



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.

Offered at: Carroll, King, Miller & Ray High Schools



Secondary Courses for High School Credit

Level 1	Principles of Arts, Audio/Video Technology, and Communications (Only offered at Carroll, Miller, & Ray)
Level 2	Audio/Video Production I
Level 3	Audio/Video Production II
Level 4	- Practicum in Audio/Video Production - Career Preparation for Programs of Study - Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

AP or IB	IB Film SL IB Film 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 a sound designer to learn how sound and foley are 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	- 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
- Adobe Certified Professional in Print and Digital Media Publication Using Adobe InDesign
- Adobe Certified Professional in Visual Design Using Adobe Photoshop



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/License

- 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%

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>

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

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 and 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.

Offered at King High School



Secondary Courses for High School Credit



Level 1	• Principles of Arts, Audio/Video Technology, and Communications –OR– Digital Media
Level 2	• Fashion Design I • Graphic Design and Illustration I (not required)
Level 3	• Fashion Design II + Fashion Design II Lab
Level 4	• Practicum in Fashion Design –OR– Career Preparation for Programs of Study

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.

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Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- 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

- 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 Visual Design Using Adobe Photoshop



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/License

- 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



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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 and 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.

Offered at Moody & Veterans Memorial High Schools



Secondary Courses for High School Credit

Level 1	• Digital Media
Level 2	• Graphic Design and Illustration I
Level 3	• Graphic Design and Illustration II
Level 4	• Practicum in Graphic Design and Illustration • Career Preparation for Programs of Study • Career Preparation for Programs of Study + Extended Career Preparation

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	- 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	- 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
- Adobe Certified Professional in Visual Design Using Adobe Photoshop
- Adobe Certified Professional in Visual Effects and Motion Graphics Using Adobe After Effects



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/License

- 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
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Art Directors

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Annual Openings: 619
10-Year Growth: 18%

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



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Regional Program of Study: Printing and Imaging

Approved in ESC Regions 2, 4, 5, 7, 9, 10, 11, 13, 18 and 20

*The list of approved ESC regions is updated every school year. Be sure to check the CTE regional program of study website for updates.

The Printing and Imaging regional program of study focuses on occupational and educational opportunities associated with designing packaging, displays, or logos to meet specific commercial or promotional needs. This program of study includes the foundations of business management, customer service, graphic design, graphic production, and large-format printing.

Offered at King High School



Secondary Courses for High School Credit



Level 1	• Principles of Arts, Audio/Video Technology, and Communications
Level 2	• Printing and Imaging Technology I
Level 3	• Printing and Imaging Technology II + Printing and Imaging Technology II Lab
Level 4	• Practicum in Printing and Imaging Technology

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.
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Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

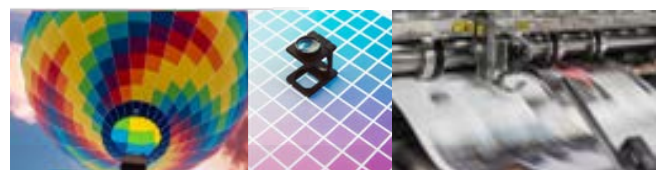
- Shadow employees at a multimedia studio and rotate through departments to learn how digital and print media is produced across mediums
- Participate in an internship at a publishing company and work on a project to bring a book series to print

Expanded Learning Opportunities

- Participate in SkillsUSA or TSA
- Tour a printing company

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
- Adobe Certified Professional in Visual Design Using Adobe Photoshop
- Adobe Certified Professional in Visual Effects and Motion Graphics Using Adobe After Effects



Example Postsecondary Opportunities

Associate Degrees

- Graphic Design
- Commercial and Advertising Art

Bachelor's Degrees

- Web Page, Digital/Multimedia and Information Resources Design
- Animation, Interactive Technology, Video Graphics, and Special Effects

Master's, Doctoral, and Professional Degrees

- Digital Arts
- Game and Interactive Media Design

Additional Stackable IBCs/License

- Xerox iGen4 Press Operator Certification



Example Aligned Occupations

Multimedia Artists and Animators

Median Wage: \$65,036
Annual Openings: 337
10-Year Growth: 20%

Art Directors

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





Architecture and Construction Career Cluster

The Architecture and Construction career cluster focuses on designing, planning, managing, building, and maintaining the built environment. This career cluster includes occupations ranging from architect, carpenter, and construction manager to electrician, plumber, and heating, air conditioning, and refrigeration technician.

Statewide Program of Study: Carpentry

The Carpentry program of study focuses on occupational and educational opportunities related to constructing, installing, and repairing structures and fixtures made of wood (including frameworks, partitions, joists, studding, rafters, and stairways). The program of study includes installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings.

Offered at Ray High School



Secondary Courses for High School Credit

Level 1	- Principles of Construction CE# - Principles of Construction CE#
Level 2	- Construction Technology I A CE# - Construction Technology I B CE# *
Level 3	- Construction Technology II A CE# - Construction Technology II B CE#
Level 4	- Practicum in Construction Technology I A CE# - Practicum in Construction Technology I B CE# - Career Preparation for Programs of Study

Aligned Advanced Academic Courses

Dual Credit	Dual credit offerings will vary by local education agency.
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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 carpenter to practice skills such as measuring materials and assembling structures
- Participate in a pre-apprenticeship that includes activities like installing cabinets, drywall, and siding

Expanded Learning Opportunities

- Shadow a construction manager to learn more about how construction teams work together to complete projects
- Participate in SkillsUSA

Aligned Industry-Based Certifications

- NCCER Core

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Carpenter

Associate Degrees

- Construction Management
- Construction Engineering Technology
- Building Construction Technology

Bachelor's Degrees

- Construction Engineering
- Construction Science
- Construction Site Management

Master's, Doctoral, and Professional Degrees

- Construction Engineering Technology
- Construction Engineering
- Construction Management
- Project Management



Example Aligned Occupations

Drywall and Ceiling Tile Installers

Median Wage: \$44,699
Annual Openings: 758
10-Year Growth: 14%

Carpenters

Median Wage: \$46,272
Annual Openings: 5,623
10-Year Growth: 15%

Construction Managers

Median Wage: \$95,072
Annual Openings: 6,325
10-Year Growth: 24%





Architecture and Construction Career Cluster

The Architecture and Construction career cluster focuses on designing, planning, managing, building, and maintaining the built environment. This career cluster includes occupations ranging from architect, carpenter, and construction manager to electrician, plumber, and heating, air conditioning, and refrigeration technician.

Statewide Program of Study: **Construction Management and Inspection**

The Construction Management and Inspection program of study focuses on occupational and educational opportunities associated with producing cost estimates for construction projects to support bidding on or determining the price of products or services. The program of study includes inspecting structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations.

Offered at Carroll High School



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Construction A CE# Principles of Construction A CE# |
| Level 2 | <ul style="list-style-type: none"> Building Maintenance Technology I A Building Maintenance Technology I B * |
| Level 3 | <ul style="list-style-type: none"> Building Maintenance Technology II A Building Maintenance Technology II B |
| Level 4 | <ul style="list-style-type: none"> Practicum in Construction Management A CE# Practicum in Construction Management B CE# |

Aligned Advanced Academic Courses

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

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Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow a construction manager to learn how to lead a team and develop a budget
- Participate in a pre-apprenticeship to clean and prepare construction sites by digging trenches and setting up scaffolding

Expanded Learning Opportunities

- Shadow a building inspector or cost estimator
- Participate in SkillsUSA

Aligned Industry-Based Certifications

- NCCER Core

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Building Inspector

Associate Degrees

- Construction Management
- Construction Engineering Technology
- Building/Property Maintenance
- Building/Construction Site Management

Bachelor's Degrees

- Construction Engineering Technology
- Construction Management
- Building/Property Maintenance

Master's, Doctoral, and Professional Degrees

- Construction Engineering Technology
- Construction Engineering
- Construction Management
- Project Management



Example Aligned Occupations

Construction and Building Inspectors

Median Wage: \$62,251
Annual Openings: 1,585
10-Year Growth: 9%

First-Line Supervisors of Construction Trades and Extraction Workers

Median Wage: \$64,473
Annual Openings: 9,513
10-Year Growth: 23%

Construction Managers

Median Wage: \$95,072
Annual Openings: 6,325
10-Year Growth: 24%

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>



Architecture and Construction Career Cluster

The Architecture and Construction career cluster focuses on designing, planning, managing, building, and maintaining the built environment. This career cluster includes occupations ranging from architect, carpenter, and construction manager to electrician, plumber and heating, air conditioning and refrigeration technician.

Statewide Program of Study: *Electrical*

The Electrical program of study focuses on occupational and educational opportunities associated with installing, maintaining, and repairing electrical wiring, equipment, and fixtures. The program of study also addresses installing and repairing telecommunications cable including fiber optics.

Offered at all CCISD High Schools



Secondary Courses for High School Credit

- | | |
|---------|---------------------------------|
| Level 1 | • Principles of Construction |
| Level 2 | • Electrical Technology I * |
| Level 3 | • Electrical Technology II * |
| Level 4 | • Practicum in Entrepreneurship |

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 an internship with an electrical company to develop installation skills
- Join a pre-apprenticeship program that involves determining if electrical wiring is up to code
- Interview an electrician about their training and education

Expanded Learning Opportunities

- Participate in SkillsUSA
- Participate in trade competitions

Aligned Industry-Based Certifications

- NCCER Core
- NCCER Electrical 1
- NCCER Electrical Level II

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Electrician

Associate Degrees

- Electrical and Power Transmission Installation
- Electrical Power and Controls
- Electromechanical Technology

Bachelor's Degrees

- Construction Engineering
- Electrical, Electronic, and Communications
- Engineering Electrical Engineering

Master's, Doctoral, and Professional Degrees

- Construction Engineering
- Construction Management

Additional Stackable IBCs/License

- Journeyman Electrician
- Master Electrician



Example Aligned Occupations

Electricians Helpers

Median Wage: \$38,140
Annual Openings: 1,632
10-Year Growth: 20%

Electricians

Median Wage: \$54,769
Annual Openings: 9,221
10-Year Growth: 27%

Construction Managers

Median Wage: \$95,072
Annual Openings: 6,325
10-Year Growth: 24%

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

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.

Offered at Carroll High School



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | • Principles of Agriculture, Food, and Natural Resources |
| Level 2 | • Small Animal Management
• Equine Science |
| Level 3 | • Livestock Production |
| Level 4 | • Advanced Animal Science |

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

- Elanco Fundamentals of Animal Science Certification
- Equine Management and Evaluation 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

- Marine Sciences
- Biotechnology

Additional Stackable IBCs/License

- 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>

Successful completion of the Animal Science program of study will fulfill requirements of a Business and Industry endorsement.



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.

Offered at Ray High School



Secondary Courses for High School Credit

Level 1	Principles of Agriculture, Food, and Natural Resources
Level 2	- Landscape Design and Management - Turf Grass Management
Level 3	Floral Design
Level 4	Advanced Floral Design

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.	

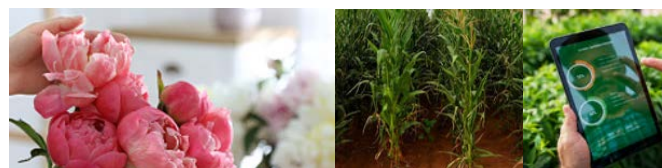
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Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	- 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	- 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

- BASF Plant Science Certification
- Principles of Floral Design 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/License

- 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>



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: *Entrepreneurship*

The Entrepreneurship program of study focuses on occupational and educational opportunities associated with planning, launching, directing, and coordinating public or private sector ventures. This program of study includes formulating policies, launching businesses or organizations, managing daily operations, analyzing management structures, and planning for the use of materials and human resources.

Offered at Branch, Carroll, Coles, Collegiate, King, Miller, & Veterans Memorial High Schools



Secondary Courses for High School Credit

Level 1	• Business Information Management I
Level 2	• Entrepreneurship I *
Level 3	• Entrepreneurship II
Level 4	• Practicum in Entrepreneurship • Career Preparation for Programs of Study • Career Preparation for Programs of Study + Extended Career Preparation

Aligned Advanced Academic Courses

AP or IB	AP Statistics IB Mathematics: Analysis and Approaches
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 start-up or a business incubator • Participate in the development and launch of a school-based enterprise
Expanded Learning Opportunities	• Job shadow an entrepreneur • Participate in BPA, DECA, FBLA, or related UIL events

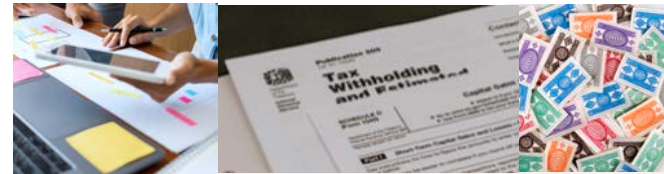
Aligned Industry-Based Certifications

- Entrepreneurship and Small Business

* Indicates the course in which industry-based certification is administered



Successful completion of the Entrepreneurship program of study will fulfill requirements of the Business and Industry endorsement.



Example Postsecondary Opportunities

Associate Degrees

- Operations Management and Supervision
- Organizational Leadership

Bachelor's Degrees

- Business Administration and Management
- Public Administration

Master's, Doctoral, and Professional Degrees

- Business Administration
- Public Administration

Additional Stackable IBCs/License

- Salesforce
- Service Contract Providers



Example Aligned Occupations

General and Operations Managers

Median Wage: \$83,220
Annual Openings: 25,450
10-Year Growth: 23%

Management Analysts

Median Wage: \$93,983
Annual Openings: 6,030
10-Year Growth: 25%

Chief Executives

Median Wage: \$163,567
Annual Openings: 648
10-Year Growth: 3%

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



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<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

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.

Offered at Ray High School



Secondary Courses for High School Credit

Level 1	Digital Media
Level 2	- Sports and Entertainment Marketing (.5 Credit) - Entrepreneurship I (Must take for IBC) *
Level 3	- Sports and Entertainment Marketing II (.5 Credit) & Advertising (.5 Credit) - Or - Social Media Marketing (.5 Credit)
Level 4	- Practicum in Entrepreneurship - Career Preparation for Programs of Study - Career Preparation for Programs of Study + Extended Career Preparation

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

- Entrepreneurship and Small Business
- * Indicates the course in which industry-based certification is administered

Successful completion of the Marketing and Sales program of study will fulfill requirements of the Business and Industry endorsement.



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/License

- 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>

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.

Regional Program of Study: Drone (Unmanned Vehicle)

Approved in ESC Regions 2, 4, 5, 6, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, and 20

**The list of approved ESC regions is updated every school year. Be sure to check the CTE regional program of study website for updates.*

The Drone (Unmanned Vehicle) regional program of study focuses on the occupational and educational opportunities associated with operating or designing an unmanned aircraft using a ground-based controller. This program of study includes understanding and designing systems of communications between the controller and the aircraft to ensure compliance with federal aviation safety regulations.

Offered at Miller & Moody High Schools



Secondary Courses for High School Credit

- | | |
|---------|--|
| Level 2 | • Robotics I |
| Level 3 | • Robotics II * |
| Level 4 | • Practicum in Manufacturing
• Scientific Research and Design |

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 | <ul style="list-style-type: none"> • Intern with a public service, engineering, construction, or transportation firm • Practice drone operations with an industry professional at a work site |
| Expanded Learning Opportunities | <ul style="list-style-type: none"> • Participate in an aerial drone competition • Participate in SkillsUSA or TSA |

Aligned Industry-Based Certifications

- FAA Part 107 Remote Drone Pilot
- * Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Associate Degrees

- Airline/Commercial/Professional Pilot and Flight Crew
- Manufacturing Engineering Technology/Technician

Bachelor's Degrees

- Aviation Science
- Aeronautical/Aerospace Engineering Technology

Master's, Doctoral, and Professional Degrees

- Aerospace, Aeronautical, and Astronautical/Space Engineering, General

Additional Stackable IBCs/License

- Aerial Mapping and 3D Modeling Certification



Example Aligned Occupations

Aerospace Engineering and Operations Technicians

Median Wage: \$48,204
Annual Openings: 192
10-Year Growth: 21%

Avionics Technicians

Median Wage: \$72,461
Annual Openings: 255
10-Year Growth: 16%



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.

Offered at Moody High School



Secondary Courses for High School Credit

Level 1	Introduction to Engineering Design (PLTW) 9th Grade
Level 2	Robotics I (elective)
Level 3	- Robotics II (elective) - Engineering Science 10th Grade - Civil Engineering and Architecture (PLTW) 11th Grade - Engineering Design and Development (PLTW) 12th Grade

Aligned Advanced Academic Courses

AP or IB	AP Calculus AB	AP Physics 1	IB Physics SL
	AP Computer Science A	AP Physics 2	IB Physics HL
		AP Statistics	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	- Intern at an engineering, robotics, or aerospace company. - Visit an engineering firm and shadow multiple types of engineers.
Expanded Learning Opportunities	- Participate in SkillsUSA or TSA - Join a local engineering association and attend meetings.

Aligned Industry-Based Certifications

- Autodesk Associate Fusion 360

- Autodesk Associate Revit



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%

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

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.

Offered at Branch, Carroll, Colligate, King, Miller, Moody, Ray & Veterans Memorial High Schools



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | • Principles of Education and Training |
| Level 2 | • Child Development |
| Level 3 | • Communication and Technology in Education |
| Level 4 | • Instructional Practices * |

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 (age requirement 18)

* Indicates the course in which industry-based certification is administered



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/License

- 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: 2,676
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>



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: **Nursing Science**

The Nursing Science program of study focuses on occupational and educational opportunities associated with patient care. This program of study includes the practice of caring for patients, performing routine procedures such as monitoring vital signs, developing, and implementing care plans, maintaining medical records, and managing disease or pain.

Offered at Moody High School



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Nursing Science |
| Level 2 | <ul style="list-style-type: none"> Medical Terminology A CE# Medical Terminology B CE# |
| Level 3 | <ul style="list-style-type: none"> Anatomy and Physiology Science of Nursing Part A CE# * Leadership and Management in Nursing Part A CE# Science of Nursing Part B CE# * Leadership and Management in Nursing Part B CE# |
| Level 4 | <ul style="list-style-type: none"> Practicum in Nursing A CE# * Practicum in Nursing B CE# * |

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 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 medical assistant at a community clinic, hospital, or assisted living facility - Conduct informational interviews with nurses in different departments and healthcare settings
Expanded Learning Opportunities	- Volunteer at community clinics, hospitals, assisted living and long-term care facilities - Participate in HOSA or SkillsUSA

Aligned Industry-Based Certifications

- Certified Clinical Medical Assistant
- Patient Care Technician
- Electrocardiography (EKG) Technician
- Phlebotomy Technician

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Registered Nurse Resident

Associate Degrees

- Medical Assisting
- Vocational Nursing

Bachelor's Degrees

- Registered Nursing
- Nursing Administration

Master's, Doctoral, and Professional Degrees

- Nursing Administration
- Nursing Science

Additional Stackable IBCs/License

- Certified Emergency Nurse



Example Aligned Occupations

Nursing Assistants

Median Wage: \$30,856
 Annual Openings: 10,936
 10-Year Growth: 15%

Licensed Practical and Licensed Vocational Nurses

Median Wage: \$50,913
 Annual Openings: 6,865
 10-Year Growth: 17%

Registered Nurses

Median Wage: \$79,831
 Annual Openings: 16,207
 10-Year Growth: 17%

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>



Hospitality and Tourism Career Cluster

The Hospitality and Tourism career cluster focuses on the management, marketing, and operations of restaurants, lodging, attractions, recreation events, and travel-related services. This career cluster includes occupations ranging from reservation and transportation ticket agent to event planner and general manager.

Statewide Program of Study: Culinary Arts

The Culinary Arts program of study focuses on occupational and educational opportunities associated with the planning, directing, or coordinating activities of a food and beverage organization or department. This program of study includes opportunities involved in directing and participating in the preparation of food.

Offered at Moody & Ray High Schools



Secondary Courses for High School Credit

Level 1	• Principles of Hospitality and Tourism
Level 2	• Introduction to Culinary Arts
Level 3	• Culinary Arts I *
Level 4	• Food Science • Practicum in Culinary Arts

Aligned Advanced Academic Courses

AP or IB	AP Chemistry IB Chemistry SL
-----------------	---------------------------------

Dual Credit	Dual credit offerings will vary by local educational agency.
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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 director of a non-profit that produces and delivers food for communities in need
- Intern at a catering company and learn about food production for large-scale events
- Work part-time in a restaurant as a line cook or chef

Expanded Learning Opportunities

- Participate in FCCLA
- Participate in SkillsUSA
- Participate in American Culinary Association or the Texas Restaurant Association

Aligned Industry-Based Certifications

- Culinary Meat Selection and Cookery Certification
- ServSafe Manager

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Associate Degrees

- Culinary Arts
- Baking and Pastry Arts

Bachelor's Degrees

- Hotel/Motel Administration/Management
- Culinary Science

Master's, Doctoral, and Professional Degrees

- Organizational Leadership
- Foodservice Systems Administration/Management

Additional Stackable IBCs/License

- Food Manager License

Example Aligned Occupations

Bakers

Median Wage: \$29,466
Annual Openings: 2,942
10-Year Growth: 26%

Chefs and Head Cooks

Median Wage: \$44,761
Annual Openings: 950
10-Year Growth: 37%

General and Operations Managers

Median Wage: \$83,220
Annual Openings: 25,450
10-Year Growth: 23%

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>



Hospitality and Tourism Career Cluster

The Hospitality and Tourism career cluster focuses on the management, marketing, and operations of restaurants, lodging, attractions, recreation events, and travel-related services. This career cluster includes occupations ranging from reservation and transportation ticket agent to event planner and general manager.

Statewide Program of Study: Culinary Arts

The Culinary Arts program of study focuses on occupational and educational opportunities associated with the planning, directing, or coordinating activities of a food and beverage organization or department. This program of study includes opportunities involved in directing and participating in the preparation of food.

Offered at Carroll, King, Miller, & Veterans Memorial High School



Secondary Courses for High School Credit

Level 1	• Introduction to Culinary Arts
Level 2	• Culinary Arts * -OR- • Entrepreneurship I & • Foundations of Restaurant Management *
Level 3	• Introduction to Event and Meeting Planning
Level 4	• Food Science –OR- • Practicum in Entrepreneurship

Aligned Advanced Academic Courses

AP or IB	AP Chemistry IB Chemistry SL
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	- Shadow a director of a non-profit that produces and delivers food for communities in need - Intern at a catering company and learn about food production for large-scale events - Work part-time in a restaurant as a line cook or chef
Expanded Learning Opportunities	- Participate in FCCLA - Participate in SkillsUSA - Participate in American Culinary Association or the Texas Restaurant Association

Aligned Industry-Based Certifications

- Culinary Meat Selection and Cookery Certification
- ServSafe Manager

* Indicates the course in which industry-based certification is administered

Successful completion of the Culinary Arts program of study will fulfill requirements of the Business and Industry endorsement.



Example Postsecondary Opportunities

Associate Degrees

- Culinary Arts
- Baking and Pastry Arts

Bachelor's Degrees

- Hotel/Motel Administration/Management
- Culinary Science

Master's, Doctoral, and Professional Degrees

- Organizational Leadership
- Foodservice Systems Administration/Management

Additional Stackable IBCs/License

- Food Manager License



Example Aligned Occupations

Bakers

Median Wage: \$29,466
Annual Openings: 2,942
10-Year Growth: 26%

Chefs and Head Cooks

Median Wage: \$44,761
Annual Openings: 950
10-Year Growth: 37%

General and Operations Managers

Median Wage: \$83,220
Annual Openings: 25,450
10-Year Growth: 23%

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>



Hospitality and Tourism Career Cluster

The Hospitality and Tourism career cluster focuses on the management, marketing, and operations of restaurants, lodging, attractions, recreation events, and travel-related services. This career cluster includes occupations ranging from reservation and transportation ticket agent to event planner and general manager.

Statewide Program of Study: Travel, Tourism, and Attractions

The Travel, Tourism, and Attractions program of study focuses on occupational and educational opportunities associated with the marketing and sales of travel and tourism services. This program of study includes planning, directing, and coordinating marketing or business policies and programs. Students will identify potential customers and determine demand and promotional strategies for products and services.

Offered at Coles High School



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | <ul style="list-style-type: none"> Principles of Hospitality and Tourism |
| Level 2 | <ul style="list-style-type: none"> Travel and Tourism Management Sports and Entertainment Marketing Entrepreneurship I * |
| Level 3 | <ul style="list-style-type: none"> Global Business |

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 | <ul style="list-style-type: none"> Intern at a local tourism and visitors bureau to learn about managing and marketing attractions and resources Work part-time as a tour guide at a local attraction |
| Expanded Learning Opportunities | <ul style="list-style-type: none"> Volunteer at a local community event (fair or rodeo) Tour an attraction, theme park, or event center Participate in FCCLA |

Aligned Industry-Based Certifications

- Entrepreneurship and Small Business

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Associate Degrees

- Tourism and Travel Services Management
- E-Commerce/Electronic Commerce

Bachelor's Degrees

- Marketing/Marketing Management
- Business/Managerial Economics

Master's, Doctoral, and Professional Degrees

- Marketing/Marketing Management
- Tourism and Travel Services Management

Additional Stackable IBCs/License

- Tourism Management



Example Aligned Occupations

Reservation and Transportation Ticket Agents and Travel Clerks

Median Wage: \$48,000
Annual Openings: 2,031
10-Year Growth: 17%

Travel Agents

Median Wage: \$39,991
Annual Openings: 473
10-Year Growth: 22%

Market Research Analysts and Marketing Specialists

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

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

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.

Offered at all CCISD High Schools



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Information Technology * |
| Level 4 | <ul style="list-style-type: none"> Independent Study in Evolving/Emerging Technologies Practicum in Information Technology |

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

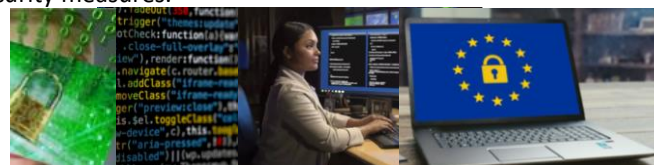
Work-Based Learning Activities	- Intern at a local bank, hospital, or government office to develop skills in implementing security measures - Interview with an information security analyst to learn how they plan for, monitor, and upgrade security measures at their organization
Expanded Learning Opportunities	- Participate in a Hackathon - Participate in TSA or SkillsUSA

Aligned Industry-Based Certifications

- | | |
|--|---|
| <ul style="list-style-type: none"> CompTIA A+ Certification * CompTIA IT Fundamentals+ | <ul style="list-style-type: none"> CompTIA Network+ CompTIA Security+ |
|--|---|

* Indicates the course in which industry-based certification is administered

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



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)



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>



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.

Offered at Carroll, King, Miller, & Moody High Schools



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Law, Public Safety, Connections, and Security (Offered at Miller only) |
| Level 2 | <ul style="list-style-type: none"> Law Enforcement I |
| Level 3 | <ul style="list-style-type: none"> Law Enforcement II (Offered at Miller only) |
| Level 4 | <ul style="list-style-type: none"> Practicum in Law, Public Safety, Corrections, and Security Forensic Science |

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

Aligned Industry-Based Certifications

- IAED Emergency Telecommunicator



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



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: 5,461
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>



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.

Offered at Miller High School



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 3 | <ul style="list-style-type: none"> Automotive Technology I: Maintenance and Light Repair |
| Level 4 | <ul style="list-style-type: none"> Automotive Technology II: Automotive Service + Advanced Transportation Systems Laboratory 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 automatic repair duties

Expanded Learning Opportunities

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

Aligned Industry-Based Certifications

- | | |
|---|--|
| <ul style="list-style-type: none"> ASE Entry-Level Automobile Automatic Transmission/Transaxle (AT) ASE Entry-Level Automobile Brakes (BR) ASE Entry-Level Automobile Electronic/Electrical Systems (EE) | <ul style="list-style-type: none"> ASE Entry-Level Automobile Engine Repair (ER) ASE Entry-Level Automobile Suspension and Steering (SS) |
|---|--|



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/License

- 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

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

Statewide Program of Study: Aviation Pilots

The Pilots and Aviation Operations program of study focuses on occupational and educational opportunities associated with the principles and science of flight. This program of study includes the exploration and understanding of aviation engineering, air navigational aids, air traffic controls, and communications equipment to ensure conformance with federal safety regulations.

Offered at Veterans Memorial High School



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | • Introduction to Aerospace and Aviation |
| Level 2 | • Introduction to Unmanned Aerial Vehicles (UAV) |
| Level 3 | • Aerospace Engineering (PLTW) (optional) |
| Level 4 | • Practicum in Transportation Systems
• Scientific Research and Design |

Aligned Advanced Academic Courses

AP or IB	AP Calculus BC AP Physics C: Mechanics
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 commercial airline pilot for to learn about pre- and post-flight routines - Intern at a technology company that produces drones to learn about aerial robotics and drone pilot requirements
Expanded Learning Opportunities	- Explore virtual aviation websites - Participate in SkillsUSA

Aligned Industry-Based Certifications

- FAA Part 107 Remote Drone Pilot



Example Postsecondary Opportunities

Apprenticeships

- Air Transport Pilot Apprentice

Associate Degrees

- Airline/Commercial/Professional Pilot and Flight Crew

Bachelor's Degrees

- Airline/Commercial/Professional Pilot and Flight Crew

Additional Stackable IBCs/License

- Airman Certificate



Example Aligned Occupations

Commercial Pilots

Median Wage: \$108,120
Annual Openings: 663
10-Year Growth: 20%

Airline Pilots, Copilots, and Flight Engineers

Median Wage: \$180,060
Annual Openings: 1,204
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>



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.

Regional Program of Study: Maritime

Approved in ESC Regions 2, 4, and 5

*The list of approved ESC regions is updated every school year, be sure to check the CTE regional program of study website for updates.

The Maritime regional program of study focuses on educational and occupational opportunities associated with the operation of water vessels. This program of study includes maintenance procedures and operation of maritime navigational aids, maritime traffic controls, and communications equipment to ensure conformance with federal safety regulations.

Offered at Carroll High School



Secondary Courses for High School Credit

Level 1	• Principles of Maritime Science
Level 2	• Maritime Science I
Level 3	• Maritime Science II
Level 4	• 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 at a maritime port to learn about maritime traffic control
- Participate in a pre-apprenticeship with a government agency (such as U.S. Coast Guard) working closely with ship engineers

Expanded Learning Opportunities

- Participate in SkillsUSA
- Tour various maritime vessels

Aligned Industry-Based Certifications

- Certified Logistics Technician (CLT)



Example Postsecondary Opportunities

Apprenticeships

- Maritime Apprenticeship Program (MAP)

Associate Degrees

- Logistics
- Transportation and Mobility Management

Bachelor's Degrees

- Logistics and Supply Chain Management
- Maritime Transportation

Master's, Doctoral, and Professional Degrees

- Logistics
- Transportation and Mobility Management

Additional Stackable IBCs/License

- Limited Tonnage Workboat Mate



Example Aligned Occupations

Sailors and Marine Oilers

Median Wage: \$69,299
Annual Openings: 329
10-Year Growth: 10%

Motorboat Operators

Median Wage: \$40,223
Annual Openings: 83
10-Year Growth: 14%

Captains, Mates, and Pilots of Water Vessels

Median Wage: \$102,803
Annual Openings: 293
10-Year Growth: 13%

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

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.

Offered at Veterans Memorial High School



Secondary Courses for High School Credit

Level 1	- Principles of Business, Marketing, and Finance DC# - Business Information Management I DC#
Level 2	Accounting I DC#
Level 3	Accounting II DC#
Level 4	- Practicum in Entrepreneurship - Career Preparation for Programs of Study (First Time Taken) Accounting & Financial Services

Aligned Advanced Academic Courses

Dual Credit	Accounting I DC Accounting II DC
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The courses listed above are offered as dual credit courses in partnership with Del Mar College.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

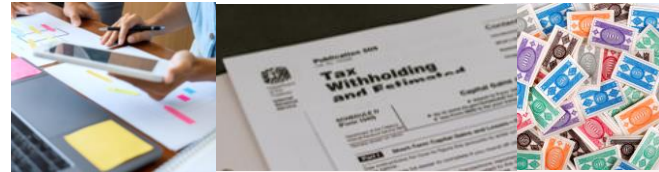
- Intern with a certified public accountant (CPA) at a local business
- Intern with a city or county auditor's office
- Shadow a financial advisor as an intern at an investment company

Expanded Learning Opportunities

- Participate in BPA, DECA, or FBLA
- Explore student membership in professional organizations such as AICPA, CIMA, or TXCPA

Aligned Industry-Based Certifications

- Not currently offered



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/License

- 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>



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: **Biomedical Science**

The Biomedical Science program of study focuses on occupational and educational opportunities associated with the study of biology and medicine. This program of study includes researching and diagnosing diseases, pre-existing conditions, and other determinants of health. Students will also practice patient care and communication.

Offered at Veterans Memorial High School



Secondary Courses for High School Credit

Level 1	• Principles of Biomedical Science (PLTW)
Level 2	• Human Body Systems (PLTW)
Level 3	• Medical Interventions (PLTW)
Level 4	• Biomedical Innovation (PLTW) *

Aligned Advanced Academic Courses

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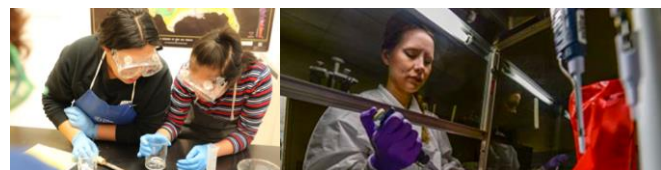
Students should be advised to consider these course opportunities to enrich their preparation. AP or IB courses not listed under the Secondary Courses for High School Credit section of this framework document do not count towards concentrator/completer status for this program of study.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	- Intern with a biological or medical scientist at a healthcare organization or health research company to learn scientific testing methods - Shadow a clinical laboratory technician to observe laboratory testing processes
Expanded Learning Opportunities	Participate in Health Occupations Students of America (HOSA)

Aligned Industry-Based Certifications

- Biomedical Innovation (PLTW)



Example Postsecondary Opportunities

Apprenticeships

- Medical Laboratory Technician

Associate Degrees

- Biotechnology
- Biological Sciences

Bachelor's Degrees

- Biology
- Cellular and Molecular Biology

Master's, Doctoral, and Professional Degrees

- Forensic Science and Technology
- Biomedical Sciences

Additional Stackable IBCs/License

- Cytotechnologist



Example Aligned Occupations

Medical Equipment Preparers

Median Wage: \$38,827
Annual Openings: 519
10-Year Growth: 18%

Forensic Science Technicians

Median Wage: \$56,971
Annual Openings: 249
10-Year Growth: 22%

Biological Technicians

Median Wage: \$45,787
Annual Openings: 879
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>



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

Approved in ESC Regions 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 17, 18, 19, & 20

**The list of approved ESC regions is updated every school year. Be sure to check the CTE regional program of study website for updates.*

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.

Offered at Miller High School



Secondary Courses for High School Credit

Level 2	- Nail Care, Enhancements, and Spa Services A DC# - Nail Care, Enhancements, and Spa Services B DC#
Level 3	- Principles of Cosmo DC# - Esthetics A DC# - Esthetics B DC#
SUMMER	Cosmetology I/Lab DC#
Level 4	Cosmetology II DC# *

Aligned Advanced Academic Courses

Dual Credit

Nail Care, Enhancements, and Spa Services DC
Principles of Cosmetology DC
Esthetics DC
Cosmetology 1 / LAB DC
Cosmetology II DC

The courses listed above are offered as dual credit courses in partnership with Del Mar College.

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

- Cosmetology Operator License

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Apprentice Stylist

Associate Degrees

- Cosmetology Operator
- Esthetics and Skin Care

Additional Stackable IBCs/License

- 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/college-career-and-military-prep/career-and-technical-education/programs-of-study-additional-resources>



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.

Offered at Carroll, King, Miller, Ray, & Veterans

Memorial High Schools



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | <ul style="list-style-type: none"> Principles of Health Science |
| Level 2 | <ul style="list-style-type: none"> Medical Terminology A CE# Medical Terminology B CE# |
| Level 3 | <ul style="list-style-type: none"> Anatomy and Physiology Health Science Theory A CE# Health Science Theory B CE# * |
| Level 4 | <ul style="list-style-type: none"> Practicum in Health Science A CE# Practicum in Health Science B CE# * |

Aligned Advanced Academic Courses

AP or IB

AP Biology
IB Biology SL
IB Biology HL

AP Chemistry
IB Chemistry SL
IB Chemistry HL

Continuing Education

Medical Terminology CE
Health Science Theory CE
Practicum in Health Science CE

The courses above are offered in partnership with Del Mar College. Students will earn college credit toward certification. These credits may be matriculated to credits in pursuit of related degrees via an application process with Del Mar College.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- 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 or hospital/clinical job

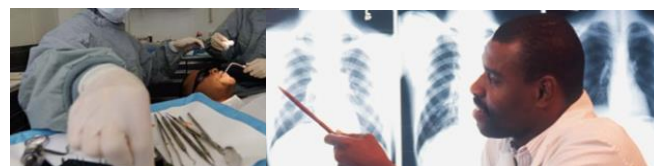
Expanded Learning Opportunities

- 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

- Certified Clinical Medical Assistant
- Phlebotomy Technician

* Indicates the course in which industry-based certification is administered



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/License

- 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

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 - Dental*

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.

Offered at Carroll High School



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | • Introduction to Dental Science |
| Level 2 | • Dental Anatomy and Physiology |
| Level 3 | • Anatomy and Physiology
• Dental Equipment and Procedures |
| Level 4 | • Practicum in Health Science- Dentistry * |

Aligned Advanced Academic Courses

AP or IB	AP Biology	AP Chemistry
	IB Biology SL	IB Chemistry SL
	IB Biology HL	IB Chemistry HL

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- 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 or hospital/clinical job

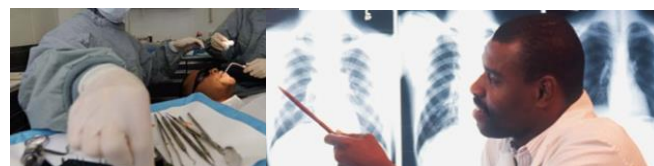
Expanded Learning Opportunities

- 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

- Registered Dental Assistant X-Ray Certification

* Indicates the course in which industry-based certification is administered



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/License

- 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:

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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: *Exercise Science, Wellness, and Restoration*

The Exercise Science, Wellness, and Restoration program of study focuses on occupational and educational opportunities associated with assisting patients with maintaining physical, mental, and emotional health. This program of study includes researching diet and exercise needed to maintain a healthy, balanced lifestyle and exploring techniques to help patients recover from injury, illness, or disease.

Offered at Veterans Memorial High School



Secondary Courses for High School Credit

- | | |
|----------------|---|
| Level 1 | • Principles of Exercise Science and Wellness |
| Level 2 | • Kinesiology I |
| Level 3 | • Anatomy and Physiology
• Kinesiology II |
| Level 4 | • Practicum in Entrepreneurship (Exercise Science)* |

Aligned Advanced Academic Courses

AP or IB	AP Biology	IB Biology SL IB Biology HL
Continuing Education	Kinesiology II CE	

The Continuing Education courses above are offered in partnership with Del Mar College. Students will earn college credit toward certification. These credits may be matriculated to credits in pursuit of related degrees via an application process with Del Mar College.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities	- Participate in an internship with a physical therapist, occupational therapist, or speech therapist - Shadow an athletic trainer from a local sports team
Expanded Learning Opportunities	- Participate in the Texas State Athletic Trainers Association - Participate in HOSA or SkillsUSA - Volunteer at a hospital or rehabilitation center

Aligned Industry-Based Certifications

- Certified Personal Trainer

* Indicates the course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Medical Assistant

Associate Degrees

- Associate of Applied Science

Bachelor's Degrees

- Nutrition Sciences
- Exercise Physiology and Kinesiology

Master's, Doctoral, and Professional Degrees

- Exercise Science and Kinesiology
- Physical Therapy

Additional Stackable IBCs/License

- Physical Therapy Technician/Aide Certification



Example Aligned Occupations

Exercise Trainers and Group Fitness Instructors

Median Wage: \$44,916
Annual Openings: 5,022
10-Year Growth: 41%

Physical Therapist Assistants

Median Wage: \$74,866
Annual Openings: 1,218
10-Year Growth: 44%

Athletic Trainers

Median Wage: \$54,447
Annual Openings: 295
10-Year Growth: 13%

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

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: Fire Science

The Fire Science program of study focuses on occupational and educational opportunities associated with fire prevention, protection, and firefighting. This program of study includes firefighter safety, building codes, and the necessary physical skills to perform rescues. Students will learn about preparedness, basic fire suppression techniques, basic arson investigation, hazardous material management, and educating the public about fire safety.

This Program of Study is Offered at: Carroll, King, Miller, Moody, Ray, & Veterans Memorial HS



Example Postsecondary Opportunities

Apprenticeships

- Fire Apprentice

Associate Degrees

- Emergency Medical Technology
- Fire Protection Technology

Bachelor's Degrees

- Fire Science
- Emergency Health Services

Additional Stackable IBCs/License

- Hazardous Materials Awareness
- Fire Plan Examiner



Secondary Courses for High School Credit

- Year 1**
- Firefighter I DC#
 - Anatomy and Physiology -OR- Anatomy and Physiology DC#

- SUMMER**
- Firefighter II DC#

- Year 2**
- Career and Technical Education Project-Based Capstone
 - Emergency Medical Technician—Basic * DC#
 - Firefighter Medical Terminology CE# *
 - Disaster Response DC#

Aligned Advanced Academic Courses

Dual Credit

Firefighter I DC
Firefighter II DC
Emergency Medical Technician – Basic DC

The courses listed above are offered as dual credit courses in partnership with Del Mar College.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Shadow a fire chief to learn about fire department operations and skills needed to be a firefighter
- Intern with a fire inspection company to learn about building safety, fire prevention, and fire protection

Expanded Learning Opportunities

- Tour a local fire department
- Participate in SkillsUSA or TSA

Aligned Industry-Based Certifications

- Emergency Medical Technician – Basic
- Basic Structure Fire Protection

* Indicates the course in which industry-based certification is administered



Example Aligned Occupations

Emergency Medical Technicians

Median Wage: \$34,169
Annual Openings: 1,590
10-Year Growth: 19%

Firefighters

Median Wage: \$52,353
Annual Openings: 2,294
10-Year Growth: 14%

Fire Inspectors and Investigators

Median Wage: \$67,014
Annual Openings: 203
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>



Manufacturing Career Cluster

The Manufacturing career cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and process engineering. This career cluster includes occupations ranging from welder and machinist to industrial engineering technician and semi-conductor processing technician.

Statewide Program of Study: *Welding*

The Welding Program of Study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. CTE learners will learn how to modify parts to make or repair machine tools or maintain individual machines and how to use hand-welding or flame-cutting equipment.

Offered at Carroll, Veterans, & Moody (P-TECH) High School



Secondary Courses for High School Credit

Level 1	- Introduction to Welding A - Introduction to Welding B DC#
Level 2	- Welding I A DC# - Welding I B DC# *
Level 3	- Welding II/ Lab A DC # - Welding II/ Lab B DC #*
Level 4	Practicum in Manufacturing

Aligned Advanced Academic Courses

Dual Credit

Introduction to Welding DC
Welding I DC
Welding II DC

The courses listed above are offered as dual credit courses in partnership with Del Mar College.

Work-Based Learning and Expanded Learning Opportunities

Work-Based Learning Activities

- Job shadow a welder
- Intern for a local welding company

Expanded Learning Opportunities

- Tour a welding shop
- Participate in SkillsUSA or TSA
- Participate in a welding project that benefits the community

Aligned Industry-Based Certifications

- AWS D1.1 Structural Steel
- AWS D9.1 Sheet Metal Welding

* Indicates course in which industry-based certification is administered



Example Postsecondary Opportunities

Apprenticeships

- Welding

Associate Degrees

- Welding Technology
- Building/Construction Site Management
- Operations Management and Supervision

Bachelor's Degrees

- Welding Technology
- Construction Management
- Project Management
- Building/Construction Site Management

Master's, Doctoral, and Professional Degrees

- Engineering
- Engineering/Industrial Management
- Manufacturing Engineering
- Construction Engineering



Example Aligned Occupations

Welders, Cutters, Solderers, and Brazers

Median Wage: \$48,177
Annual Openings: 6,792
10-Year Growth: 23%

First-Line Supervisors of Production and Operating Workers

Median Wage: \$62,584
Annual Openings: 5,926
10-Year Growth: 17%

Industrial Production Managers

Median Wage: \$119,691
Annual Openings: 1,296
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>



Manufacturing Career Cluster

The Manufacturing career cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and process engineering. This career cluster includes occupations ranging from welder and machinist to industrial engineering technician and semi-conductor processing technician.

Statewide Program of Study: *Welding*

The Welding Program of Study focuses on the development and use of automatic and computer-controlled machines, tools, and robots that perform work on metal or plastic. CTE learners will learn how to modify parts to make or repair machine tools or maintain individual machines and how to use hand-welding or flame-cutting equipment.

Offered at King, Miller, & Ray



Secondary Courses for High School Credit

- | | |
|----------------|--|
| Level 1 | • Introduction to Welding DC# |
| Level 2 | • Occupational Safety & Environmental Technology I DC#
• Welding II DC# *
• Welding II/ Lab DC # * |
| Level 3 | • Practicum in Manufacturing DC # |

Aligned Advanced Academic Courses

Dual Credit

Introduction to Welding DC
Occupational Safety and Environmental Technology I DC
Welding I DC
Welding II DC
Practicum in Manufacturing DC

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