



Example Postsecondary Opportunities

Apprenticeships

- Reproduction Technician

Associate Degrees

- Biological and Physical Sciences
- Entomology

Bachelor's Degrees

- Animal Science
- Zoology/Animal Biology

Master's, Doctoral, and Professional Degrees

- Animal Sciences
- Biotechnology

Additional Stackable IBCs/Licensures

- Veterinarian
- Certified Veterinary Technician



Example Aligned Occupations

Veterinary Assistants and Laboratory Animal Caretakers

Median Wage: \$29,906
Annual Openings: 1,348
10-Year Growth: 24%

Veterinary Technologists and Technicians

Median Wage: \$33,679
Annual Openings: 1,217
10-Year Growth: 24%

Veterinarian

Median Wage: \$103,160
Annual Openings: 347
10-Year Growth: 26%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024

For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study/additional-resources>




Agriculture, Food, and Natural Resources Career Cluster



Statewide Program of Study: *Animal Science*

Course Information


9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Agriculture, Food, and Natural Resources* Also offered in 8th grade as a high school credit 13000200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	




10th Grade

Course	Prerequisites Corequisites	Career Clusters
Small Animal Management 13000400 (0.5 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None Course Fee: \$10.00	
Equine Science 13000500 (0.5 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Livestock Production 13000300 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Advanced Animal Science 13000700 (1 credit)	Prerequisites: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production Corequisites: None Recommended Prerequisites: Veterinary Medical Applications Recommended Corequisites: None	
Veterinary Medical Applications + Agricultural Laboratory and Field Experience 13000610 (2 credits)	Prerequisites: Equine Science, Small Animal Management, or Livestock Production Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None Course Fee: \$20.00	
Practicum in Agriculture, Food, and Natural Resources* First Time Taken: 13002500 (2 credits) Second Time Taken: 13002510 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: a minimum of one credit from the courses in the AFNR career cluster Recommended Corequisites: None	

For additional information on the **Agriculture, Food, and Natural Resources** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) career cluster focuses on the essential elements of life, food, water, land, and air. This career cluster includes occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

Statewide Program of Study: Agricultural Technology and Mechanical Systems

The Agricultural Technology and Mechanical Systems program of study focuses on occupational and educational opportunities associated with applying engineering technology and biological science to agricultural problems related to power and machinery, electrification, structures, soil and water use, and processing agricultural products. This program of study includes diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

Secondary Courses for High School Credit

- 9th Grade** • Principles of Agriculture, Food, and Natural Resources
(Also offered in 8th grade as a high school credit)
- 10th Grade** • Agricultural Mechanics and Metal Technologies +
Agricultural Laboratory and Field Experience
- 11th Grade** • Agricultural Structures Design and Fabrication +
Agricultural Laboratory and Field Experience
- 12th Grade** • Practicum in Agriculture, Food, and Natural Resources

Aligned Advanced Academic Courses

Dual Credit Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Participate in a farm mechanic apprenticeship at an equipment production company
- Intern at an equipment manufacturing facility working with agricultural engineers

Expanded Learning Opportunities

- Participate in an FFA career, leadership, and speaking contest like an agriscience fair
- Participate in an agriculture robotics event



Aligned Industry-Based Certifications

- AWS D9.1 Sheet Metal Welding



Example Postsecondary Opportunities

Apprenticeships

- Farm Equipment Mechanic I

Associate Degrees

- Diesel Mechanics Technology
- Industrial Mechanics and Maintenance Technology

Bachelor's Degrees

- Agricultural Engineering
- Agricultural Systems Management

Master's, Doctoral, and Professional Degrees

- Agricultural Engineering
- Industrial Technology

Additional Stackable IBCs/Licensures

- Diesel Equipment Technology-Off Highway Specialization CER1
- Accredited Farm Manager



Example Aligned Occupations

Farm Equipment Mechanics and Service Technicians

Median Wage: \$46,582
Annual Openings: 326
10-Year Growth: 23%

Mobile Heavy Equipment Mechanics

Median Wage: \$57,943
Annual Openings: 2637
10-Year Growth: 31%

Farmers, Ranchers, and Other Agricultural Managers

Median Wage: \$65,490
Annual Openings: 28,020
10-Year Growth: 4%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>




Agriculture, Food, and Natural Resources Career Cluster


Statewide Program of Study: Agricultural Technology and Mechanical Systems

Course Information


9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Agriculture, Food, and Natural Resources* Offered in 8th grade as high school credit 13000200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	


10th Grade

Course	Prerequisites Corequisites	Career Clusters
Agricultural Mechanics and Metal Technologies + Agricultural Laboratory and Field Experience 13002210 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of AFNR Recommended Corequisites: None Course Fee: \$100.00	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Agricultural Structures Design and Fabrication + Agricultural Laboratory and Field Experience 13002310 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Agricultural Mechanics and Metal Technologies Recommended Corequisites: None Course Fee: \$100.00	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Agriculture, Food, and Natural Resources* First Time Taken: 13002500 (2 credits) Second Time Taken: 13002510 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: a minimum of one credit from the courses in the AFNR career cluster Recommended Corequisites: None Course Fee: \$100.00	

- **Required Safety Equipment for Level 2, 3, & 4 (provided by student)**
 - Safety Glasses (z87 coded)
 - Leather Gauntlet style gloves no cloth, rubber, or garden gloves of any kind
 - Leather boots
 - Blue jeans (no holes)
 - Long sleeve shirt with no pocket or pockets with flap cover (cotton or fire retardant only)
 - Welding hood preferable auto darkening (available at Harbor Freight)
 - Welding cap

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Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) career cluster focuses on the essential elements of life, food, water, land, and air. This career cluster includes occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

Statewide Program of Study: Plant Science

The Plant Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of plants and other living organisms. This program of study includes the application of biology and life science to real-world life processes of plants and vegetation, either in laboratories or in the field.



Secondary Courses for High School Credit

- | | |
|-------------------|---|
| 9th Grade | <ul style="list-style-type: none"> Principles of Agriculture, Food, and Natural Resources (Also offered in 8th grade as a high school credit) |
| 10th Grade | <ul style="list-style-type: none"> Floral Design |
| 11th Grade | <ul style="list-style-type: none"> Advanced Floral Design |
| 12th Grade | <ul style="list-style-type: none"> Advanced Plant and Soil Science Practicum in Agriculture, Food, and Natural Resources |

Aligned Advanced Academic Courses

AP or IB	AP Biology AP Environmental Science IB Biology SL IB Biology HL	AP Chemistry IB Chemistry SL IB Chemistry HL
Dual Credit	Dual credit offerings will vary by Local Education Agency	

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Work in a part-time job at a landscaping company to learn about production and management of plants. Intern at an agricultural research company, working alongside a biological technician to learn about application of biology to plant production
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in an FFA career, leadership, and speaking contest like an agriscience fair Participate in an industry-related competition like an agriscience fair



Aligned Industry-Based Certifications

- | | |
|---|---|
| <ul style="list-style-type: none"> BASF Plant Science Certification Principles of Floral Design Certification | <ul style="list-style-type: none"> Texas State Florist's Association Knowledge Based Floral Certification Texas State Florist's Association Level I Floral Certification Texas State Florist's Association Level II Floral Certification |
|---|---|



Example Postsecondary Opportunities

Apprenticeships

- Horticulturist

Associate Degrees

- Biology/Biological Sciences
- Biological and Physical Sciences

Bachelor's Degrees

- Horticulture
- Plant Pathology/Phytopathology

Master's, Doctoral, and Professional Degrees

- Plant Breeding
- Botany/Plant Biology

Additional Stackable IBCs/Licensures

- Nursery Floral License
- Horticulturist Certification



Example Aligned Occupations

Pesticide Handlers, Sprayers, and Applicators, Vegetation

Median Wage: \$46,153
Annual Openings: 205
10-Year Growth: 17%

Biological Technicians

Median Wage: \$45,787
Annual Openings: 879
10-Year Growth: 14%

Farmers, Ranchers, and Other Agricultural Managers

Median Wage: \$65,490
Annual Openings: 28,020
10-Year Growth: 4%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024



For more information visit
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study/additional-resources>




Agriculture, Food, and Natural Resources Career Cluster


Statewide Program of Study: *Plant Science*

Course Information


9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Agriculture, Food, and Natural Resources* Also offered in 8th grade as a high school credit 13000200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	



10th Grade

Course	Prerequisites Corequisites	Career Clusters
Floral Design 13001800 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None Course Fee: \$100.00	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Advanced Floral Design N1300270 (1 credit)	Prerequisites: Floral Design Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None Course Fee: \$100.00	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Advanced Plant and Soil Science 13002100 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Biology, Integrated Physics and Chemistry, Chemistry, or Physics and a minimum of one credit from the courses in the AFNR career cluster Recommended Corequisites: None	
Practicum in Agriculture, Food, and Natural Resources* First Time Taken: 13002500 (2 credits) Second Time Taken: 13002510 (2 credits)	Prerequisites: a minimum of two credits with at least one course in a Level 2 or higher course from the AFNR career cluster Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

For additional information on the **Agriculture, Food, and Natural Resources** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Arts, Audio Visual Technology and Communication Career Cluster

The Arts, Audio Visual Technology and Communication (AAVTC) career cluster focuses on designing, producing, exhibiting, performing, writing, and publishing multimedia content requiring creative aptitude, fluency in computer and technology applications, and proficiency in oral and written communication. This career cluster includes occupations ranging from camera operator, audio and video technician, director, and producer to graphic designer and web and digital interface designer.

Statewide Program of Study: Digital Communications

The Digital Communications program of study focuses on occupational and educational opportunities associated with the production of audio and visual media formats for various purposes, such as TV broadcasts, advertising, video production, or motion pictures. The program of study includes operating machines and equipment such as microphones, sound speakers, video screens, projectors, video monitors, sound and mixing boards, and related electronic equipment to record sound and images.



Secondary Courses for High School Credit

- | | |
|-------------------|--|
| 9th Grade | <ul style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications |
| 10th Grade | <ul style="list-style-type: none"> Audio/Video Production I + Audio/Video Production I Lab (Dual Credit with COM) Digital Design and Media Production |
| 11th Grade | <ul style="list-style-type: none"> Audio/Video Production II + Audio/Video Production II Lab (Dual Credit with COM) |
| 12th Grade | <ul style="list-style-type: none"> Practicum in Audio/Video Production |

Aligned Advanced Academic Courses

AP or IB	IB Fi Im SL IB Fi Im HL
Dual Credit	Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Shadow a sound designer to learn how sound and folly is created for movies or podcasts Intern with a technical director at a sports team, recording studio, or radio station Shadow a technician on a live news broadcast, concert, or other event
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in SkillsUSA or TSA Participate in Student Television Network Capture and edit film and audio for a podcast with a local community organization

Aligned Industry-Based Certifications

- Adobe Certified Professional in Digital Video Using Adobe Premiere Pro



Example Postsecondary Opportunities

Apprenticeships

- Light Technician

Associate Degrees

- Commercial and Advertising Art
- Animation, Interactive Technology, Video Graphics, and Special Effects

Bachelor's Degrees

- Cinematography and Film/Video Production
- Recording Arts Technology

Master's, Doctoral, and Professional Degrees

- Animation, Interactive Technology, Video Graphics, and Special Effects
- Communications Technology

Additional Stackable IBCs/Licensures

- CompTIA Digital Media and Entertainment Professional Certification (DMEP)



Example Aligned Occupations

Camera Operators, Television, Video, and Film

Median Wage: \$48,422
Annual Openings: 155
10-Year Growth: 20%

Audio and Video Technicians

Median Wage: \$46,319
Annual Openings: 626
10-Year Growth: 30%


Producers and Directors

Median Wage: \$65,029
Annual Openings: 522
10-Year Growth: 12%




Course Information


9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Arts, Audio/Video Technology, and Communications* 13008200 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	



10th Grade

Course	Prerequisites Corequisites	Career Clusters
Audio/Video Production I + Audio/Video Production I Lab 13008510 (2 credits)	Prerequisites: None Corequisites: None Recommended prerequisites: Principles of AAVTC or Digital Media Recommended corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Audio/Video Production II + Audio/Video Production II Lab 13008610 (2 credits)	Prerequisites: Audio/Video Production I Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Audio/Video Production First Time Taken: 13008700 (2 credits) Second Time Taken: 13008710 (2 credits)	Prerequisites: Audio/Video Production II and Audio/Video Production II Lab Corequisites: None Recommended prerequisites: None Recommended corequisites: None	 

For additional information on the **Arts, Audio Visual Technology and Communication** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>

Arts, Audio Visual Technology and Communication Career Cluster

The Arts, Audio Visual Technology and Communication (AAVTC) career cluster focuses on designing, producing, exhibiting, performing, writing, and publishing multimedia content requiring creative aptitude, fluency in computer and technology applications, and proficiency in oral and written communication. This career cluster includes occupations ranging from camera operator, audio and video technician, director, and producer to graphic designer and web and digital interface designer.

Statewide Program of Study: *Graphic Design and Interactive Media*

The Graphic Design and Interactive Media program of study focuses on occupational and educational opportunities associated with designing or creating graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. The program of study includes designing clothing and accessories, creating special effects, animation, or other visual images using film, video, computers, or other electronic tools and media for use in computer games, movies, music videos, and commercials.



Secondary Courses for High School Credit

9th Grade	<ul style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications
10th Grade	<ul style="list-style-type: none"> Digital Design and Media Production Video Game Programming Graphic Design and Illustration I + Graphic Design and Illustration I Lab Commercial Photography I + Commercial Photography I Lab
11th Grade	<ul style="list-style-type: none"> Advanced Video Game Programming Graphic Design and Illustration II + Graphic Design and Illustration II Commercial Photography II + Commercial Photography II Lab
12th Grade	<ul style="list-style-type: none"> Practicum in Graphic Design and Illustration Practicum in Animation Practicum in Commercial Photography

Aligned Advanced Academic Courses

AP or IB	AP Studio Art: Two-Dimensional Design Portfolio
Dual Credit	Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Shadow an art director at a branding firm or design agency Intern in the marketing and communications department of a technology company
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in SkillsUSA or TSA Participate in Student Television Network Join a related co-curricular or extracurricular club such as web development or computer coding

Aligned Industry-Based Certifications

- Adobe Certified Professional in Digital Video Using Adobe Premiere Pro
- Adobe Certified Professional in Graphic Design and Illustration Using Adobe Illustrator
- Adobe Certified Professional in Print and Digital Media Publication Using Adobe InDesign

Successful completion of the *Graphic Design and Interactive Media* program of study will fulfill requirements of the Business and Industry endorsement.



Example Postsecondary Opportunities

Associate Degrees

- Graphic Design
- Digital Arts

Bachelor's Degrees

- Web Page, Digital/Multimedia and Information Resources Design
- Design and Visual Communications

Master's, Doctoral, and Professional Degrees

- Game and Interactive Media Design
- Animation, Interactive Technology, Video Graphics, and Special Effects

Additional Stackable IBCs/Licensures

- Certified Textile Designer (CTD)



Example Aligned Occupations

Software Developers

Median Wage: \$111,705
Annual Openings: 15,324
10-Year Growth: 36%

Graphic Designers

Median Wage: \$50,973
Annual Openings: 1,766
10-Year Growth: 10%

Art Directors

Median Wage: \$81,926
Annual Openings: 619
10-Year Growth: 18%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>

Arts, Audio Visual Technology and Communication Career Cluster

Statewide Program of Study: *Graphic Design and Interactive Media*

Course Information



9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Arts, Audio/Video Technology, and Communications* 13008200 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Video Game Programming N1300994 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: Video Game Design Recommended corequisites: None	
Graphic Design and Illustration I + Graphic Design and Illustration I Lab* 13008810 (2 credits)	Prerequisites: None Corequisites: None Recommended prerequisites: Principles of AAVTC Recommended corequisites: None	
Commercial Photography I + Commercial Photography I Lab 13009110 (2 credits)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Advanced Video Game Programming N1300995 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: Video Game Design and Video Game Programming Recommended corequisites: None	
Graphic Design and Illustration II + Graphic Design and Illustration II Lab 13008910 (2 credits)	Prerequisites: Graphic Design and Illustration I Corequisites: None Recommended prerequisites: None Recommended corequisites: None	
Commercial Photography II + Commercial Photography II Lab 13009210 (2 credits)	Prerequisites: None Corequisites: None Recommended prerequisites: Commercial Photography I and Commercial Photography I Lab Recommended corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Animation First Time Taken: 13008450 (2 credits) Second Time Taken: 13008460 (2 credit)	Prerequisites: Animation II and Animation II Lab Corequisites: None Recommended prerequisites: None Recommended corequisites: None	
Practicum in Graphic Design and Illustration First Time Taken: 13009000 (2 credits) Second Time Taken: 13009010 (2 credits)	Prerequisites: Graphic Design and Illustration II and Graphic Design and Illustration II Lab Corequisites: None Recommended prerequisites: None Recommended corequisites: None	
Practicum in Commercial Photography First Time Taken: 13009250 (2 credits) Second Time Taken: 13009260 (2 credits)	Prerequisites: Commercial Photography I and Commercial Photography I Lab along with teacher recommendation Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

For additional information on the **Arts, Audio Visual Technology and Communication** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Business, Marketing, and Finance Career Cluster

Revised – March 2024

The Business, Marketing, and Finance career cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. This career cluster includes occupations ranging from business owner and entrepreneur, to accountant, retail manager and market analyst.

Statewide Program of Study: **Accounting and Financial Services**

The Accounting and Financial Services program of study focuses on occupational and educational opportunities associated with examining, analyzing, and interpreting financial records. It includes exploration of financial services, preparing financial statements, auditing financial statements prepared by others, and interpreting accounting records. This program of study also introduces students to mathematical modeling tools.

Secondary Courses for High School Credit



9th Grade • Principles of Business, Marketing, and Finance

10th Grade • Accounting I
• Financial Mathematics (also a math credit)

11th Grade • Accounting II
• Financial Analysis

12th Grade • Practicum in Entrepreneurship (School Store or Real Estate)

Aligned Advanced Academic Courses

AP or IB	IB Mathematics Analysis and Approaches SL IB Mathematics Analysis and Approaches HL
Dual Credit	Dual credit offerings will vary by Local Educational Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none">• Intern with a public certified accountant (CPA) at a local business• Intern with a city or county auditor's office• Shadow a financial advisor as an intern at an investment company
Expanded Learning Opportunities	<ul style="list-style-type: none">• Participate in BPA, DECA, or FBLA• Explore student membership in professional organizations such as AICPA, CIMA, or TXCPA



Aligned Industry-Based Certifications

- Accounting Foundations
- Intuit QuickBooks Certified User



Example Postsecondary Opportunities

Associate Degrees

- Accounting
- Bookkeeping

Bachelor's Degrees

- Accounting
- Banking and Financial Support Services

Master's, Doctoral, and Professional Degrees

- Business Administration and Management
- Finance

Additional Stackable IBCs/Licensures

- Project Management Professional
- Property Tax Consultants Service Contract Providers



Example Aligned Occupations

Tax Preparers

Median Wage: \$56,956
Annual Openings: 898
10-Year Growth: 14%

Accountants and Auditors

Median Wage: \$78,022
Annual Openings: 12,989
10-Year Growth: 20%

Personal Financial Advisors

Median Wage: \$77,605
Annual Openings: 1,877
10-Year Growth: 21%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>

Business, Marketing, and Finance Career Cluster



Statewide Program of Study: *Accounting and Financial Services*

Course Information



9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Business, Marketing, and Finance 13011200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	 











10th Grade

Course	Prerequisites Corequisites	Career Clusters
Accounting I 13016600 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance Recommended Corequisites: None	
Financial Mathematics* 13018000 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: Algebra I Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Accounting II 13016700 (1 credit)	Prerequisites: Accounting I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Financial Analysis* 13016800 (1 credit)	Prerequisites: Accounting I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Entrepreneurship* First Time Taken: 13011111 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a career and technical education (CTE) program of study. Recommended Corequisites: None	         

For additional information on the **Business, Marketing, and Finance** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Business, Marketing, and Finance Career Cluster

The Business, Marketing, and Finance career cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. This career cluster includes occupations ranging from business owner and entrepreneur to accountant, retail manager, and market analyst.

Statewide Program of Study: **Marketing and Sales**

The Marketing and Sales program of study focuses on occupational and educational opportunities associated with collecting information to estimate potential sales of a product or service and create campaigns to market or distribute goods and services. It includes applying data related to customer demographics, preferences, needs, and buying habits.



Secondary Courses for High School Credit

9th Grade • Principles of Business, Marketing, and Finance

10th Grade • Marketing
• Sports and Entertainment Marketing

11th Grade • Sports and Entertainment Marketing II
• Advertising

12th Grade • Practicum in Entrepreneurship (School Store or Real Estate)

Aligned Advanced Academic Courses

AP or IB AP Statistics

Dual Credit Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Intern at a marketing and advertising company
- Job shadow a pharmaceutical sales representative
- Intern at a local retail company

Expanded Learning Opportunities

- Job shadow an account representative at a marketing firm
- Participate in BPA, DECA, FBLA, or related UIL events



Aligned Industry-Based Certifications

- Student Social Media Marketing Certification



Example Postsecondary Opportunities

Associate Degrees

- Marketing/Marketing Management
- Retail Management

Bachelor's Degrees

- Business Administration
- Marketing/Marketing Management
- Fashion Merchandising

Master's, Doctoral, and Professional Degrees

- Business Administration
- Applied Economics
- Business Analytics

Additional Stackable IBCs/Licensures

- Salesforce
- Service Contract Providers



Example Aligned Occupations

Retail Salespersons

Median Wage: \$28,356
Annual Openings: 56,132
10-Year Growth: 15%

Market Research Analysts

Median Wage: \$60,926
Annual Openings: 5,688
10-Year Growth: 35%

Sales Managers

Median Wage: \$123,729
Annual Openings: 3,368
10-Year Growth: 21%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Business, Marketing, and Finance Career Cluster

Statewide Program of Study: *Marketing and Sales*

Course Information



9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Business, Marketing, and Finance * 13011200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	 











10th Grade

Course	Prerequisites Corequisites	Career Clusters
Marketing N1303424 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance Recommended Corequisites: None	
Sports and Entertainment Marketing* 13034600 (0.5 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance Recommended Corequisites: None	 

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Sports and Entertainment Marketing II N1303422 (0.5 credit)	Prerequisites: Sports and Entertainment Marketing Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance Recommended Corequisites: None	
Advertising* 13034200 (0.5 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Business, Marketing, and Finance Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Entrepreneurship* First Time Taken: 13011111 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a career and technical education (CTE) program of study Recommended Corequisites: None	         

For additional information on the **Business, Marketing, and Finance** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Business, Marketing, and Finance Career Cluster

The Business, Marketing, and Finance career cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations. This career cluster includes occupations ranging from business owner and entrepreneur to accountant, retail manager, and market analyst.

Statewide Program of Study: **Real Estate**

The Real Estate program of study focuses on occupational and educational opportunities associated with financing, selling, and contracting real estate. This program of study includes management, economics, marketing, and financial principles of real estate evaluation. It also addresses commercial real estate including lending, developing, brokering, and financing.



Secondary Courses for High School Credit

- | | |
|-------------------|---|
| 9th Grade | <ul style="list-style-type: none"> Principles of Business, Marketing, and Finance |
| 10th Grade | <ul style="list-style-type: none"> Financial Mathematics |
| 11th Grade | <ul style="list-style-type: none"> Fundamentals of Real Estate Financial Analysis |
| 12th Grade | <ul style="list-style-type: none"> Practicum in Entrepreneurship (School store or Real Estate) |

Aligned Advanced Academic Courses

Dual Credit Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Intern with a local real estate company or commercial realtor
- Job shadow a property manager or local realtor
- Conduct informational interviews with employees at a real estate investment company

Expanded Learning Opportunities

- Participate in BPA, DECA, FBLA, or UIL-related events
- Explore student membership in related professional organizations



Aligned Industry-Based Certifications

- Student Social Media Marketing Certification
- Real Estate Sales Agent License



Example Postsecondary Opportunities

Associate Degrees

- Business Administration and Management
- Real Estate

Bachelor's Degrees

- Business Administration and Management
- Real Estate

Master's, Doctoral, and Professional Degrees

- Business Administration and Management
- Parks, Recreation, and Leisure Facilities Management

Additional Stackable IBCs/Licensures

- Real Estate



Example Aligned Occupations

Real Estate Sales Agents

Median Wage: \$50,746
Annual Openings: 5,058
10-Year Growth: 15%

Property, Real Estate, and Community Association Managers

Median Wage: \$59,788
Annual Openings: 3,457
10-Year Growth: 15%

Title Examiners, Abstractors, and Searchers

Median Wage: \$58,593
Annual Openings: 819
10-Year Growth: 12%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>





Business, Marketing, and Finance Career Cluster

Statewide Program of Study: *Real Estate*

Course Information



9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Business, Marketing, and Finance* 13011200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	 











10th Grade

Course	Prerequisites Corequisites	Career Clusters
Financial Mathematics* 13018000 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Fundamentals of Real Estate* N1301120 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Financial Analysis* 13016800 (1 credit)	Prerequisites: Accounting I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Entrepreneurship* First Time Taken: 13011111 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a career and technical education (CTE) program of study Recommended Corequisites: None	         

For additional information on the **Business, Marketing, and Finance** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Education and Training Career Cluster

The Education and Training career cluster focuses on planning, managing, and providing education and training services and related learning support services. All parts of courses are designed to introduce learners to the various careers available within the Education and Training Career Cluster. This Career Cluster includes a diverse spectrum of occupations, ranging from teaching assistant, classroom teacher, to school administrator.

Statewide Program of Study: Teaching and Training

The Teaching and Training program of study focuses on occupational and educational opportunities associated with careers related to teaching, instructing, and creating instructional and enrichment materials. The program of study includes recognizing a variety of student groups and their corresponding needs, identifying processes for developing curriculum and coordinating educational content, and coaching groups and individuals.



Secondary Courses for High School Credit

- 9th Grade**
- Principles of Education and Training
 - Principles of Human Services (**Offered in 8th grade as a high school credit**)

- 10th Grade**
- Child Development (**Dual Credit**)

- 11th Grade**
- Instructional Practices (**Dual Credit**)

- 12th Grade**
- Practicum in Education and Training

Aligned Advanced Academic Courses

Dual Credit

Dual credit offerings will vary by Local Educational Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Serve as a camp counselor to learn mentoring, facilitation, and lesson planning skills
- Volunteer in a tutoring center to learn lesson planning and skills assessment

Expanded Learning Opportunities

- Participate in FCCLA
- Participate in TAFE



Aligned Industry-Based Certifications

- Educational Aide I



Example Postsecondary Opportunities

Apprenticeships

- Teacher Apprentice

Associate Degrees

- Adult and Continuing Education and Teaching
- Educational/Instructional Technology

Bachelor's Degrees

- Elementary Education and Teaching
- Secondary Education and Teaching

Master's, Doctoral, and Professional Degrees

- Educational Leadership and Administration, General
- Curriculum and Instruction

Additional Stackable IBCs/Licensures

- Generalist, Grades EC-4



Example Aligned Occupations

Teaching Assistants, Except Postsecondary

Median Wage: \$28,066
Annual Openings: 10,000
10-Year Growth: 15%

Secondary School Teachers, Except Special Education and CTE

Median Wage: \$61,035
Annual Openings: 8,288
10-Year Growth: 14%

Education Administrators, Kindergarten through Secondary

Median Wage: \$81,976
Annual Openings: 2676
10-Year Growth: 14%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Education and Training Career Cluster

Statewide Program of Study: Teaching and Training

Course Information

9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Education and Training 13014200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	
Principles of Human Services* 13024200 (1 credit) (taken in 8th grade)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Child Development* 13024700 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Human Services or Principles of Education and Training Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Instructional Practices 13014400 (2 credits)	Prerequisites: One credit from Education and Training career cluster Corequisites: None Recommended Prerequisites: Principles of Education and Training, Human Growth and Development, or Child Development Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Education and Training First Time Taken: 13014500 (2 credits) Second Time Taken: 13014510 (2 credits)	Prerequisites: Instructional Practices Corequisites: None Recommended Prerequisites: Principles of Education and Training, Human Growth and Development, and Child Development Recommended Corequisites: None	



Energy Career Cluster (11th/12th Dual Credit - Students Must Have Own Transportation to COM)

The Energy career cluster prepares individuals for careers in the designing, processing, planning, maintaining, generating, transmission, and distribution of traditional and alternative energy. This career cluster includes occupations ranging from petroleum engineers, rotary drill operators, chemical technicians and, power plant operators to solar photovoltaic installers and wind turbine service technicians.

Statewide Program of Study: Refining and Chemical Processes

The Refining and Chemical Processes program of study focuses on occupational and educational opportunities associated with how to monitor, adjust, and operate equipment housed in petrochemical plants and refineries. This program of study includes exploration of computer technology and instrumentation used to operate a variety of systems and industrial processes.

Secondary Courses for High School Credit

Level 1

- 11th Grade** • Introduction to Process Technology
- Dual Credit** • Introduction to Instrumentation and Electrical

- 12th Grade** • Petrochemical Safety, Health, and Environment
- Dual Credit** • Advanced Instrument and Electrical

Level 4

Aligned Advanced Academic Courses

AP or IB	AP Chemistry IB Chemistry Standard Level
Dual Credit	Dual credit offerings will vary by local education agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count toward concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Shadow a chemical technician in a laboratory at a chemical manufacturing plant Intern at a power plant to learn about industrial processes and plant operations
Expanded Learning Opportunities	<ul style="list-style-type: none"> Tour a refining and chemical plant Participate in SkillsUSA

Aligned Industry-Based Certifications

- NCCER Core
- NCCER Electronic System Technician Level I
- NCCER Instrumentation Level I
- Certified Production Technician (CPT) 4.0
- Lean Six Sigma Green Belt Certification
- Industrial Technology Maintenance (ITM) - Process Control Systems



Example Postsecondary Opportunities

Associate Degrees

- Chemical Process Technology
- Instrumentation Technology/Technician
- Manufacturing Engineering Technology/Technician
- Industrial Technology/Technician

Bachelor's Degrees

- Chemical Engineering
- Engineering/Industrial Management
- Industrial Engineering
- Manufacturing Engineering

Master's, Doctoral, and Professional Degrees

- Mechanical Engineering
- Chemical Engineering
- Engineering/Industrial Management
- Industrial Engineering



Example Aligned Occupations

Chemical Technicians

Median Wage: \$58,129
Annual Openings: 892
10-Year Growth: 17%

Power Plant Operators

Median Wage: \$94,669
Annual Openings: 231
10-Year Growth: 3%

Petroleum Engineers

Median Wage: \$134,225
Annual Openings: 1,443
10-Year Growth: 27%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>

Energy Career Cluster (11th/12th Dual Credit at COM)

Statewide Program of Study: Refining and Chemical Processes



Course Information

Course	Prerequisites Corequisites	Career Clusters
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Level 1



Course	Prerequisites Corequisites	Career Clusters
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11th Grade

Introduction to Process Technology (Dual Credit) 13040502 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommend Corequisites: None	
Introduction to Instrumentation and Electrical (Dual Credit) N1303900 (1 credit)	Prerequisites: Integrated Chemistry and Physics (IPC) or Chemistry Corequisites: None Recommended Prerequisites: None Recommend Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
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Petrochemical Safety, Health, and Environment (Dual Credit) 13040504 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommend Corequisites: None	
Advanced Instrument and Electrical (Dual Credit) N1303901 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Algebra I and Introduction to Instrumentation and Electrical Recommend Corequisites: None	

Engineering Career Cluster

The Engineering career cluster focuses on planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and to mapping technician.

Statewide Program of Study: Engineering Foundations

The Engineering Foundations program of study focuses on occupational and educational opportunities associated with a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. This program of study includes applying scientific, mathematical, and empirical evidence to solve problems through innovation, design, construction, operation, and maintenance of different engineering systems.



Secondary Courses for High School Credit

- 9th Grade**
- Principles of Applied Engineering (**offered in 8th grade as a high school credit**)
 - Introduction to Engineering Design (PLTW)

- 10th Grade**
- Robotics I
 - Engineering Science

- 11th Grade**
- Robotics II
 - Engineering Design and Presentation I
 - Aerospace Engineering (PLTW)

- 12th Grade**
- Engineering Design and Presentation II
 - Practicum in Science, Technology, Engineering, and Mathematics
 - Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

AP or IB	AP Calculus AB AP Computer Science A AP Physics 1	AP Physics 2 AP Statistics IB Physics SL	IB Physics HL IB Computer Science SL IB Computer Science HL
Dual Credit	Dual credit offerings will vary by Local Education Agency.		

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Intern at an engineering, robotics, or aerospace company Visit an engineering firm and shadow multiple types of engineers
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in TSA or SkillsUSA Join a local engineering association and attend meetings.



Aligned Industry-Based Certifications

- Autodesk Associate (Certified User) AutoCAD
- Autodesk Associate (Certified User) Fusion 360
- Autodesk Associate (Certified User) Inventor for Mechanical Design
- Autodesk Associate (Certified User) Revit Architecture
- Autodesk Associate (Certified User) Revit for Electrical
- Autodesk Associate (Certified User) Revit for Structural Design
- Autodesk Certified Professional Fusion 360
- Autodesk Certified Professional in AutoCAD for Design and Drafting
- Autodesk Certified Professional in Civil 3D for Infrastructure Design
- Autodesk Certified Professional in Inventor for Mechanical Design
- Autodesk Certified Professional in Revit for Architectural Design
- Autodesk Certified Professional in Revit for Electrical Design
- Autodesk Certified Professional in Revit for Structural Design
- C-103 Certified Industry 4.0 Associate – Robot System Operations
- Certified SOLIDWORKS Associate (CSWA) – Academic
- Certified SOLIDWORKS Associate (CSWA) – Electrical
- Certified SOLIDWORKS Associate (CSWA) – Mechanical Design
- Certified SOLIDWORKS Associate (CSWA) – Simulation
- Certified SOLIDWORKS Associate (CSWA) – Sustainability
- Certified SOLIDWORKS Professional (CSWP) – Academic
- Certified SOLIDWORKS Professional (CSWP) – Mechanical Design
- Certified SOLIDWORKS Professional (CSWP) – Model Based Definition
- Certified SOLIDWORKS Professional (CSWP) – Simulation
- Certified SOLIDWORKS Professional (CSWPA) – Drawing Tools
- Engineering Technology Foundations
- Pre-Engineering/Engineering Technology – Job Ready
- FANUC Robot Operator 1
- Certified Logistics Technician (CLT)
- Certified Production Technician (CPT) 4.0



Example Postsecondary Opportunities

Apprenticeships

- Industrial Engineering Technician Apprenticeship

Associate Degrees

- Manufacturing Engineering Technology/Technician
- Robotics Technology/Technician

Bachelor's Degrees

- Electrical and Electronics Engineering
- Engineering, General

Master's, Doctoral, and Professional Degrees

- Electrical and Electronics Engineering
- Engineering, General

Additional Stackable IBCs/Licensures

- Professional Engineer (PE License)
- Engineer in Training Certification (EIT)



Example Aligned Occupations

Civil Engineering Technologists and Technicians

Median Wage: \$61,138
Annual Openings: 765
10-Year Growth: 11%

Aerospace Engineers

Median Wage: \$115,694
Annual Openings: 483
10-Year Growth: 18%

Mechanical Engineers

Median Wage: \$99,937
Annual Openings: 1,755
10-Year Growth: 19%







Engineering Career Cluster






Statewide Program of Study: Engineering Foundations

Course Information








9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Applied Engineering (offered in 8th grade for high school credit) 13036200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	  
Introduction to Engineering Design (PLTW)* N1303742 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	













10th Grade

Course	Prerequisites Corequisites	Career Clusters
Robotics I 13037000 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Applied Engineering Recommended Corequisites: None	  
Engineering Science 13037500 (1 credit)	Prerequisites: Algebra I, one credit in Biology, and at least one credit in a course from the STEM Cluster Corequisites: None Recommended Prerequisites: Geometry, Integrated Physics and Chemistry (IPC), one credit in chemistry, or one credit in physics Recommended Corequisites: None	 

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Engineering Design and Presentation I 13036500 (1 credit)	Prerequisites: Algebra I and at least one credit in a course from the STEM career cluster Corequisites: None Recommended Prerequisites: Principles of Applied Engineering Recommended Corequisites: None	 
Aerospace Engineering (PLTW) N1303745 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: At least one credit in a Level 2 or higher course in Engineering Recommended Corequisites: None	 
Robotics II 13037050 (1 credit)	Prerequisites: Robotics I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	  

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Engineering Design and Presentation II* 13036600 (2 credits)	Prerequisites: Principles of Applied Engineering or Engineering Design and Presentation I, Algebra I, and Geometry Corequisites: None Recommended Prerequisites: Principles of Applied Engineering or Engineering Design and Presentation I Recommended Corequisites: None	
Practicum in Science, Technology, Engineering, and Mathematics First Time Taken: 13037400 (2 credits) Second Time Taken: 13037410 (2 credits)	Prerequisites: Algebra I and Geometry Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	   
Career Preparation for Programs of Study First Time Taken: 12701121 (2 credits)	Prerequisites: at least one Level 2 or higher Career and Technical Education course Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	      



Health Science Career Cluster

The Health Science career cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. This career cluster includes occupations ranging from medical assistant, registered nurse, and physical therapist to forensic science technician and athletic trainer.

Statewide Program of Study: *Diagnostic and Therapeutic Services*

The Diagnostic and Therapeutic Services program of study focuses on occupational and educational opportunities associated with diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study includes exploration of patient treatment and rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.



Secondary Courses for High School Credit

- | | |
|-------------------|--|
| 9th Grade | <ul style="list-style-type: none"> Principles of Health Science Introduction to Imaging Technology (Dual Credit with Galveston College) |
| 10th Grade | <ul style="list-style-type: none"> Medical Terminology Imaging Technology I (Dual Credit with Galveston College) |
| 11th Grade | <ul style="list-style-type: none"> Anatomy and Physiology Medical Microbiology Health Science Theory Imaging Technology II (Dual Credit with Galveston College) Pharmacology |
| 12th Grade | <ul style="list-style-type: none"> Practicum in Health Science <ul style="list-style-type: none"> Dental Assistant EMT (Dual Credit with COM) LMRT (Dual Credit with Galveston College) PCT/EKG Pharmacy Technician |

Aligned Advanced Academic Courses

AP or IB	AP Biology IB Biology SL IB Biology HL	AP Chemistry IB Chemistry SL IB Chemistry HL
Dual Credit	Dual credit offerings will vary based on Local Education Agency.	

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> Intern with a medical assistant at a community clinic, hospital, assisted living or long-term care facility Participate in job shadowing experiences such as Emergency Medical Services (EMS) ride along, hospital/clinical job shadow
Expanded Learning Opportunities	<ul style="list-style-type: none"> Participate in Health Occupation Students of America (HOSA) or SkillsUSA Participate in Advanced Medical Ambulance Bus (AMBUS) event or Community Emergency Response Team (CERT) event



Aligned Industry-Based Certifications

- | | |
|--|---|
| <ul style="list-style-type: none"> Certified EKG Technician Certified Patient Care Technician (CPCT) Emergency Medical Technician–Basic | <ul style="list-style-type: none"> Limited Medical Radiologic Technologist Pharmacy Technician Registered Dental Assistant X-Ray Certification |
|--|---|



Example Postsecondary Opportunities

Apprenticeships

- Medical Assistant

Associate Degrees

- Emergency Medical Technology
- Radiologic Technology/Science

Bachelor's Degrees

- Emergency Medical Technology
- Medical Insurance Coding

Master's, Doctoral, and Professional Degrees

- Medicine
- Occupational Therapy

Additional Stackable IBCs/Licensures

- Registered Diagnostic Medical Sonographer



Example Aligned Occupations

Medical Assistants

Median Wage: \$36,834
Annual Openings: 11,638
10-Year Growth: 29%

Dental Hygienists

Median Wage: \$79,663
Annual Openings: 1,352
10-Year Growth: 32%

Physician Assistants

Median Wage: \$127,332
Annual Openings: 974
10-Year Growth: 41%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Health Science Career Cluster

Statewide Program of Study: *Diagnostic and Therapeutic Services*

Course Information

9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Health Science* 13020200 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	
Introduction to Imaging Technology N1302102 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Medical Terminology* 13020300 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: None Recommended corequisites: None	
Imaging Technology I N1302123 (1 credit)	Prerequisites: None Corequisites: None Recommended prerequisites: Introduction to Imaging Technology Recommended corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Anatomy and Physiology* 13020600 (1 credit)	Prerequisites: One credit in Biology and one credit in Chemistry, Integrated Physics and Chemistry, or Physics Corequisites: None Recommended prerequisites: None Recommended corequisites: A course from the Health Science career cluster	
Medical Microbiology* 13020700 (1 credit)	Prerequisites: One credit in Biology, one credit in Chemistry, and at least one credit in a course from the Health Science career cluster Corequisites: None Recommended prerequisites: none Recommended corequisites: None	
Health Science Theory* 13020400 (1 credit)	Prerequisites: One credit in Biology and at least one credit in a course from the Health Science career cluster. Corequisites: None Recommended prerequisites: Medical Terminology Recommended corequisites: Health Science Clinical	
Imaging Technology II N1302131 (2 credits)	Prerequisites: Imaging Technology I Corequisites: None Recommended prerequisites: Introduction to Imaging Technology Recommended corequisites: None	
Pharmacology* 13020950 (1 credit)	Prerequisites: One credit in Biology, one credit in Chemistry, and at least one credit in a Level 2 or higher course from the Health Science career cluster Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Health Science* First Time Taken: 13020500 (2 credits) Second Time Taken: 13020510 (2 credits)	Prerequisites: Health Science Theory and Biology Corequisites: None Recommended prerequisites: None Recommended corequisites: None	

For additional information on the Health Science career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Human Services Career Cluster

The Human Services career cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services. This career cluster includes occupations ranging from community health workers to cosmetologists and nutritionists.

Regional Program of Study: *Cosmetology and Personal Care Services*

The Cosmetology and Personal Care Services regional program of study focuses on occupational and educational opportunities associated with providing beauty and personal care services. This program of study includes managing personal care facilities and coordinating or supervising personal service workers.



Secondary Courses for High School Credit

10th Grade • Principles of Cosmetology Design and Color Theory (Barbering)

10th Grade • Introduction to Cosmetology

11th Grade • Cosmetology I + Cosmetology I Lab
• Barbering I

12th Grade • Cosmetology II + Cosmetology II Lab
• Barbering II

Aligned Advanced Academic Courses

Dual Credit Dual credit offerings will vary by Local Educational Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Work part-time in a salon, spa, or barbershop
- Participate in an apprenticeship at a salon to become an apprentice stylist

Expanded Learning Opportunities

- Tour a salon, spa, or barbershop
- Participate in SkillsUSA



Aligned Industry-Based Certifications

- Barber Operator License
- Cosmetology Operator License



Example Postsecondary Opportunities

Apprenticeships

- Apprentice Stylist

Associate Degrees

- Cosmetology Operator
- Esthetics and Skin Care

Additional Stackable IBCs/Licensures

- Class A Barber
- Eyelash Extension Specialist
- Hair Weaving Specialist



Example Aligned Occupations

Hairdressers, Hairstylists, and Cosmetologists

Median Wage: \$27,286
Annual Openings: 8,014
10-Year Growth: 25%

Skincare Specialists

Median Wage: \$35,112
Annual Openings: 778
10-Year Growth: 38%

First-Line Supervisors of Personal Service Workers

Median Wage: \$36,795
Annual Openings: 2,253
10-Year Growth: 29%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:

<https://tea.texas.gov/academics/collegecareer-and-military-prep/career-and-technical-education/programs-of-study-additional-resources/CPS>



Human Services Career Cluster

Regional Program of Study: Cosmetology and Personal Care Services

Course Information

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Cosmetology Design and Color Theory 13025050 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Human Services Recommended Corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Introduction to Cosmetology 13025100 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Cosmetology I + Cosmetology I Lab 13025210 (3 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Introduction to Cosmetology Recommended Corequisites: None	
Barbering I N1302534 (3 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Cosmetology II + Cosmetology II Lab 13025310 (3 credits)	Prerequisites: Cosmetology I Corequisites: Cosmetology II Recommended Prerequisites: None Recommended Corequisites: None	
Barbering II N1302535 (3 credits)	Prerequisites: Barbering I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	



Information Technology Career Cluster

The Information Technology (IT) career cluster focuses on the design, development, support, and management of hardware, software, multimedia, and systems integration services. This career cluster includes occupations ranging from Software Developer and Programmer to Cybersecurity Specialists and Network Analysts.

Statewide Program of Study: Programming and Software Development

The Programming and Software Development program of study focuses on occupational and educational opportunities associated with researching, designing, developing, testing, and operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computer applications. This program of study includes creating, modifying, and testing the codes, forms, and script that allow computer applications to run.



Secondary Courses for High School Credit

- | | |
|-------------------|--|
| 9th Grade | • Fundamentals of Computer Science |
| 10th Grade | • Computer Science I |
| 11th Grade | • Computer Science II |
| 12th Grade | • Practicum in Science, Technology, Engineering, and Mathematics |

Aligned Advanced Academic Courses

AP or IB	AP Calculus AB AP Statistics IB Mathematics Applications and Interpretation SL
Dual Credit	Dual credit offerings will vary by Local Education Agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	<ul style="list-style-type: none"> • Intern at a local IT company to develop skills in programming and coding • Shadow a software developer to learn how they create and improve software to support efficient processes at their company
Expanded Learning Opportunities	<ul style="list-style-type: none"> • Program and create a game • Participate in TSA or SkillsUSA



Aligned Industry-Based Certifications

- CodeHS Python Level 1 Certification



Example Postsecondary Opportunities

Apprenticeships

- Computer Programmer Apprenticeship

Associate Degrees

- Computer Programming
- Web Page, Digital/Multimedia and Information Resources Design

Bachelor's Degrees

- Data Science
- Computer Engineering

Master's, Doctoral, and Professional Degrees

- Management Science
- Computer Software Engineering

Additional Stackable IBCs/Licensures

- AWS Certified Developer Associate



Example Aligned Occupations

Computer User Support Specialists

Median Wage: \$51,411
Annual Openings: 5,757
10-Year Growth: 21%

Software Developers

Median Wage: \$111,705
Annual Openings: 15,324
10-Year Growth: 36%

Computer Programmers

Median Wage: \$87,997
Annual Openings: 1,176
10-Year Growth: 4%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Information Technology Career Cluster

Statewide Program of Study: Programming and Software Development

Course Information

9th Grade

Course	Prerequisites Corequisites	Career Clusters
Fundamentals of Computer Science* 03580140 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Computer Science I* 03580200 (1 credit)	Prerequisites: Algebra I or Corequisites: Algebra I Recommended Prerequisites: None Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Computer Science II 03580300 (1 credit)	Prerequisites: Algebra I and either Computer Science I or Fundamentals of Computer Science Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Science, Technology, Engineering, and Mathematics First Time Taken: 13037400 (2 credits) Second Time Taken: 13037410 (2 credits)	Prerequisites: Algebra I and Geometry Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	



Information Technology Career Cluster (11th/12th Dual Credit) at COM - ONLINE ONLY

The Information Technology (IT) career cluster focuses on the design, development, support, and management of hardware, software, multimedia, and systems integration services. This career cluster includes occupations ranging from Software Developer and Programmer to Cybersecurity Specialists and Network Analysts.

Statewide Program of Study: Cybersecurity

The Cybersecurity program of study focuses on occupational and educational opportunities associated with planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study includes responding to computer security breaches and viruses and administering network security measures.

Secondary Courses for High School Credit

9th Grade • Fundamentals of Computer Science

10th Grade • Computer Science I

11th Grade • Networking + Networking Lab (COM DUAL CREDIT)

12th Grade • Practicum in Information Technology (COM DUAL CREDIT)



Examples Postsecondary Opportunities

Associate Degrees

- Computer and Information Systems Security
- Computer Programming

Bachelor's Degrees

- Computer Science
- Computer Software Engineering

Master's, Doctoral, and Professional Degrees

- Computer and Information Systems Security/Auditing/Information Assurance
- Computer Software Engineering

Additional Stackable IBCs/License

- Certified Ethical Hacker (CEH)

Aligned Advanced Academic Courses

AP or IB AP Computer Science Principles
AP Computer Science A

Dual Credit Dual credit offerings will vary by local education agency.

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Intern at a local bank, hospital, or government office to develop skills in implementing security measures
- Interview with an information security analyst to learn how they plan for, monitor, and upgrade security measures at their organization

Expanded Learning Opportunities

- Participate in a Hackathon
- Participate in TSA or SkillsUSA

Aligned Industry-Based Certifications

- Cisco 100-490 RSTech Supporting Cisco Routing and Switching Network Devices
- Cisco 200-201 CBROPS - Understanding Cisco Cybersecurity Operations Fundamentals
- Cisco CCNA (200-301) Implementing and Administering Cisco Solutions
- CodeHS Cybersecurity Level 1 Certification
- CompTIA A+ Certification
- CompTIA IT Fundamentals+
- CompTIA Network+
- CompTIA Security+
- Computer Networking Fundamentals - Job Ready
- Cybersecurity Fundamentals
- Cybersecurity Fundamentals: An ISACA Certificate
- Information Technology Specialist: Networking
- Information Technology Specialist: Java
- Information Technology Specialist: JavaScript
- Microsoft 365 Fundamentals
- Microsoft Security, Compliance, and Identity Fundamentals
- Oracle Certified Associate Java SE 8 Programmer
- Cloud Essentials+
- CompTIA Linux+
- CompTIA Server+

Successful completion of the Cybersecurity program of study will fulfill requirements of the STEM endorsement if the math and science requirements are met or the Business and Industry endorsement.



Example Aligned Occupations

Computer User Support Specialists

Median Wage: \$51,411
Annual Openings: 5,757
10-Year Growth: 21%

Software Developers

Median Wage: \$111,705
Annual Openings: 15,324
10-Year Growth: 36%

Information Security Analysts

Median Wage: \$110,268
Annual Openings: 1,719
10-Year Growth: 49%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.




For more information visit:

<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>


Information Technology Career Cluster (11th/12th Dual Credit at COM - ONLINE ONLY)

Statewide Program of Study: Cybersecurity Course Information


9th Grade

Course	Prerequisites Corequisites	Career Clusters
Fundamentals of Computer Science* 03580140 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	


10th Grade

Course	Prerequisites Corequisites	Career Clusters
Computer Science I* 03580200 (1 credit)	Prerequisites: Algebra I Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Networking + Networking Lab* 13027410 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Information Technology* First Time Taken: 13028000 (2 credits) Second Time Taken: 13028010 (2 credits)	Prerequisites: A minimum of two high school information technology (IT) courses Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

For additional information on the **Information Technology** career cluster, contact cte@tea.texas.gov or visit <https://tea.texas.gov/cte>



Law and Public Service Career Cluster

The Law and Public Service career cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services. This career cluster includes occupations ranging from police officer and firefighter to political scientist and lawyer.

Statewide Program of Study: Law Enforcement

The Law Enforcement program of study focuses on occupational and educational opportunities associated with the development and enforcement of laws by various branches of law enforcement. This program of study includes the history, organization, and functions of local, state, and federal law enforcement. Students will understand the role of constitutional law at local, state, and federal levels; the U.S. legal system; criminal law; and law enforcement terminology and the classification and elements of crime.



Secondary Courses for High School Credit

- | | |
|-------------------|---|
| 9th Grade | <ul style="list-style-type: none"> Principles of Law, Public Safety, Corrections, and Security |
| 10th Grade | <ul style="list-style-type: none"> Law Enforcement I |
| 11th Grade | <ul style="list-style-type: none"> Law Enforcement II Counseling and Mental Health |
| 12th Grade | <ul style="list-style-type: none"> Forensic Science (science credit) |



Example Postsecondary Opportunities

Apprenticeships

- Security Specialist

Associate Degrees

- Criminal Justice
- Law Enforcement

Bachelor's Degrees

- Forensic Science
- Criminal Justice

Master's, Doctoral, and Professional Degrees

- Criminal Justice
- Criminology and Criminal Justice

Additional Stackable IBCs/Licensures

- Jailer – Basic County Corrections
- Basic Telecommunicator



Aligned Advanced Academic Courses

Dual Credit

Dual credit offerings will vary by Local Education Agency

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow a detective to learn about investigations and the role of detectives in law enforcement
- Intern in dispatch at a local law enforcement agency to learn about first responder roles and processes

Expanded Learning Opportunities

- Visit a police department
- Participate in TSA or SkillsUSA

TPSA

Aligned Industry-Based Certifications

- IAED Emergency Telecommunicator



Example Aligned Occupations

Police and Sheriff's Patrol Officers

Median Wage: \$64,373
Annual Openings: 5,424
10-Year Growth: 13%

Detectives and Criminal Investigators

Median Wage: \$82,090
Annual Openings: 1,536
10-Year Growth: 8%

First-Line Supervisors of Police and Detectives

Median Wage: \$97,571
Annual Openings: 5461
0-Year Growth: 12%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Law and Public Service Career Cluster

Statewide Program of Study: Law Enforcement

Course Information

9th Grade

Course	Prerequisites Corequisites	Career Clusters
Principles of Law, Public Safety, Corrections, and Security* 13029200 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Law Enforcement I 13029300 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisite: Principles of Law, Public Safety, Corrections, and Security Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Law Enforcement II 13029400 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisite: Law Enforcement I Recommended Corequisites: None	
Counseling and Mental Health 13024600 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisite: Principles of Human Services Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Forensic Science (science credit) 13029500 (1 credit)	Prerequisites: one credit in Biology, one credit in Chemistry, Integrated Physics and Chemistry, or Physics Corequisites: None Recommended Prerequisite: None Recommended Corequisites: None	



Transportation, Distribution, and Logistics Career Cluster

The Transportation, Distribution, and Logistics career cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes transportation infrastructure planning and management, logistics services, and mobile equipment and facility maintenance. This career cluster includes occupations ranging from automotive mechanic, avionics technician, and automotive entrepreneur to pilots and logistics planning professionals.

Statewide Program of Study: Automotive and Collision Repair

The Automotive and Collision Repair program of study focuses on the occupational and educational opportunities associated with servicing, repairing, and refinishing various types of vehicles. This program of study includes diagnosing and servicing vehicles and learning about processes, technologies, and materials used in reconstructing vehicles.



Secondary Courses for High School Credit

- | | |
|-------------------|---|
| 9th Grade | • Automotive Basics |
| 10th Grade | • Automotive Technology I: Maintenance and Light Repair |
| 11th Grade | • Automotive Technology II: Automotive Service |
| 12th Grade | • Practicum in Transportation Systems |

Aligned Advanced Academic Courses

- | | |
|--------------------|--|
| Dual Credit | Dual credit offerings will vary by Local Education Agency. |
|--------------------|--|

Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards Concentrator/Completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow an automotive technician at a car dealership
- Intern at a rental car company and assist technicians with vehicle maintenance
- Work at a local automotive repair shop and hold both customer service duties and automotive repair duties

Expanded Learning Opportunities

- Join a related automotive association and attend events
- Participate in SkillsUSA



Aligned Industry-Based Certifications

- ASE Entry-Level Automobile Maintenance and Light Repair (MR)
- ASE Entry-Level Automobile Automatic Transmission/Transaxle (AT)
- ASE Entry-Level Automobile Brakes (BR)
- ASE Entry-Level Automobile Electronic/Electrical Systems (EE)
- ASE Entry-Level Automobile Engine Performance (EP)
- ASE Entry-Level Automobile Engine Repair (ER)
- ASE Entry-Level Automobile Heating and Air Conditioning (AC)
- ASE Entry-Level Automobile Manual Drive Train and Axles (MD)
- ASE Entry-Level Automobile Service Technology
- ASE Entry-Level Automobile Suspension and Steering (SS)

Successful completion of the Automotive and Collision Repair program of study will fulfill requirements of the Business and Industry endorsement.



Example Postsecondary Opportunities

Apprenticeships

- Automotive Technician Apprenticeship



Associate Degrees

- Automobile/Automotive Mechanics Technology
- Autobody/Collision and Repair Technology

Bachelor's Degrees

- Autobody/Collision and Repair Technology
- Heavy Equipment Maintenance Technology

Additional Stackable IBCs/Licensures

- Automobile and Light Truck Certification (A1–A9)



Example Aligned Occupations

Automotive Service Technicians and Mechanics

Median Wage: \$44,809
Annual Openings: 6,285
10-Year Growth: 10%

Bus and Truck Mechanics and Diesel Engine Specialists

Median Wage: \$50,967
Annual Openings: 3,096
10-Year Growth: 19%

First-Line Supervisors of Mechanics, Installers, and Repairers

Median Wage: \$66,535
Annual Openings: 5,019
10-Year Growth: 19%

Data Source: TexasWages, Texas Workforce Commission. Retrieved 3/8/2024.



For more information visit:
<https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



Transportation, Distribution, and Logistics Career Cluster

Statewide Program of Study: Automotive and Collision Repair

Course Information

9th Grade

Course	Prerequisites Corequisites	Career Clusters
Automotive Basics 13039550 (1 credit)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

10th Grade

Course	Prerequisites Corequisites	Career Clusters
Automotive Technology I: Maintenance and Light Repair 13039600 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: Automotive Basics Recommended Corequisites: None	

11th Grade

Course	Prerequisites Corequisites	Career Clusters
Automotive Technology II: Automotive Service 13039700 (2 credits)	Prerequisites: Automotive Technology I: Maintenance and Light Repair Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

12th Grade

Course	Prerequisites Corequisites	Career Clusters
Practicum in Transportation Systems First Time Taken: 13040450 (2 credits) Second Time Taken: 13040460 (2 credits)	Prerequisites: None Corequisites: None Recommended Prerequisites: None Recommended Corequisites: None	

Career and Technical Education

Annual Public Notification of Nondiscrimination

Dickinson ISD offers career and technical education programs in Agriculture, Food and Natural Resources; Architecture and Construction; Arts, A/V Technology and Communications; Business Management and Administration; Education and Training; Finance; Government and Public Administration; Health Science; Human Services; Information Technology; Law, Public Safety, Corrections and Security; Manufacturing; Marketing; Science, Technology, Engineering and Mechanics; as well as Transportation, Distribution and Logistics. Admission to these programs is based on student interest, student needs and grade level requirements set by the Texas Education Agency.

It is the policy of Dickinson ISD not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities and provides equal access to the Boy Scouts and other designated youth groups as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.

It is the policy of Dickinson ISD not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended.

DISD will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and services programs.

For information about your rights or grievance procedures, contact the Title IX Coordinator at rcobb@dickinsonisd.org, (281) 229-6000, and/or the Section 504 Coordinator lrodriguez@dickinsonisd.org, (281) 229-6000.

Career and Technical Education

Annual Public Notification of Nondiscrimination

El Distrito Escolar Independiente de Dickinson ofrece programas de educación técnica y vocacional en Agricultura; Alimentos y Recursos Naturales; Arquitectura y Construcción; Artes; Tecnología y Comunicaciones de Audio/Video; Gerencia y Administración de Empresas; Educación y Entrenamiento; Finanzas; Administración Pública y Gubernamental; Ciencia Médica; Servicios Humanos; Informática; Derecho; Seguridad Pública; Correcciones y Seguridad; Manufactura; Mercadeo; Ciencia, Tecnología, Ingeniería y Mecánica; así como también Transportación, Distribución y Logística. La admisión a estos programas se basa en necesidades del estudiante y requerimientos de nivel académico impuestos por la Agencia de Educación de Texas.

Es norma de Distrito Escolar Independiente de Dickinson no discriminar en sus procedimientos de empleo por motivos de raza, color, origen nacional, sexo, impedimento o edad, tal como lo requieren el Título VI de la Ley de Derechos Civiles de 1964, según enmienda; Título IX de las Enmiendas en la Educación, de 1972, la ley de Discriminación por Edad, de 1975, según enmienda; y la Sección 504 de la Ley de Rehabilitación de 1973, según enmienda.

Es norma de Distrito Escolar Independiente de Dickinson no discriminar en sus programas, servicios o actividades vocacionales por motivos de raza, color, origen nacional, sexo o impedimento, tal como lo requieren el Título VI de la Ley de Derechos Civil es de 1964, según enmienda; Título IX de las Enmiendas en la Educación de 1972, y la Sección 504 del a Ley de Rehabilitación de 1973, según enmienda.

Distrito Escolar Independiente de Dickinson tomará las medidas necesarias para asegurar que la falta de habilidad en el uso del inglés no sea un obstáculo para la admisión y participación en todos los programas educativos y vocacionales.

Para información sobre sus derechos o procedimientos de quejas, comuníquese con el Coordinador del Título IX en rcobb@dickinsonisd.org, (281) 229-6000, y/o el Coordinador de la Sección 504 en lrodriguez@dickinsonisd.org, (281) 229-6000.