

Career and Technical Education

Career and Technical Education provides the opportunities for students to take a sequence of courses in high school that prepare them for entry-level work in a career path. All CTE Programs of Study lead to either an industry certification in that area or college credit.

CTE Pathways are shown below. For detailed information on the Programs of Study available in each Pathway, along with career options and course descriptions, please see the table of contents on the next page.



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***Programs of Study in the
AGRICULTURE, FOOD, AND NATURAL RESOURCES Pathway***

Animal Science
Applied Agricultural Engineering
Plant Science



Animal Science Program of Study

Business and Industry Endorsement

The **Animal Science** program of study focuses on the science, research, and business of animals and other living organisms. It teaches students how to apply 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 other outdoor area harboring animal life. Students may also research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **ANIMAL SCIENCE** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Agriculture, Food, and Natural Resources ☐ Small Animal Management ☐ Equine Science	☐ Livestock Production ☐ Advanced Animal Science ☐ Veterinary Medical Applications ☐ Practicum of Agriculture, Food and Natural Resources

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Food Science and Technology
- Veterinary Studies
- Biotechnology Laboratory Technician
- Biology Technician

Bachelor's Degrees

- Animal Sciences
- Agriculture
- Biology
- Zoology/ Animal Biology

Master's, Doctoral, and Professional Degrees

- Genetics
- Veterinary Medicine
- Biological and Physical Sciences
- Biological and Biomedical Sciences

Industry-Based Certifications

- Agricultural Biotechnology
- Certified Veterinary Assistant, Level 1
- Elanco Fundamentals of Animal Science Certification
- Elanco Veterinary Medical Applications Certification
- Equine Management & Evaluation Certification
- Feedyard Technician in Cattle Care and Handling
- Licensed Veterinary Technician
- Production Agriculture - Job Ready
- Small Animal Science and Technology



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
• Participate in Texas FFA	• Compete in an Agri-Science Fair 4H • Volunteer at a local farm or with a veterinarian • Participate in an FFA supervised agriculture experience

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Animal Breeders	\$39,139	28	9%
Animal Scientists	\$57,533	22	12%
Medical Scientists	\$63,898	435	27%
Veterinarians	\$93,496	294	24%
Zoologists and Wildlife Biologists	\$67,309	45	32%

Principles of Agriculture, Food and Natural Resources

Course #: 07081000

Recommended Grade Placement: 9

1 Credit

This course helps students prepare for careers in agriculture, food and natural resources, students must develop academic skills and knowledge in agriculture. This course covers career opportunities, leadership, communications, and the FFA. Technical agricultural topics covered will include: soils, plants, animals, agricultural construction, food science, and welding.

Small Animal Management

Course #: 07221520

Recommended Grade Placement: 9-11

½ Credit

In this course, students acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. Suggested small animals which may be included in the course of study include, but are not limited to, small mammals, amphibians, reptiles, avian, dogs, and cats.

Equine Science

Course #: 07221500

Recommended Grade Placement: 9-11

½ Credit

A course designed to develop knowledge and skills pertaining to the selection, nutrition, reproduction, health, and management of horses.

Livestock Production

Course #: 07221530

Recommended Grade Placement: 10-11

1 Credit

In this course, students will examine animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. Animal species to be addressed in this course may include, but are not limited to, beef cattle, dairy cattle, swine, sheep, goats, and poultry.

Advanced Animal Science

Course #: 07221225

Recommended Grade Placement: 11-12

1 Credit

Approved by the State Board for Education for 4th Science Credit | Prerequisites: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production. Recommended prerequisite: Veterinary Medical Applications.

This course is designed to examine the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to expand one's knowledge of the scientific and technological dimensions of resources necessary for animal production.

Veterinary Medical Applications

Course #: 07221540

Recommended Grade Placement: 11-12

1 Credit

Prerequisites: Small Animal Management and Equine Science or Livestock Production

A course designed to review veterinary practices as they relate to both large and small animal species. Students will have the opportunity to take the Texas Veterinary Medical Association, Certified Veterinary Assistant Level I Exam.

Practicum in Agriculture, Food and Natural Resources

Course #: 07221950

Recommended Grade Placement: 12

2 Credits

Prerequisite: At least one prior Agriculture, Food, and Natural Resources credit

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Applied Agricultural Engineering Program of Study

Business and Industry Endorsement

The **Applied Agricultural Engineering** program of study explores the occupations and educational opportunities associated with applying knowledge of engineering technology and biological science to agricultural problems concerned with power and machinery, electrification, structures, soil and water conservation, and processing agricultural products. This program of study may also include exploration into diagnosing, repairing, or overhauling farm machinery and vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **APPLIED AGRICULTURAL ENGINEERING** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Agriculture, Food, and Natural Resources ☐ Agricultural Mechanics & Metal Technologies	☐ Agricultural Structure Design & Fabrication Lab (preferred course) ☐ Agricultural Equipment Design & Fabrication (preferred course) ☐ Practicum in Agriculture, Food & Natural Resources

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Heavy Equipment Maintenance Technology/ Technician
- Agricultural Mechanization, General
- Small Engine Mechanics and Repair Technology/ Technician
- Welding Technology/ Welder

Bachelor's Degrees

- Agricultural Engineering
- Agricultural Mechanization, General

Master's, Doctoral, and Professional Degrees

- Agricultural Engineering
- Agricultural Mechanization, General

Industry-Based Certifications

- Agriculture Mechanics
- API 1104 Welding Pipelines and Related Facilities AWS Certified Welder
- AWS D1.1 Structural Steel
- AWS D9.1 Sheet Metal Welding
- AWS SENSE Level 1: Entry Welder
- Feedyard Technician in Machinery Operation, Repair and Maintenance
- Industrial Technology Maintenance (ITM) - Maintenance Welding
- Machining Measurement, Material, and Safety Level I
- NCCER Welding Level I
- NCCER Core
- General Welding - Job Ready

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
• Tour a farm products or machinery plant • Participate in Texas FFA	• Earn a welding certification • Intern at a farm products or machinery plant • Participate in an FFA supervised agriculture experience

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Outdoor Power Equipment and Other Small Engine Mechanics	\$32,406	366	16%
Welders	\$41,350	6171	9%
Farm Equipment Mechanics and Service Technicians	\$39,915	304	17%
Mobile Heavy Equipment Mechanics	\$47,299	1627	16%
Agricultural Engineers	\$64,792	9	13%

Principles of Agricultural, Food & Natural Resources

Course #: 07081000

Recommended Grade Placement 9

1 Credit

This course helps students prepare for careers in agriculture, food and natural resources, students must develop academic skills and knowledge in agriculture. This course covers career opportunities, leadership, communications, and the FFA. Technical agricultural topics covered will include: soils, plants, animals, agricultural construction, food science, and welding.

Agricultural Mechanics & Metal Technologies

Course #: 722170

Recommended Grade Placement: 10-11

1 Credit

A course designed to introduce basic theory and specialized skills in agricultural mechanics. Skills to be developed include tool identification and safe use, painting, metal working, and welding processes.

Agricultural Structures Design & Fabrication

Course #: 07221772

Recommended Grade Placement: 11-12

2 Credit

Recommended Prerequisite: Agricultural Mechanics & Metal Technologies

In Agricultural Structures Design & Fabrication, students will explore career opportunities, entry requirements, and industry expectations. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural structures design and fabrication. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

Agricultural Equipment Design & Fabrication

Course #: 07221742

Recommended Grade Placement: 11

2 Credits

Prerequisite: Agriculture Mechanics & Metal Technologies

In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication.

Practicum in Agriculture, Food & Natural Resources

Course #: 07221950

Recommended Grade Placement: 12

2 Credits

Prerequisite: At least one prior Agricultural, Food & Natural Resources credit

The practicum or Coop course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Plant Science Program of Study

Business and Industry Endorsement

The **Plant Science** program of study focuses on the science, research, and business of plants and other living organisms. It teaches students how to apply biology and life science to real-world life processes of plants and vegetation, either in laboratories or in the field.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **PLANT SCIENCE** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Agriculture, Food & Natural Resources ☐ Landscape Design & Management ☐ Turf Grass Management	☐ Floral Design ☐ Horticulture Science ☐ Advanced Floral Design ☐ Practicum in Agriculture, Food & Natural Resources

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Applied Horticulture/ Horticulture Operations, General
- Ornamental Horticulture
- Agricultural Business and Management, General
- Turf and Turfgrass Management

Bachelor's Degrees

- Applied Horticulture/ Horticulture Operations, General
- Agronomy and Crop Science
- Agricultural Business and Management, General
- Turf and Turfgrass Management

Master's, Doctoral, and Professional Degrees

- Applied Horticulture/ Horticulture Operations, General
- Agronomy and Crop Science
- Agricultural Business and Management, General
- Farm/Farm and Ranch Management

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Texas FFA

Work-Based Learning Activities

- Work at a florist or landscaper business
- Participate in an FFA supervised agriculture experience

Industry-Based Certifications

- Agricultural Biotechnology
- BASF Plant Science Certification
- Commercial/Non-Commercial Pesticide Applicator
- Commercial/Noncommercial Pesticide Applicator "Vegetation Management" License
- Horticulture - Landscaping - Job Ready
- Landscape Irrigator
- Principles of Floral Design Certification
- Production Agriculture - Job Ready
- Texas Certified Landscape Associate (TCLA)
- Texas Certified Nursery Professional
- Texas State Florist's Association Knowledge Based Floral Certification
- Texas State Florist's Association Level I Floral Certification
- Texas State Florist's Association Level II Floral Certification



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Soil and Plant Scientists	\$54,662	116	21%
Tree Trimmers and Pruners	\$32,240	589	14%
Pesticide Handlers, Sprayers, and Applicators	\$36,733	196	22%
Landscaping Supervisors	\$44,408	807	19%
Biological Technicians	\$42,931	452	17%

Principles of Agriculture, Food & Natural Resources*Recommended Grade Placement: 9*

Course #: 07081000

1 Credit

This course helps students prepare for careers in agriculture, food and natural resources, students must develop academic skills and knowledge in agriculture. This course covers career opportunities, leadership, communications, and the FFA. Technical agricultural topic covered will include: soils, plants, animals, agricultural construction, food science, and welding.

Landscape Design & Management*Recommended Grade Placement: 10-11*

Course #: 07220620

½ Credit

Landscape Design and Management is designed to develop an understanding of landscape design and management techniques and practices. Students will develop skills related to horticultural systems and workplace knowledge.

Turf Grass Management*Recommended Grade Placement: 10-11*

Course #: 07220625

½ Credit

Turf Grass Management is designed to develop an understanding of turf grass management techniques and practices. Students will develop skills related to horticultural systems and workplace knowledge.

Floral Design*Recommended Grade Placement: 9-12**Approved by State Board of Education for Fine Arts credit*

Course #: 07091610

1 Credit

A course designed to develop skills in the design and arrangement of flowers, foliage, and related plant materials for interior locations. Students will make a variety of floral designs as well as plan a wedding, and learn the basics of running a florist. Students will have the opportunity to take a certification exam through the Texas State Florist Association.

Horticulture Science*Recommended Grade Placement: 10-11*

Course #: 07221620

1 Credit

Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticulture and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

Advanced Floral Design*Recommended Grade Placement: 11-12*

Course #: 07091620

1 Credit

In this course, students build on the knowledge from the Floral Design course and are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning. This course focuses on building skills in advanced floral design and providing students with a thorough understanding of the design elements and planning techniques used to produce unique specialty floral designs that support the goals and objectives of a specific occasion or event. Through the analysis and evaluation of various occasion and event types, students explore the design needs and expectations of clients and propose and evaluate appropriate creations. From conception to evaluation, students are challenged to create and design appropriate specialty floral designs that meet the needs of the client. Furthermore, an emphasis on budgetary adherence and entrepreneurship equips students with many of the necessary skills needed for success in floral enterprises.

Practicum in Agriculture, Food & Natural Resources*Recommended Grade Placement: 12**Prerequisite: At least one prior Agriculture, Food & Natural Resources credit*

Course #: 07221950

2 Credits

The practicum or Coop course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



*Programs of Study in the
ARCHITECTURE AND CONSTRUCTION Pathway*

Architectural Design

Construction Technology (Carpentry)



Architectural Design

Program of Study

Business and Industry Endorsement

This **Architectural Design** program of study explores the occupations and educational opportunities associated with developing, engineering, and designing building structures and facilities. This program of study may also include exploration into collecting and interpreting geographic information, researching and preparing maps, and interior design.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **ARCHITECTURAL DESIGN** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Architectural Design I	☐ Architectural Design II ☐ Civil Engineering & Architecture ☐ Practicum in Architectural Design

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Architecture
- Interior Design
- Civil Engineering, General
- Geographic Information Science and Cartography

Bachelor's Degrees

- Architecture
- Interior Design
- Civil Engineering, General
- Geographic Information Science and Cartography

Master's, Doctoral, and Professional Degrees

- Architecture
- Interior Architecture
- Civil Engineering, General
- Geographic Information Science and Cartography

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Shadow an architect, interior designer or civil engineer
- Participate in SkillsUSA

Work-Based Learning Activities

- Intern at an architectural firm

Industry-Based Certifications

- Autodesk Associate (Certified User) 3ds MAX
- Autodesk Associate (Certified User) AutoCAD
- Autodesk Associate (Certified User) Fusion 360
- Autodesk Associate (Certified User) Revit Architecture
- Autodesk Associate (Certified User) Revit for Electrical
- Autodesk Associate (Certified User) Revit for Structural Design Autodesk Certified Professional Fusion 360
- Autodesk Certified Professional in AutoCAD for Design and Drafting
- Autodesk Certified Professional in Civil 3D for Infrastructure Design
- Autodesk Certified Professional in Revit for Architectural Design
- Autodesk Certified Professional in Revit for Electrical Design
- Autodesk Certified Professional in Revit for Structural Design
- LEED Green Associate

- Certified SOLIDWORKS Associate*
- Mastercam Associate Certification*

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Architects	\$77,043	808	16%
Geographic Information Analysts and Surveyors	\$58,926	162	27%
Architectural/ Civil Drafters	\$50,170	1,068	9%
Construction Managers	\$87,402	2,401	14%

Architectural Design I*Recommended Grade Placement: 9-10**Recommended Prerequisite: Geometry*

Course #: 07224310

1 Credit

In Architectural Design, students gain knowledge and skills specific to those needed to enter a career in architecture and construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, and landscape architecture. Architectural design includes the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for commercial or residential architectural purposes.

Architectural Design II*Recommended Grade Placement: 10-11**Prerequisite: Architectural Design I and Geometry*

Course #: 07224410

2 Credits

In Architectural Design II, students gain advanced knowledge and skills specific to those needed to enter a career in architecture and construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, and landscape architecture. Architectural Design II includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for commercial or residential architectural purposes.

Civil Engineering & Architecture*Recommended Grade Placement: 10-11*

Course #: 07228240

1 Credit

Through both individual and collaborative team activities, projects, and problems, students problem solve as they practice common design and development protocols such as project management and peer review. Students develop skill in engineering calculations, technical representation, documentation of design solutions according to accepted technical standards, and use of current 3D architectural design and modeling software to represent and communicate solutions.

Practicum in Architectural Design*Recommended Grade Placement: 11-12**Prerequisite: Architectural Design II*

Course #: 07225810

2 Credits

This course is an occupationally specific course designed to provide technical instruction in architectural design. Safety and career opportunities are included in addition to work ethics and architectural design study. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency and additional and more advanced knowledge and skills.



Construction Technology (Carpentry)

Program of Study

Business and Industry Endorsement

The **Construction Technology (Carpentry)** program of study explores the occupations and educational opportunities related to constructing, installing or repairing structures or fixtures made of wood such as concrete forms (including frameworks, partitions, joists, studdings, rafters, and stairways). This program of study may also include exploration into installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **CONSTRUCTION TECHNOLOGY (CARPENTRY)**

Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Construction ☐ Construction Technology I	☐ Construction Technology II ☐ Practicum in Construction Technology

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Carpentry/Carpenter
- Industrial Mechanics and Maintenance Technology

Bachelor's Degrees

- Construction Science

Master's, Doctoral, and Professional Degrees

- Construction Management

Industry-Based Certifications

- HBI Pre-Apprenticeship Certificate Training (PACT), Basic Carpentry
- HBI Pre-Apprenticeship Certificate Training (PACT), Core
- HBI Pre-Apprenticeship Certificate Training (PACT), Green Core
- NCCER Carpentry Level I
- NCCER Carpentry Level II
- NCCER Commercial Carpenter
- NCCER Construction Technology Certification Level I
- NCCER Core
- NCCER Painting: Commercial and Residential Level I

- OSHA 30 Hour Construction*
- OSHA 30 Hour General*

*IBC sunsetting 8/31/24



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Shadow a carpenter or millwright
- Participate in SkillsUSA

Work-Based Learning Activities

- Obtain an NCCER certification in Millwright Level 1 or Carpentry Level 1

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Carpenters	\$35,922	5,031	26%
Cost Estimators	\$63,939	2,239	21%

Principles of Construction*Recommended Grade Placement: 9*

Course #: 07090800

1 Credit

Principles of Construction is intended to provide an introduction and lay a solid foundation for those students entering the construction or craft skilled areas. The course provides a strong knowledge of construction safety, construction mathematics, and common hand and power tools. For safety and liability considerations, limiting course enrollment to 15 students is recommended. This course also provides communication and occupation skills to assist the student in obtaining and maintaining employment.

Construction Technology I*Recommended Grade Placement: 10-11*

Course #: 07228620

2 Credits

In Construction Technology, students gain knowledge and skills specific to those needed to enter the work force as carpenters or building maintenance supervisors or prepare for a postsecondary degree in construction management, architecture, or engineering. Students acquire knowledge and skills in safety, tool usage, building materials, codes, and framing.

Construction Technology II*Recommended Grade Placement: 11-12*

Course #: 07228630

2 Credits

Prerequisite: Construction Technology I

In Advanced Construction Technology, students gain advanced knowledge and skills specific to those needed to enter the workforce as carpenters, building maintenance technicians, or supervisors or prepare for a postsecondary degree in construction management, architecture, or engineering. Students build on the knowledge base from Construction Technology and are introduced to exterior and interior finish out skills.

Practicum in Construction Technology*Recommended Grade Placement: 12*

Course #: 07225820

2 Credits

Prerequisite: Construction Technology II

Practicum in Construction Management is an occupationally specific course designed to provide classroom technical instruction or on-the-job training experiences. Safety and career opportunities are included in addition to work ethics and job-related study in the classroom. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



***Programs of Study in the ARTS, AUDIO VIDEO
TECHNOLOGY, AND COMMUNICATIONS Pathway***

Graphic Design & Multimedia Arts

Digital Communications

Graphic Design & Multimedia Arts
Program of Study
Business and Industry Endorsement



The **Graphic Design and Multimedia Arts** program of study explores the occupations and educational opportunities associated with designing and creating graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. This program of study may also include exploration into 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.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **GRAPHIC DESIGN & MULTIMEDIA ARTS** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Arts, Audio/Video Technology & Communications ☐ Graphic Design I ☐ Commercial Photography I ☐ Digital Media	☐ Graphic Design & Illustration II ☐ Commercial Photography II ☐ Practicum in Commercial Photography ☐ Practicum in Graphic Design & Illustration

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

- Animation, Interactive Technology, Video Graphics and Special Effects
- Graphic Design
- Intermedia/Multimedia

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join a website development or coding club
- Participate in SkillsUSA or TSA

Work-Based Learning Activities

- Intern with a multimedia or animation studio
- Obtain a certificate or certification in graphic design

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
- Adobe Certified Professional in Visual Design Using Adobe Photoshop
- Adobe Certified Professional in Visual Effects and Motion Graphics Using Adobe After Effects
- Audio-Visual Communications - Job Ready
- Autodesk Associate (Certified User) 3ds MAX
- Certified Professional Photographer
- Graphic Production Technology - Job Ready

- Adobe Certified Professional Animate*

*IBC Sunsetting 8/31/24

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Graphic Designers	\$44,824	1,433	15%
Multimedia Artists and Animators	\$67,392	186	21%

Principles of Arts, Audio/Video Technology & Communications

Course #: 0708400

Recommended Grade Placement: 8-9

1 Credit

In the Principles of Arts, Audio/ Video Technology & Communication course, students will gain experience in computer & technology applications and become proficient in oral and written communication. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in courses like Records & Film, Printing Technology and much more.

Graphic Design I

Course #: 07224260

Recommended Grade Placement: 9-11

1 Credit

This class will give students an opportunity to express and design creative ideas visually for a growing field. Art concepts and design strategies will be explored using design principles and art elements for creating logos, magazine covers, posters and more. Students will learn to create and design artwork for projects using Adobe Photoshop.

Commercial Photography I

Course #: 07224360

Recommended Grade Placement: 9-11

1 Credit

Students will be expected to develop an understanding of the commercial photography industry with a focus on creating quality photographs. Students will learn commercial composition, print-making and editing photos in Photoshop.

Graphic Design & Illustration II

Course #: 07224460

Recommended Grade Placement: 10-11

2 Credits

Prerequisite: Graphic Design & Illustration I

This advanced class will provide opportunities for students wanting to expand their skills and knowledge of graphic design. Students will use their knowledge to create projects including; food truck branding, logos, posters, magazine designs and will help the other classes with sports posters for both high schools. Students will learn and explore the t-shirt printing process and will assist the Practicum class with the design and print shop working with client projects.

Commercial Photography II*Recommended Grade Placement: 10-11**Prerequisite: Commercial Photography I*

Course #: 07224560

2 Credits

A course designed to provide job-specific training for entry-level employment in the commercial photography career field. Emphasis is on basics of photography, commercial composition, print-making & finishing, and advanced skills in Adobe Photoshop and Adobe Lightroom.

Practicum in Commercial Photography*Recommended Grade Levels: 11-12**Prerequisites: Commercial Photography I and Commercial Photography II*

Course #: 07224850

2 Credits

A course designed to provide job-specific commercial photography work study and/or internships, that affords students supervised practical application of previously acquired skills. Commercial Photography Practicum students will not only demonstrate advanced level photography and editorial skills, but the professionalism of both working with clients, and for clients. Commercial Photography Practicum clients can be in support of CISD, private ventures, public ventures, and the community at large. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Practicum in Graphic Design & Illustration*Recommended Grade Levels: 11-12**Prerequisites: Graphic Design & Illustration II*

Course #: 07224860

2 Credits

In this course, students develop a technical understanding of the industry with a focus on skill proficiency and client relations. Instruction may be delivered through lab-based classroom and in field internship experiences or career preparation opportunities. The instructor works as the manager with the student on a variety of projects taken from business and industry. The course allows the student to gain experience and understanding of the field in a job-like environment. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Digital Communications Program of Study

Business and Industry Endorsement

The **Digital Communications** program of study explores the occupations 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. This program of study may also include exploration into operating machines and equipment to record sound and images, such as microphones, sound speakers, video screens, projectors, video monitors, sound and mixing boards, and related electronic equipment.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **DIGITAL COMMUNICATIONS - CONCENTRATION IN VIDEO** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Principles of Arts, Audio/Video Technology & Communications ☐ Audio Video Production I ☐ Professional Communications ☐ Web Communications (<i>middle school course only</i>)	☐ Audio Video Production II ☐ Practicum in Audio/Video Production

Courses in the **DIGITAL COMMUNICATION - CONCENTRATION IN AUDIO** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Arts, A/V, and Communications ☐ Digital Audio Technology I ☐ Professional Communications ☐ Web Communications (<i>middle school course only</i>)	☐ Digital Audio Technology II ☐ Practicum in Audio/Video Production

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Recording Arts Technology/Technician
- Cinematography and Film/Video Production
- Radio and Television Broadcasting Technology/Technician
- Music Technology

Bachelor's Degrees

- Recording Arts Technology/Technician
- Cinematography and Film/Video Production
- Radio and Television
- Agricultural Communication/Journalism

Master's, Doctoral, and Professional Degrees

- Communications Technology/Technician
- Cinematography and Film/Video Production
- Radio and Television
- Agricultural Communication/Journalism

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Shadow a production team
- Participate in SkillsUSA or TSA

Work-Based Learning Activities

- Intern at a local television station or video production company
- Work with a local company on a project

Industry-Based Certifications

- Adobe Certified Professional in Print and Digital Media Publication Using Adobe InDesign
- Adobe Certified Professional in Print and Digital Media Publication Using Adobe InDesign
- Adobe Certified Professional in Visual Design
- Adobe Certified Professional in Visual Design Using Adobe Photoshop
- Adobe Certified Professional in Digital Video Using Adobe Premiere Pro
- Audio-Visual Communications - Job Ready
- Broadcasting and Journalism



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Sound Engineering Technicians	\$39,562	79	27%
Camera Operators, Television, Video, and Motion Picture	\$50,024	129	9%
Audio and Video Equipment Technicians	\$40,581	757	29%
Film and Video Editors	\$47,382	118	23%

Principles of Arts, Audio/Video Technology, and Communications*Recommended Grade Placement: 8-9*

Course #: 07084000

1 Credit

In the Principles of Arts, Audio/ Video Technology & Communication course, students will gain experience in computer & technology applications and become proficient in oral and written communication. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in courses like Records & Film, Printing Technology and much more.

Professional Communications*Recommended Grade Placement: 9*

Course #: 07224250

½ Credit

Students will participate in a variety of communications settings designed to improve interpersonal skills which can be used in both professional and social settings. They will develop an understanding of delivery methods and practice the proper application of each, which will prepare them for success the remainder of their high school career and in their future endeavors. Group Problem Solving, concepts of teamwork and team building as well as development of leadership skills will be demonstrated and used by the student to help build confidence and improve their critical thinking skills. Students will practice and evaluate communication methods and styles to enhance understanding of the communication process and how to use effective communication to benefit themselves and others.

Audio/Video Production I*Recommended Grade Placement: 9-11*

Course #: 07224380

1 Credit

Students will be expected to develop an understanding of the industry with a focus on pre-production, post-production audio and live audio and video technical skills and concepts. Instruction will include operation of different types of cameras, audio techniques and equipment, electronic editing, graphics for TV, lighting and lighting control consoles, script writing, direction, production, and leadership training.

Audio/Video Production II*Recommended Grade Placement 11-12**Prerequisite: Audio Video Production I*

Course #: 07224480

2 Credits

A course designed to provide an advanced understanding of career opportunities, training requirements and skills needed to pursue a career in Audio and Video Production. Students will continue developing their skills in operating cameras, electronic editing, producing direction and writing for television/film. Working in this industry, students will be expected to have good communication and leadership skills.

Digital Audio Technology I*Recommended Grade Placement: 9-11*

Course #: 07224485

1 Credit

A course designed to provide students interested in audio production careers such as audio for radio and television broadcasting, audio for video and film, audio for animation and game design, music production and live sound instructing in developing skills for career implementation.

Digital Audio Technology II*Recommended Grade Placement: 11-12**Prerequisite: Digital Audio Technology I*

Course #: 07224490

2 Credit

A course designed to provide advanced opportunities in audio production careers such as audio for radio and television broadcasting, audio for video and film, audio for animation and game design, music production and live sound instruction in developing skills for career implementation.

Practicum in Audio/Video Production*Recommended Grade Placement: 11-12**Prerequisite: Audio Video Production II*

Course #: 07224880

2 Credits

This course allows students to develop an increasing understanding of the industry with a focus on applying pre-production, post-production and video products in a professional environment. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



***Programs of Study in the
BUSINESS, MARKETING, AND FINANCE Pathway***

Accounting and Financial Services

Business Management

Entrepreneurship



Accounting & Financial Services Program of Study

Business and Industry Endorsement

The **Accounting & Financial Services** program of study teaches how to examine, analyze, and interpret financial records. Through this program of study, students will learn the skills necessary to perform financial services, prepare financial statements, interpret accounting records, give advice, or audit and evaluate statements prepared by others. This program will also introduce students to mathematical modeling tools.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **ACCOUNTING & FINANCIAL SERVICES** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Principles of Business, Marketing & Finance ☐ Business Information Management I ☐ Accounting I ☐ Financial Math ☐ Money Matters (<i>middle school course only</i>)	☐ Accounting II ☐ Practicum in Business Management

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Real Estate
- Financial, General
- Financial Planning and Services
- Certified Income Specialist

Bachelor's Degrees

- Accounting
- Financial, General
- Financial Planning and Services
- Certified Income Specialist

Master's, Doctoral, and Professional Degrees

- Financial Accounting
- Business Administration
- Financial Planning

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Business Professionals of America, Future Business Leaders of America, or DECA

Work-Based Learning Activities

- Intern with a local accounting firm
- Earn Microsoft Office certifications

Industry-Based Certifications

- Accounting - Basic
 - Accounting Foundations
 - Certified Insurance Service Representative
 - Intuit QuickBooks Certified User
 - MB-920: Microsoft Dynamics 365 Fundamentals Finance and Operations Apps
 - Microsoft Office Specialist: Microsoft Access Expert (Access and Access 2019) Microsoft Office Specialist: Microsoft Excel Expert (Excel and Excel 2019)
 - Volunteer Income Tax Assistance/Tax Counseling Certification: Advanced
 - Volunteer Income Tax Assistance/Tax Counseling Certification: Basic
 - Volunteer Income Tax Assistance/Tax Counseling Certification: Volunteer for Elderly
-
- Microsoft Office Specialist-Excel*

*IBC sunseting 8/31/24

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Accountants and Auditors	\$71,469	14,436	22%
Loan Officers	\$68,598	2,419	19%
Personal Financial Advisors	\$86,965	1,861	52%
Administrative service Managers	\$96,138	2,277	21%
Insurance Underwriters	\$66,206	594	14%

Principles of Business, Marketing & Finance

Recommended Grade Placement: 8

Course #: 07082005

1 Credit

This course is designed to give students hands-on application in the study of Business Management, Finance, Marketing, Entrepreneurship, and Business and Information Management.

Business Information Management I (BIM I)

Recommended Grade Placement: 9-11

Course #: 07222225

1 Credit

BIM I introduces the basic concepts and skills related to business application. Special emphasis is placed on word processing, spreadsheets, database, presentation, and integrating application software. A windows format is utilized, and Microsoft Office is the current program of choice.

Accounting I

Recommended Grade Placement: 10-11

Course #: 07222450

1 Credit

This course introduces general accounting concepts, principles, and procedures; emphasizes the need for financial records; provides the fundamental equation and its application to accounting procedures, including the basic steps of the accounting cycle, special journals and ledgers, work sheets, adjusting and closing entries, special problems in the purchase and sale of merchandise, notes and interest, depreciation, accruals and prepaid items, payroll records, and personal income taxes. Accounting develops the knowledge, skills, and attitudes necessary for individuals to conduct personal business or to further an education in the field of accounting. Students complete practice sets or simulations, use calculators, and process some data electronically.

Accounting II

Recommended Grade Placement: 11-12

Course #: 07222452

1 Credit

Prerequisite: Accounting I

This course provides for review and further development of fundamental accounting principles with extensive use of technology; incorporates a complete accounting cycle in relation to formation and dissolution of partnerships. Examines characteristics of corporate organization and ownership, including investments and distribution of earnings; includes adjustments of bad debts, depreciation, depletion of fixed assets, adjusted and accrued income, various methods of inventory control, preparation of business budgets and notes receivable and payable; provides experience in initiating and maintaining an accounting system and in analyzing, interpreting, and synthesizing managerial problems using accounting information as a tool; and develops skill in applying principles used in accounting systems and methods commonly found in business. Accounting II is designed for students interested in studying accounting at the postsecondary level or entering the workforce.

Financial Mathematics

Course #: 07222460

Recommended Grade Placement: 11-12

1 Credit

Approved for math credit from State Board of Education | Prerequisite: Algebra 1

In this course, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

Practicum in Business Management

Course #: 07227970

Recommended Grade Placement: 11-12

2 Credits

Prerequisite: Two credits in the Accounting and Financial Services or Entrepreneurship program of study

The practicum or Coop course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Business, Marketing & Finance cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Business Management Program of Study

Business and Industry Endorsement

The **Business Management** program of study teaches CTE learners how to plan, direct, and coordinate the administrative services and operations of an organization. Through this program of study, students will learn the skills necessary to formulate policies, manage daily operations, and allocate the use of materials and human resources. This program of study will also introduce students to mathematical modeling tools and organizational evaluation methods.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **BUSINESS MANAGEMENT** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Business, Marketing & Finance ☐ Business Information Management I ☐ Business Information Management II ☐ Business Law	☐ Business Management ☐ Practicum in Business Management

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Business Administration
- Business/Commerce
- Public Administration
- Business Management

Bachelor's Degrees

- Business Administration
- Business/Commerce
- Public Administration
- Management Science

Master's, Doctoral, and Professional Degrees

- Business Administration
- Business Management
- Public Administration
- Management Science

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Business Professional of America, Future Business Leaders of America, or DECA

Work-Based Learning Activities

- Intern with a local business or chamber of commerce

Industry-Based Certifications

- Administrative Assisting
- Certified Associate in Project Management (CAPM)
- Entrepreneurship and Small Business
- MB-920: Microsoft Dynamics 365 Fundamentals Finance and Operations Apps
- Microsoft Office Specialist 2016 Master
- Microsoft Office Specialist: Microsoft Access Expert (Access and Access 2019)
- Microsoft Office Specialist: Microsoft Excel Expert (Excel and Excel 2019)
- Microsoft Office Specialist: Microsoft Word Expert (Word and Word 2019)
- Project Management Institute (PMI) Project Management Ready

- Microsoft Office Specialist-Excel*
- Microsoft Office Specialist-Word*

*IBC sunsetting 8/31/24

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Administrative Service Managers	\$96,138	2,277	21%
Management Analysts	\$87,651	4,706	32%
General and Operations Managers	\$107,640	18,679	20%
Supervisors of Administrative Support Works	\$57,616	14,982	20%

Principles Of Business, Marketing & Finance*Recommended Grade Placement: 8*

Course #: 07082005

1 Credit

This course is designed to give students hands-on application in the study of Business Management, Finance, Marketing, Entrepreneurship, and Business and Information Management.

Business Information Management (BIM)*Recommended Grade Placement: 9-11*

Course #: 07222225

1 Credit

BIM I introduces the basic concepts and skills related to business application. Special emphasis is placed on word processing, spreadsheets, database, presentation, and integrating application software. A windows format is utilized, and Microsoft Office is the current program of choice.

Business Information Management II*Recommended Grade Placement: 11-12*

Course #: 07222325

1 Credit

This course is a continuation of BIM I with emphasis on more in-depth features of Word, Excel, and PowerPoint. Students will also be working in Access and Publisher. This course prepares students to take the Microsoft Office Specialist (MOS) certification exam. This is a global certification that is a standard requirement among employers

Business Law*Recommended Grade Placement: 10-11*

Course #: 07222425

1 Credit

Prerequisite: Principles of Business, Marketing, and Finance

Business Law is designed to teach students the rules, principles, and language of law. Students will relate law to their current lives as well as explore the implications in their futures. The course includes a focus on criminal vs. civil law, contract law, tort law, and consumer protection law.

Business Management*Recommended Grade Placement: 10-11*

Course #: 07222003

1 Credit

Recommended Prerequisite: Principles of Business, Marketing, and Finance

Business Management is designed to familiarize students with the concepts related to business management as well as the functions of management, including planning, organizing, staffing, leading, and controlling. Students will also demonstrate interpersonal and project-management skills.

Practicum in Business Management

Course #: 07227970

Recommended Grade Placement: 11-12

2 Credits

Recommended Prerequisite: Two credits in the Accounting and Financial Services or Entrepreneurship program of study

The practicum or Coop course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Business, Marketing & Finance cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Business I Certification**College Credit Opportunity - Tarrant County College**

Crowley ISD offers dual credit courses in Business to achieve a certification in Business. These courses are offered through Tarrant County College and tuition is waived. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.



Entrepreneurship Program of Study

Business and Industry Endorsement

This **Entrepreneurship** program of study teaches how to plan, direct, and coordinate the management and operations of public or private sector organizations. Through this program of study, students will learn the skills necessary to formulate policies, manage daily operations, analyze management structures, and plan for the use of materials and human services.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **ENTREPRENEURSHIP** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Business, Marketing & Finance ☐ Business Information Management I ☐ Entrepreneurship I	☐ Entrepreneurship II ☐ Practicum in Business Management

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Business Administration and Management
- Business/Commerce
- Public Administration
- Business Management

Bachelor's Degrees

- Business Administration and Management
- Business/Commerce
- Public Administration
- Management Science

Master's, Doctoral, and Professional Degrees

- Business Administration and Management
- Business/Commerce
- Public Administration
- Management Science

Work-Based Learning and Expanded-Learning Opportunities

Exploration Activities

- Participate in Business Professionals of America, Future Leaders of America, or DECA

Work-Based Learning Activities

- Intern with a local management consulting firm

Industry-Based Certifications

- Entrepreneurship and Small Business
- Facebook Digital Marketing Associate Certification



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
General and Operations Managers	\$107,640	18,679	20%
Management Analysts	\$87,651	4,706	32%
Managers, All Others	\$113,110	1,794	26%

Principles Of Business, Marketing & Finance*Recommended Grade Placement: 8*

Course #: 07082005

1 Credit

This course is designed to give students hands-on application in the study of Business Management, Finance, Marketing, Entrepreneurship, and Business and Information Management.

Business Information Management I (BIM I)*Recommended Grade Placement: 9-11*

Course #: 07222225

1 Credit

BIM I introduces the basic concepts and skills related to business application. Special emphasis is placed on word processing, spreadsheets, database, presentation, and integrating application software. A windows format is utilized, and Microsoft Office is the current program of choice

Entrepreneurship I*Recommended Grade Placement: 10-11*

Course #: 07227200

1 Credit

Students will gain the knowledge and skills to become an entrepreneur. Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan and securing the finances to own and operate a business.

Entrepreneurship II*Recommended Grade Placement: 11-12*

Course #: 07227205

1 Credit

Prerequisite: Entrepreneurship I

Students will work in close cooperation with local industry leaders, community members, and educators to develop ideas and objectives, complete a business model canvas, pitch to potential investors, register with governmental agencies, and develop brand identity. The goal and outcome of the course is to have a business launched by the end of the course or have the tools necessary to launch and operate a business.

Practicum in Business Management*Recommended Grade Placement: 11-12*

Course #: 07227970

2 Credits

Prerequisite: Two credits in the Accounting and Financial Services or Entrepreneurship program of study

The practicum or Coop course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Business, Marketing & Finance cluster. Students are required to serve in paid or unpaid internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills. *A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.*



***Programs of Study in the
EDUCATION AND TRAINING Pathway***

**Early Learning
Teaching and Training**



Early Learning Program of Study

Public Services Endorsement

The **Early Learning** program of study focuses on early childhood education, which consists of instructing and supporting preschool and early elementary school students in activities that promote social, physical and intellectual growth as well as basic elements of science, art, music, and literature. This program introduces tasks necessary for planning, directing, and coordinating activities for young children.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **EARLY LEARNING** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Human Services ☐ Child Development ☐ Principles of Education & Training	☐ Child Guidance ☐ Practicum in Early Learning

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Early Childhood Education and Teaching
- Multicultural Early Childhood Development
- Kindergarten/Preschool Education and Training
- Psychology/Sociology

Bachelor's Degrees

- Early Childhood Education and Teaching
- Multicultural Early Childhood Development
- Early Childhood
- Psychology/Sociology

Master's, Doctoral, and Professional Degrees

- Early Childhood Education and Teaching
- Multicultural Early Childhood Development
- Educational, Instructional, and Curriculum Supervision
- Educational Leadership and Administration

Industry-Based Certifications

- Child Development Associate (CDA)
- Early Childhood Education and Care – Advanced
- Early Childhood Education and Care – Basic
- Educational Aide 1
- Pre-Professional Certification in Early Childhood Education



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in the Texas Association of Future Educators or Family, Career, and Community Leaders of America

Work-Based Learning Activities

- Teach a community education class
- Volunteer as a teaching assistant

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Kindergarten Teachers, except Special Education	\$53,310	1,848	17%
Preschool Teachers	\$27,851	4,330	17%
Elementary School Teachers	\$54,140	13,121	16%
Education Administrators, Elementary and Secondary School	\$79,830	2407	16%

Principles of Human Services

Course #: 07083000

Recommended Grade Placement: 8

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Education & Training and Human Services. Topics include: Child Development, Human Growth, Counseling and Mental Health, and Family and Community Services.

Child Development

Course #: 07225210

Recommended Grade Placement: 9-10

1 Credit

This course addresses knowledge and skills related to child growth and development from prenatal through school-age children, equipping students with child development skills. Students use these skills to promote the well-being and healthy development of children and investigate careers related to the care and education of children. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

Principles of Education & Training

Course #: 07095010

Recommended Grade Placement: 9-10

1 Credit

This course is designed to introduce students to the various careers available in education.

Child Guidance

Course #: 07223320

Recommended Grade Placement: 11-12

2 Credits

Child Guidance is a two-credit course where students will apply their knowledge of Child Development principles to a hands-on experience at a child development center while improving their employability skills. They will practice developing and implementing activities for preschool age children at a childcare facility and earn their Child Development Associate credential.

Practicum in Early Learning

Course #: 07125920

Recommended Grade Placement: 12

2 Credits

Practicum in Early Learning is a field-based internship that provides students background knowledge of early childhood development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher facilitator and an exemplary industry professional. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of early learning teachers, trainers, paraprofessionals, or other educational personnel.



Teaching and Training Program of Study

Public Service Endorsement

The **Teaching and Training** program of study prepares students for careers related to teaching, instruction, and creation of instructional and enrichment materials. The program of study introduces a wide variety of student groups and their corresponding needs. It familiarizes them with the processes for developing curriculum, coordinating educational content, and coaching groups and individuals.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **TEACHING AND TRAINING** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Human Services ☐ Human Growth & Development ☐ Principles of Education & Training	☐ Instructional Practices ☐ Practicum in Education & Training

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Teacher Education
- Education, General (or specific subject area)
- Special Education
- Health and Physical Education/Fitness

Bachelor's Degrees

- Bilingual and Multilingual Education
- Education, General (or specific subject area)
- Special Education
- Health and Physical Education/Fitness

Master's, Doctoral, and Professional Degrees

- Instruction and Learning
- Educational Leadership and Administration, General
- Special Education
- Social and Philosophical Foundations of Education

Industry-Based Certifications

- Educational Aide I



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in the Texas Association of Future Educators or Family, Career, and Community Leaders of America

Work-Based Learning Activities

- Teach a community education class
- Intern as a teaching assistant or tutor
- Serve as a camp counselor

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Adult Basic and Secondary Education and Literacy Teachers and Instructors	\$48,069	862	17%
Middle School Teachers, Except Special and Career/Technical Education	\$54,510	6,407	15%
Career and Technical Education Teachers, Secondary School	\$56,360	719	9%
Special Education Teachers, Secondary School	\$56,720	980	18%

Principles of Human Services*Recommended Grade Placement: 8*

Course #: 07083000

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Education & Training and Human Services. Topics include: Child Development, Human Growth, Counseling and Mental Health, and Family and Community Services.

Human Growth & Development*Recommended Grade Placement: 10*

Course #: 07105110

1 Credit

Human Growth and Development is an examination of human development across the lifespan with emphasis upon research, theoretical perspectives, and common physical, cognitive, emotional, and social developmental milestones.

Principles of Education & Training*Recommended Grade Placement: 9-10*

Course #: 07095010

1 Credit

This course is designed to introduce students to the various careers available in education.

Instructional Practices*Recommended Grade Placement: 11-12*

Course #: 07225510

2 Credits

Instructional Practices in Education and Training is a field-based internship that provides students with background knowledge of child and adolescent development as well as principles of effective teaching and training practices. Students work under the joint direction and supervision of both a teacher with knowledge of early childhood education and exemplary educators or trainers in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, develop materials for educational environments, assist with record keeping, and complete other responsibilities of teachers, trainers, paraprofessionals, or other educational personnel. Students will intern in a local CISD elementary, intermediate, or middle school.

Practicum In Education & Training*Recommended Grade Placement: 12**Prerequisite: Instructional Practice in Education & Training*

Course #: 07225910

2 Credits

Practicum in Education and Training is a field-based internship that provides students background knowledge of child and adolescent development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher with knowledge of early childhood education and exemplary educators in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of classroom teachers, trainers, paraprofessionals, or other educational personnel. Students will intern in a local CISD elementary, intermediate, or middle school. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



***Programs of Study in the
HEALTH SCIENCE
Pathway***

**Healthcare Therapeutic - Medical Assistant
Healthcare Therapeutic - Pharmacy Technician**



Healthcare Therapeutic Program of Study

Public Services Endorsement

The **Healthcare Therapeutic** program of study introduces students to occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study holds students to professional high standards needed in various healthcare. Students are required to purchase uniforms and some classes have fees associated with them. Please see the board approved the listing of fees for details. Students are encouraged to participate in Health Occupations Students of American (HOSA).

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **HEALTHCARE THERAPEUTIC** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses

- ☐ Medical Terminology *(must be paired with Health Science Theory)*
- ☐ Pharmacy I

Advanced Courses

- ☐ Health Science Theory *(must be paired with Medical Terminology)*
- ☐ Anatomy & Physiology
- ☐ Pharmacy II
- ☐ Mathematics for Medical Professionals
- ☐ Medical Assistant
- ☐ Pathophysiology
- ☐ Practicum in Health Science

Course Sequences for HEALTHCARE THERAPEUTICS Concentrations

Medical Assistant	Health Science Theory & Medical Terminology	Anatomy and Physiology	Medical Assistant	Practicum in Health Science and/or Pathophysiology
Pharmacy Technician	Introduction to Pharmacy Science	Pharmacy I	Pharmacy II and Mathematics for Medical Professionals	Practicum in Health Science - Pharmacy
Emergency Services/EMT	Medical Terminology & Health Science Theory or Principles of Law	Counseling and Mental Health	Anatomy & Physiology, Disaster Response, DC ENGL 1301, & DC MUSI 1306	EMT Basic (HS Course), DC COSC 1301, DC GOVT 2305/2306, EMSP 1501, & EMSP 1160

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Dental Hygienist
- Medical/Clinical Assistant

Bachelor's Degrees

- Dental Hygienist

Master's, Doctoral, and Professional Degrees

- Dentist
- Physician Assistant
- Family and General Practitioners
- Pharmacist

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA or Health Occupation Students of America

Work-Based Learning Activities

- Volunteer at a community wellness center, hospital, assisted living, or nursing home

Industry-Based Certifications

- Certified Clinical Medical Assistant
- Certified Dental Assistant
- Certified EKG Technician
- Emergency Medical Technician - Basic
- Certified Nurse Aide (CNA)
- Certified Occupational Therapy Assistant
- Certified Patient Care Technician (CPCT)
- ECG Technician
- Medical Assistant
- Medical Laboratory Assistant
- Nationally Registered Certified EKG Technician
- Patient Care Technician
- Pharmacy Technician
- Phlebotomy Technician
- Registered Dental Assistant X-Ray Certification
- Certified Ophthalmic Technician*
- Certified Surgical Technologist*
- Licensed Dental Hygienist*
- Orthopedic Technologist*

*IBC sunsetting 8/31/24



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Medical Assistants	\$29,598	8,862	30%
Surgical Technologists	\$45,032	1,150	20%
Dental Hygienists	\$73,507	1,353	38%
Physicians and Surgeons	\$213,071	1,151	30%

Pharmacy Technician Certificate

College Credit Opportunity - Lamar State College in Port Arthur

Crowley ISD offers dual credit courses in Pharmacy to achieve a Pharmacy Technician Certificate. These courses are offered through Lamar State College in Port Arthur and tuition is waived. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.

Emergency Medical Technician Certification

College Credit Opportunity – Tarrant County College

Crowley ISD offers dual credit courses in Emergency Medical Technician to achieve an EMT basic credential. These courses are offered through Tarrant County College and tuition is waived. Students must be enrolled in Tarrant County College. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.

Medical Terminology

Recommended Grade Placement: 9-11

Must be paired with Health Science Theory

Course #: 07226001

1 Credit

The Medical Terminology course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, singular and plural forms, and medical abbreviations. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology. Students are encouraged to participate in Health Occupations Students of American (HOSA).

Introduction to Pharmacy Science

Recommended Grade Placement: 9

Course #: 07226451

1 Credit

The Introduction to Pharmacy Science course is designed to provide an overview of the history of the pharmacy profession, legal and ethical aspects of pharmacy, skills necessary to work in the field of pharmacy (including professionalism, certifications/registration, communication and medical terminology, and rules and regulations pertaining to the field), medical math, anatomy and physiology/pathophysiology, pharmacology, and wellness as

they pertain to pharmacy sciences. It is the first course in a pathway leading to certification as a pharmacy technician.

Pharmacy I

Recommended Grade Placement: 10-11

Course #: 07226455

1 Credit

The Pharmacy I course is designed to build upon the knowledge and skills taught in the Introduction to Pharmacy Science course. Students build on their existing foundation of knowledge and skills needed to pursue a career in the pharmaceutical field such as a pharmacy technician or pharmacist). Instruction includes pharmacokinetics, pharmacy law, medication safety, the dispensing process, and inventory. This course is aligned with the standards of the national certification exams that students might take, such as Pharmacy Technician Certification Examination (PTCE) and/or Exam for the Certification of Pharmacy Technicians (ExCPT). Recommended participants are students who wish to become certified pharmacy technicians.

Pharmacy II*Recommended Grade Placement: 11*

Course #: 07226465

2 Credits

The Pharmacy II course provides students with the advanced knowledge and skills to explore various careers in the pharmacy field, including pharmacology, pharmacy law, medication errors, inventory pharmacy calculations, compounding, and workflow expectations in a pharmacy setting.

Health Science Theory*Recommended Grade Placement: 9-10*

Course #: 07226100

1 Credit

Must be paired w/Medical Terminology | Prerequisite: Biology

A course designed to develop healthcare-specific knowledge and skills in professionalism, effective communications, ethical and legal responsibilities, client care, safety, first aid, and CPR. This class will introduce various healthcare jobs including phlebotomy technician, EKG technician, medical assistant, patient care technician and pharmacy technician. This course prepares the student for the transition to clinical or work-based learning experiences in healthcare with various hands-on skills and activities. This class is a prerequisite to take practicum in health science, where certifications including Certified Patient Care Technician, Certified Pharmacy Technician, and Certified Medical Assistant are earned. Students are encouraged to participate in Health Occupations Students of American (HOSA).

Mathematics for Medical Professionals*Recommended Grade Placement: 11-12*

Course #: 07226470

1 Credit

Prerequisites: Geometry and Algebra II

The Mathematics for Medical Professionals course is designed to embed statistics, probability, and finance, while focusing on fluency and solid understanding in medical mathematics. Students will extend and apply mathematical skills necessary for health science professions. Course content consists primarily of high school level mathematics concepts and their applications to health science professions.

Anatomy & Physiology*Recommended Grade Placement: 10-12*

Course #: 03120900

1 Credit

Counts as a Science credit | Prerequisite: Biology and a second science credit

This course will take an integrated approach to functional anatomy with emphasis on basic principles and physiological activities of different systems (skeletal, muscular, digestive, respiratory, cardiovascular, urinary, endocrine, reproductive) in mammals. Laboratory experiences will include extensive study and dissection of a mammal. The text, content, and labs are college-level and are designed for students planning to major in science in college. The goal of this course is to better prepare students for undergraduate work in life science majors such as pre-medical, pre-dental, pre-pharmacist, nursing, athletic trainers, and other healthcare professionals that require anatomy and physiology in college. Students are encouraged to participate in Health Occupations Students of American (HOSA).

Medical Assistant

Course #: 07226700

Recommended Grade Placement: 11-12

1 Credit

This course provides students with the knowledge and skills to pursue a career as a medical assistant and to improve college and career readiness. Students will learn communication skills, clinical ethics knowledge, safety awareness, and information related to medical assisting career opportunities.

Pathophysiology

Course #: 07226400

Recommended Grade Placement: 11-12

1 Credit

Approved by the State Board of Education for 4th science credit | Prerequisite: Biology and Chemistry

In this course, students conduct laboratory investigations and fieldwork, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving. Students study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of diseases. Students will differentiate between normal and abnormal physiology. Students are encouraged to participate in Health Occupations Students of American (HOSA).

Practicum In Health Science

Course #: 07226500

Recommended Grade Placement: 11-12

2 Credits

Prerequisite: Health Science Theory and Biology

The practicum course is a paid or unpaid capstone experience for students participating in the Health Science Program of Study. Students sit to pass national exams and become a Certified Patient Care Technician, Certified Pharmacy Technician, and Certified Medical Assistant. This is an internship program for specific health professions. Students participate in a clinical internship at local healthcare facilities. Students are encouraged to participate in Health Occupations Students of American (HOSA). Students should be prepared to submit to an FBI criminal background check, random drug screening, TB testing, state fingerprint licensure, state or government-issued ID, and to present a proof of current immunizations and valid Social Security Card. Other stipulations may also be in place depending on internship requirements including but not limited to student dress and appearance. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

For information on the Emergency Services (EMT) program of Study, see the LAW AND PUBLIC SERVICE Pathway.



***Programs of Study in the
HOSPITALITY AND TOURISM
Pathway***

Culinary Arts



Culinary Arts Program of Study

Business and Industry Endorsement

The **Culinary Arts** program of study introduces students to occupations and educational opportunities related to the planning, directing, or coordinating activities of a food and beverage organization or department. This program of study also explores opportunities involved in directing and participating in the preparation and cooking of food.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **CULINARY ARTS** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses

- ☐ Principles of Hospitality & Tourism
- ☐ Introduction to Culinary Arts
- ☐ Culinary Arts

Advanced Courses

- ☐ Advanced Culinary Arts
- ☐ Practicum in Culinary Arts
- ☐ Food Science

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Hotel and Restaurant Management
- Restaurant Culinary and Catering Management
- Hospitality Administration/ Management, General
- Culinary Arts/ Chef Training

Bachelor's Degrees

- Hotel and Restaurant Management
- Food Service Systems Administration/ Management
- Hospitality Administration/ Management, General
- Culinary Science and Food Service Management

Master's, Doctoral, and Professional Degrees

- Hotel and Restaurant Management
- Food Service Systems Administration/ Management
- Hospitality Administration/ Management, General
- Business Administration Management, General

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Family, Career, and Community Leaders of America, SkillsUSA, American Culinary Federation, or the Texas Restaurant Association

Work-Based Learning Activities

- Plan a catering event or work for a catering company
- Participate in a cooking course
- Work in a restaurant

Industry-Based Certifications

- Certified Fundamentals Cook
- Certified Fundamentals Pastry Cook
- Certified Hospitality & Tourism Management Professional
- Commercial Foods
- Culinary Meat Selection & Cookery Certification
- Food Protection Manager Certification
- Food Safety & Science Certification
- ManageFirst Professional
- Pre-Professional Certification in Culinary Arts
- Pre-Professional Certification in Food Science Fundamentals
- ServSafe Manager



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Food and Beverage Managers	\$55,619	1,561	28%
Chef and Head Cooks	\$43,285	1,366	25%
Food Science Technicians	\$34,382	236	11%

Culinary Arts Foundation Certificate

College Credit Opportunity - Lamar State College in Port Arthur

Crowley ISD offers dual credit courses in Culinary to achieve a Culinary Arts Foundation Certificate. These courses are offered through Lamar State College in Port Arthur and tuition is waived. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.

Principles of Hospitality & Tourism

Course #: 07085000

Recommended Grade Placement: 8

1 Credit

This course is designed to give students hands-on application in the Program of Study of Culinary Arts and Hospitality & Tourism.

Introduction to Culinary Arts

Course #: 07225275

Recommended Grade Placement: 9-10

1 Credit

Introduction to Culinary Arts will emphasize the principles of planning, organizing, staffing, directing, and controlling the management of a variety of food service operations. The course will provide insight into the operation of a well-run restaurant. Introduction to Culinary Arts will provide insight into production skills, various levels of industry management, and hospitality skills. This is an entry level course for students interested in pursuing a career in the food service industry. This course will be offered with a commercial kitchen used as a laboratory. Students are encouraged to participate in extended learning experiences which may include career and technical student organizations, and other leadership or extracurricular organizations.

Culinary Arts

Course #: 07225280

Recommended Grade Placement: 10-11

2 Credits

Culinary Arts begins with the fundamentals and principles of the art of cooking and the science of baking and includes management and production skills and techniques. Students can pursue a national sanitation certification or other appropriate industry certifications. This course will be offered with a commercial kitchen used as a laboratory. Students are encouraged to participate in extended learning experiences which may include practicum hours, career and technical student organizations, and other leadership or extracurricular organizations.

Advanced Culinary Arts***Recommended Grade Placement: 11-12******Prerequisite: Culinary Arts*****Course #: 07225895****2 Credits**

This course is a unique advanced course that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Advanced Culinary Arts integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace. Students are taught employability skills, which include job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development.

Practicum in Culinary Arts***Recommended Grade Placement: 12******Prerequisite: Advanced Culinary Arts*****Course #: 07225880****2 Credits**

This course is a unique practicum that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Practicum in Culinary Arts will extend content and enhance skills introduced in Culinary Arts by in-depth instruction of industry-driven standards in order to prepare students for success in higher education, certification, and/or immediate employment. Students receive hands-on practical experience in all aspects of food preparation and production. Coursework begins with food preparation techniques and progresses. Students are encouraged to participate in extended learning experiences which may include practicum hours, career and technical student organizations, and other leadership or extracurricular organizations. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Food Science***Recommended Grade Placement: 11-12******Approved by the State Board of Education for science credit | Prerequisite: Three units of science, including chemistry and biology*****Course #: 07225890****1 Credit**

This technical laboratory course provides foundational training in the area of food science and technology. Content addresses food science principles; nutrition and wellness; food technology; world food supply; managing multiple family, community, and career roles; and career options in nutrition, food science, and food technology. Instructional topics include diet-related disorders, diets appropriate to the life cycle and other factors, therapeutic diets, chemical and physical changes that affect food product quality, technologies used in food processing and product development, food safety and sanitation standards, market research, legal issues, and food policies. Laboratory activities utilizing research methods related to current issues in food science, technology, and nutrition are included.



***Programs of Study in the
HUMAN SERVICES
Pathway***

Cosmetology

Barbering

Family and Community Services



Cosmetology & Barbering Program of Study

Public Service Endorsement

The **Cosmetology** and Personal Care Services program of study introduces CTE learners to knowledge and skills related to providing beauty and personal care services. CTE concentrators may learn about or practice managing personal care facilities and coordinating or supervising personal service workers.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **COSMETOLOGY** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Microbiology & Safety for Cosmetology Careers ☐ Principles of Cosmetology Design & Color Theory	☐ Cosmetology I ☐ Cosmetology II

This program meets the Texas Department of Licensing and Regulation requirements for licensure upon successful completion of the course sequence and passing the state examinations at the end of Cosmetology II. Students will participate in Skills USA and also be involved in client services.

NOTE: Associated fees for the Cosmetology program are \$300.00. The fees by grade level are freshman \$50.00 this includes TDLR permit and manikin (Emily), sophomore \$50.00 Manikin (Debra), junior \$50.00 Manikin (Debra) and senior \$150.00 State board kit and male manikin. Also, all students are required to participate in Skills USA. The fee for participation is \$31.00.

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Certificate/License

- Certified Aesthetic Laser Operator
- Cosmetologist
- Certified Spa Supervisor
- Nail Technician/Specialist and Manicurist

Associates Degrees

- Cosmetology/Cosmetologist, General
- Aesthetician/Esthetician and Skin Care Specialist
- Salon/Beauty Salon Management/Manager
- Cosmetology, Barber/Styling, and Nail Instructor

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in TIVA or SkillsUSA

Work-Based Learning Activities

- Job shadow a cosmetologist
- Work part-time at a salon, spa, or barbershop

Industry-Based Certifications

- Cosmetology Operator License
- Cosmetology Esthetician Specialty License
- Cosmetology Manicurist Specialty License
- Barber Operating License



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
First-Line Supervisors of Personal Service Workers	\$36,941	1,634	24%
Barbers	\$28,267	348	14%
Hairdressers, Hairstylists, and Cosmetologists	\$21,507	3,489	22%
Manicurists and Pedicurists	\$21,715	418	45%
Shampooers	\$18,720	139	24%
Skincare Specialists	\$26,437	637	22%

Microbiology & Safety for Cosmetology Careers

Course #: 07223105

Recommended Grade Placement: 9

1 Credit

Students will receive instruction in the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, drug resistant organisms, and emerging diseases. Students may become certified in the Occupational Safety and Health Administration (OSHA) safety training course. This course includes an in depth analytical opportunity for students to problem solve health and safety in cosmetology.

Principles of Cosmetology Design & Color Theory

Course #: 07223205

Recommended Grade Placement: 10

1 Credit

In Principles of Cosmetology Design and Color Theory, students coordinate integration of academic, career, and technical knowledge and skills in this laboratory instructional sequence course designed to provide job-specific training for employment in cosmetology careers. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the TDLR requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.

Cosmetology I

Course #: 07223200

Recommended Grade Placement: 11

2 Credits

Students coordinate the integration of academic, career, technical knowledge and provide salon services. This instructional sequenced course is designed to provide job-specific training for employment in cosmetology careers. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care. This program meets the Texas Department of Licensing and Regulation requirements for licensure upon successful completion of the course sequence and passing the state examinations at the end of Cosmetology II. Analysis of career opportunities, requirements, expectations, and development of workplace skills are included.

Cosmetology II

Course #: 07223300

*Recommended Grade Placement: 12*3 Credits *Prerequisite:**Cosmetology I*

Students review academic and practical knowledge related to cosmetology. This course is designed to provide advanced skill set training as well as employment preparation for a cosmetology career. Instruction includes advanced training in sterilization and sanitation processes, hair care, nail care, and skin care. This program meets the Texas Department of Licensing and Regulation requirements for licensure upon successful completion of the course sequence and passing the state examinations. Students apply, combine, and justify knowledge and skills to a variety of settings and problems. Because of scheduling constraints for students, those interested in completing this program are encouraged to earn at least one required graduation credits outside of the regular school day/year.

In order to complete the licensure exam for Cosmetology, students are required to take all four courses in the Cosmetology program of study.

Course Sequence for BARBERING

Barbering		Microbiology and Safety for Cosmetology Careers	Barbering I	Barbering II
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Barbering I

Course #: 07110100

Recommended Grade Placement: 11

3 Credits

In Barbering I, students coordinate integration of academic, career, and technical knowledge and skills in a laboratory instructional sequence of courses designed to provide job-specific training for employment in barbering careers. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the Texas Department of Licensing and Regulation (TDLR) requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.

Barbering II

Course #: 07120100

Recommended Grade Placement: 12

3 Credits

In Barbering II, instruction includes advanced training in professional standards/employability skills; Texas Department of Licensing and Regulation (TDLR) rules and regulations; use of tools, equipment, technologies and materials; and practical skills. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.



Family and Community Service Program of Study

Business and Industry Endorsement

The **Family and Community Services** program of study introduces students to knowledge and skills related to social services, including child and human development and consumer sciences. Students may learn about or practice managing social and community services or teaching family and consumer sciences. Students may follow career paths in social work or therapy for children, families, or school communities.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **FAMILY AND COMMUNITY SERVICES** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Principles of Human Services ☐ Child Development ☐ Professional Communications ☐ Interpersonal Studies (<i>middle school course only</i>) ☐ Dollars and Sense (<i>middle school course only</i>) ☐ Lifetime Nutrition and Wellness (<i>middle school course only</i>)	☐ Counseling and Mental Health ☐ Family & Community Services ☐ Practicum in Human Services

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Human Development and Family Studies
- Human Services/Sciences, General
- Family and Consumer Sciences
- Community Health Services

Bachelor's Degrees

- Human Development and Family Studies
- Human Services/Sciences, General
- Family and Consumer Sciences
- Child and Family Services

Master's, Doctoral, and Professional Degrees

- Human Development and Family Studies
- Marriage and Family Therapy/Counseling
- Human Services/Sciences
- Family Studies

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in American Association of Family and Consumer Sciences or Family, Career and Community Leaders of America

Work-Based Learning Activities

- Volunteer at a community center
- Intern for a community non-profit organization

Industry-Based Certifications

- Community Health Workers
- Child Development Associate (CDA)



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Child, Family, and School Social Workers	\$41,350	2,221	17%
Social and Community Services Managers	\$65,146	608	33%
Marriage and Family Therapists	\$42,266	217	35%
Social and Human Service Assistants	\$32,448	2,822	25%

Principles of Human Services*Recommended Grade Placement: 8*

Course #: 07083000

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Education & Training and Human Services. Topics include: Child Development, Human Growth, Counseling and Mental Health, and Family and Community Services.

Professional Communications*Recommended Grade Placement: 9*

Course #: 07224250

½ Credit

Students will participate in a variety of communications settings designed to improve interpersonal skills which can be used in both professional and social settings. They will develop an understanding of delivery methods and practice the proper application of each, which will prepare them for success the remainder of their high school career and in their future endeavors. Group Problem Solving, concepts of teamwork and team building as well as development of leadership skills will be demonstrated and used by the student to help build confidence and improve their critical thinking skills. Students will practice and evaluate communication methods and styles to enhance understanding of the communication process and how to use effective communication to benefit themselves and others.

Child Development*Recommended Grade Placement: 9-10*

Course #: 07225210

1 Credit

This course addresses knowledge and skills related to child growth and development from prenatal through school-age children, equipping students with child development skills. Students use these skills to promote the well-being and healthy development of children and investigate careers related to the care and education of children. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

Counseling and Mental Health*Recommended Grade Placement: 10-11*

Course #: 07226200

1 Credit

This course offers knowledge and skills necessary to pursue a counseling and mental health career through simulated environments. Students are expected to apply knowledge of ethical and legal responsibilities, limitations, and the implications of their actions. Professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.

Family & Community Services*Recommended Grade Placement: 11-12*

Course #: 07223330

1 Credit

This laboratory-based course is designed to involve students in realistic and meaningful community-based activities through direct service experiences. Students are provided opportunities to interact and provide services to individuals, families, and the community through community or volunteer services. Emphasis is placed on developing and enhancing organizational and leadership skills and characteristics. This course is a perfect opportunity to gather experience in volunteer and service projects for college and career applications. Students will be placed in an internship on campus during this course.

Practicum In Human Services*Recommended Grade Placement: 11-12**Prerequisite: Two courses in the Family and Community Service program of study*

Course #: 07223920

2 Credits

Practicum in Human Services provides occupationally specific training and focuses on the development of consumer services, early childhood development and services, counseling and mental health services, and family and community services careers. Students are required to serve in paid or unpaid internship opportunities. Students must provide transportation to internship opportunities. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



***Programs of Study in the
INFORMATION TECHNOLOGY
Pathway***

**Information Technology Support and Services
Networking Systems**



Information Technology Support and Services Program of Study

Business and Industry Endorsement

The **Information Technology Support and Services** program of study explores the occupations and educational opportunities associated with administering, testing, and implementing databases and applying knowledge of database management systems. This program of study may also include analyzing user requirements and problems to automate or improve existing systems and review computer system capabilities. This program of study may also include exploration into the research, design, or testing of computer or computer-related equipment for commercial, industrial, military, or scientific use.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **INFORMATION TECHNOLOGY SUPPORT AND SERVICES** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Information Technology ☐ Computer Maintenance	☐ Practicum of Information Technology ☐ Computer Technician Practicum

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associate's Degrees

- Computer and Information Sciences, General
- Computer and Information Systems Security/ Information Assurance
- Information Technology
- Computer Systems Networking and Telecommunications

Bachelor's Degrees

- Computer and Information Sciences, General
- Computer and Information Systems Security /Information Assurance
- Computer Engineering, General
- Computer Systems Networking and Telecommunications

Master's, Doctoral, and Professional Degrees

- Computer and Information Sciences, General
- Computer Systems Analysis/ Analyst
- Computer Engineering, General
- Information Technology

Industry-Based Certifications

- Business Information Processing
- Cloud Essentials+
- CompTIA A+ Certification
- CompTIA IT Fundamentals+
- Computer Repair Technology - Job Ready
- Google IT Support Professional Certificate



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Job shadow a database administrator or computer hardware engineer

Work-Based Learning Activities

- Earn an IT certification

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Database Administrator	\$83,075	1,063	19%
Computer Hardware Engineer	\$111,738	343	24%
Computer System Analyst and Support	\$87,568	5,937	29%

Principles of Information Technology*Recommended Grade Placement: 9*

Course #: 07084500

1 Credit

In this course, students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment.

Computer Maintenance*Recommended Grade Placement: 9-10*

Course #: 07224520

1 Credit

Students acquire principles of computer maintenance, including electrical and electronic theory, computer hardware principles, and broad level components related to the installation, diagnosis, service, and repair of computer systems.

Computer Technician Practicum*Recommended Grade Placement: 10-11*

Course #: 0722472

2 Credits

Prerequisite: Computer Maintenance

In the Computer Technician Practicum, students will gain knowledge and skills in the area of computer technologies, including advanced knowledge of electrical and electronic theory, computer principles, and components related to the installation, diagnosis, service, and repair of computer-based technology systems. Proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an instructor, industry mentor, or both.

Practicum Information Technology*Recommended Grade Placement: 12*

Course #: 07222240

2 Credits

Prerequisite: At least two credits of Information Technology

Research in IT is a project-based research course for students who have the ability to research a real-world technological problem. Students develop a project on a topic related to information technology career interests, use scientific methods of investigation to conduct in-depth research, are matched with a mentor from the business or professional community, apply information technology concepts, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings.



Networking Systems

Program of Study

Business and Industry Endorsement

The **Networking Systems** program of study explores the occupations and educational opportunities associated with designing and implementing computer and information networks, such as local area networks (LAN), wide area networks (WAN), intranets, extranets, and other data communications networks. This program of study may also include exploration into analyzing science, engineering, and other data processing problems to implement and improve computer systems.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **NETWORK SYSTEMS** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Information Technology ☐ Computer Maintenance ☐ Computer Science I ☐ AP Computer Science Principles	☐ Networking ☐ Practicum of Information Technology

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Computer and Information Sciences, General
- Computer Systems Networking And Telecommunications
- Information Technology
- Network and System Administration/ Administrator

Bachelor's Degrees

- Computer and Information Sciences, General
- Computer Systems Networking And Telecommunications
- Computer and Information Systems Security/ Information Assurance
- Computer Engineering, General

Master's, Doctoral, and Professional Degrees

- Computer and Information Sciences, General
- Information Technology
- Computer and Information Systems Security/ Information Assurance
- Computer Engineering, General

Industry-Based Certifications

- Cisco 100-490 RSTech Supporting Cisco Routing and Switching Network Devices
- Cisco CCNA (200-301) Implementing and Administering Cisco Solutions
- CompTIA A+ Certification
- CompTIA Network+
- CompTIA Server+
- Computer Networking Fundamentals - Job Ready
- Google Cloud Certified Professional - Cloud Architect

- Associate of (ISC)*

*IBC sunsetting 8/31/24

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Job shadow a computer network architect or support specialist

Work-Based Learning Activities

- Earn an IT certification



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Computer Network Architects	\$111,633	1,082	23%
Computer Systems Analysts	\$87,568	5,937	29%
Computer Network Support Specialists	\$68,037	1,824	19%

Principles of Information Technology*Recommended Grade Placement: 9*

Course #: 07084500

1 Credit

In this course, students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment.

Computer Science I*Recommended Grade Placement: 9-10**Algebra I*

Course #: 07222205

1 Credit *Prerequisite:*

Students will access, analyze, and evaluate all types of information in ways that are computable in order to solve problems that range in scope from computing a speeding ticket to instructing a robot to dance, from designing interactive, intelligent fashion garments to creating a mobile app game. Students are exposed to the vast and diverse world of computer science, working collaboratively and individually on projects and learning a variety of programming languages, both graphical and text-based, to use in implementing their solutions. This is the first in the sequence of computer science courses offered for students in the computer science program of study, STEM endorsement. This is an advanced academic course and is weighted in the GPA. ***This course receives weighted GPA credit.***

Computer Maintenance*Recommended Grade Placement: 9-10*

Course #: 07224520

1 Credit

Students acquire principles of computer maintenance, including electrical and electronic theory, computer hardware principles, and broad level components related to the installation, diagnosis, service, and repair of computer systems.

AP Computer Science Principles*Recommended Grade Placement: 9-10*

Course #: 07222209

1 Credit

In this course, students will learn the principles that underlie the science of computing and develop the thinking skills that computer scientist use. Students will work on their own and as part of a team to creatively address real-world issues using the tools and processes of computation.

Networking*Recommended Grade Placement: 11-12**Prerequisite: Computer Maintenance*

Course #: 07224620

1 Credit *Recommended*

In Networking, students will develop knowledge of the concepts and skills related to data networking technologies and practices in order to apply them to personal or career development. To prepare for success, students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

Practicum Information Technology*Recommended Grade Placement: 12**least two credits of Information Technology*

Course #: 07222240

2 Credits *Prerequisite: At*

Research in IT is a project-based research course for students who have the ability to research a real-world technological problem. Students develop a project on a topic related to information technology career interests, use scientific methods of investigation to conduct in-depth research, are matched with a mentor from the business or professional community, apply information technology concepts, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings.



***Programs of Study in the
LAW AND PUBLIC SERVICE
Pathway***

Emergency Services

Law Enforcement

Legal Studies



Emergency Services Program of Study

Law and Public Service Endorsement

The **Emergency Services** program of study focuses on training students to respond to emergency situations, namely medical emergencies and fire-based emergencies. Students may learn how to prevent emergencies, respond appropriately and in accordance with rules and regulations during crises, and investigate and delineate the source of the emergency.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **EMERGENCY SERVICES** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Law, Public Safety, Correction & Security ☐ Principles of Health Science ☐ Disaster Response ☐ Medical Terminology	☐ Health Science Theory ☐ Emergency Medical Technician - Basic (this course is mandatory for the POS) ☐ Anatomy & Physiology ☐ Counseling & Mental Health ☐ Practicum in Law, Public Safety, Corrections and Security

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Emergency Medical Technology/Technician (EMT Paramedic)
- Fire Prevention and Safety Technology/Technician
- Fire Science/Firefighting

Bachelor's Degrees

- Emergency Medical Technology/Technician (EMT Paramedic)
- Natural Resources Law Enforcement and Protective Services

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Attend local emergency awareness events
- Join the Texas Public Service Association

Work-Based Learning Activities

- Volunteer at a hospital or a fire station

Industry-Based Certifications

- Basic Structure Fire Protection
- Emergency Medical Responder
- Emergency Medical Technician - Basic
- IAED Emergency Telecommunicator

- OSHA Hazardous Waste Operations and Emergency Response*

*IBC sunseting 8/31/24



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Firefighters	\$50,149	2,309	13%
Fire Inspectors and Investigators	\$54,787	161	14%
Emergency Medical Technicians	\$34,091	1,880	31%

Principles of Law, Public Safety, Corrections & Security

Course #: 07099000

Recommended Grade Placement: 9

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Law and Public Services. Topics include: Law Enforcement, Criminal Investigation, Court Systems, and Emergency Response.

Disaster Response

Course #: 07229230

Recommended Grade Placement: 11

1 Credit

Disaster Response includes basic training of students in disaster survival and rescue skills that would improve the ability of citizens to survive until responders or other assistance could arrive. Students will receive education, training, and volunteer service to make communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues and disasters of all kinds.

Health Science Theory

Course #: 07226100

Recommended Grade Placement: 9

1 Credit

Must be paired w/Medical Terminology | Corequisite: Biology

A course designed to develop healthcare-specific knowledge and skills in professionalism, effective communications, ethical and legal responsibilities, client care, safety, first aid, and CPR. This class will introduce various healthcare jobs including phlebotomy technician, EKG technician, medical assistant, patient care technician and pharmacy technician. This course prepares the student for the transition to clinical or work-based learning experiences in healthcare with various hands-on skills and activities. This class is a prerequisite to take practicum in health science, where certifications including Certified Patient Care Technician, Certified Pharmacy Technician, and Certified Medical Assistant are earned. Students are encouraged to participate in Health Occupations Students of American (HOSA).

Emergency Medical Technician Basic

Course #: 07229240

Recommended Grade Placement: 11-12

2 Credits

Prerequisite: Biology

Emergency Medical Technician (EMT)—Basic instructs students to meet and exceed standard knowledge needed to be a valid Emergency Medical Technician. The curriculum includes skills necessary for a student to provide entry level emergency medical care, life support, and ambulance service. The EMT—Basic course is an introductory course to concepts, knowledge, and skills needed by EMTs in the areas of communications, transportation, and recordkeeping. Students interested in working in public safety, including fire, police, and ambulance operators will be capable of performing the job expectations of an EMT safely and effectively after the completion of this course.

Anatomy & Physiology

Course #: 03120900

Recommended Grade Placement: 11-12

1 Credit

Counts as a Science credit | Prerequisite: Biology and a second Science credit

This course will take an integrated approach to functional anatomy with emphasis on basic principles and physiological activities of different systems (skeletal, muscular, digestive, respiratory, cardiovascular, urinary, endocrine, reproductive) in mammals. Laboratory experiences will include extensive study and dissection of a mammal. The text, content, and labs are college-level and are designed for students planning to major in science in college. The goal of this course is to better prepare students for undergraduate work in life science majors such as pre-medical or pre-dental studies.



Law Enforcement Program of Study

Law and Public Service Endorsement

The **Law Enforcement** program of study teaches students about the development of, adherence to, and protection of various branches of law. Students may learn how to appropriately and legally respond to breaches in the law according to statutory rules and regulations as well as investigate how and why the breaches occurred.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **LAW ENFORCEMENT** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Law, Public Safety, Corrections & Security ☐ Law Enforcement I ☐ Criminal Investigation	☐ Correctional Services ☐ Forensic Psychology ☐ Forensic Science ☐ Practicum in Law, Public Safety, Corrections and Security

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Criminal Justice/Safety Studies/Law
- Enforcement Administration
- Criminal Justice/Police Science
- Corrections
- Criminalistics and Criminal Science

Bachelor's Degrees

- Criminal Justice/Safety Studies/Law
- Enforcement Administration
- Criminal Justice/Police Science
- Juvenile Corrections
- Cyber/Computer Forensics and Counterterrorism

Master's, Doctoral, and Professional Degrees

- Criminal Justice/Safety Studies/Law
- Enforcement Administration
- Natural Resources
- Law Enforcement and Protective Services

Industry-Based Certifications

- Non-Commissioned Security Officer Level II



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join the Texas Public Service Association or local criminal justice clubs

Work-Based Learning Activities

- Attend court hearings and other legal procedures

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Police and Sheriff's Patrol Officers	\$60,112	5,241	13%
Probation Officers and Correctional Treatment Officers	\$44,054	793	9%
Correctional Officers and Jailers	\$40,186	4,683	9%
Immigration and Customs Inspectors	\$78,104	1,236	9%
First-Line Supervisors of Police and Detectives	\$91,312	253	25%

Principles of Law, Public Safety, Corrections, and Security

Course #: 07099000

Recommended Grade Placement: 9

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Law and Public Services, including Law Enforcement, Criminal Investigation, Court Systems, and Emergency Response.

Law Enforcement I

Course #: 072529110

Recommended Grade Placement: 10-11

1 Credit

Law Enforcement I is an overview of the history, organization, and functions of local, state, and federal law enforcement. This course includes the role of constitutional law, the United States legal system, criminal law, law enforcement terminology, and the classification and elements of crime. Students can pursue national certifications in CPR (Cardiopulmonary Resuscitation) and CERT (The Community Emergency Response Team) Program.

Criminal Investigation

Course #: 07229105

Recommended Grade Placement: 10-11

1 Credit

Criminal Investigation is a course that introduces students to the profession of criminal investigations. Students will understand basic functions of criminal investigations and procedures and will learn how to investigate or follow up during investigations. Students will learn terminology and investigative procedures related to criminal investigation, crime scene processing, evidence collection, fingerprinting, and courtroom presentation. Through case studies and simulated crime scenes, students will collect and analyze evidence such as fingerprint analysis, bodily fluids, hairs, fibers, shoe and tire impressions, bite marks, drugs, tool marks, firearms and ammunition, blood spatter, digital evidence, and other types of evidence.

Correctional Services

Course #: 07229200

Recommended Grade Placement: 10-11

1 Credit

In Correctional Services, students prepare for certification required for employment as a correctional officer. The student will learn the role and responsibilities of a correctional officer; discuss relevant rules, regulations, and laws; and discuss defensive tactics, restraint techniques, and first aid procedures as used in the correctional setting. The student will analyze rehabilitation and alternatives to institutionalization. Students can pursue national certifications in CPR (Cardiopulmonary Resuscitation) and CERT (The Community Emergency Response Team) Program.

Forensic Science

Course #: 07229300

Recommended Grade Placement: 11-12

1 Credit

Approved by the State Board of Education for 4th science credit | Prerequisite: Biology and Chemistry

Forensic Science is a course that uses a structured and scientific approach to the investigation of crimes of assault, abuse and neglect, domestic violence, accidental death, homicide, and the psychology of criminal behavior. Students will learn terminology and investigative procedures related to crime scene, questioning, interviewing, criminal behavior characteristics, truth detection, and scientific procedures used to solve crimes.

Using scientific methods, students will collect and analyze evidence through case studies and simulated crime scenes such as fingerprint analysis, ballistics, and blood spatter analysis. Students will learn the history, legal aspects, and career options for forensic science.

Forensic Psychology

Recommended Grade Placement: 10-11

Course #: 07229260

1 Credit

Forensic psychology is found at the intersection between psychology and the criminal justice system. It involves understanding criminal law in the relevant jurisdictions in order to be able to interact within the criminal justice system. It utilizes and applies basic skills developed in psychology and criminal scenarios resulting in a structured and scientific approach to investigative analysis; thereby, enabling police and law enforcement officials to predict criminal activity via scientific analysis rather than intuition. Students will learn basic structured psychological investigative techniques in question building, interviewing, criminal behavior characteristics, truth detection methodology, research methods, statistical analysis and probability forecasting.

Practicum In Law, Public Safety, Corrections, and Security

Recommended Grade Placement: 12

Prerequisite: At least two credits in Law Enforcement Pathway

Course #: 07229025

2 Credits

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Law, Public Safety, Corrections, and Security Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Associates Degree in Criminal Justice

College Credit Opportunity – Tarrant County College

Crowley ISD offers dual credit courses in Criminal Justice to achieve an associate's degree. These courses are offered through Tarrant County College and tuition is waived. Students must be enrolled in Tarrant County College. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.



Legal Studies Program of Study

Law and Public Service Endorsement

The **Legal Studies** program of study introduces students to the occupations and educational opportunities related to representing clients in criminal and civil litigation and other legal proceedings, as well as assisting lawyers and preparing legal documents. This program of study explores possible specializations in a single area of law.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **LEGAL STUDIES** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Law, Public Safety, Correction & Security ☐ Court Systems and Practices ☐ Political Science I ☐ Business Law	☐ Practicum in Law, Public Safety, Corrections & Security ☐ Advanced Legal Skills and Professions

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Legal Assistant/Paralegal

Bachelor's Degrees

- Legal Assistant/Paralegal

Master's, Doctoral, and Professional Degrees

- Law
- Intellectual Property Law
- Advanced Legal Research/Studies General
- International Law and Legal Studies



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Attend court hearings and other legal procedures
- Join the Texas Public Service Association

Work-Based Learning Activities

- Intern with a local attorney
- Script and conduct a mock trial

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Lawyers	\$126,131	2,801	19%
Paralegal and Legal Assistants	\$50,544	2,837	19%

Principles of Law, Public Safety, Corrections & Security

Course #: 07099000

Recommended Grade Placement: 9

1 Credit

This course is designed to give students hands-on application in the Programs of Study of Law and Public Services. Topics include: Law Enforcement, Criminal Investigation, Court Systems, and Emergency Response.

Court Systems & Practices

Course #: 07229210

Recommended Grade Placement: 10-11

1 Credit

Court Services is an overview of the federal and state court systems. The course identifies the roles of judicial officers and the trial processes from pretrial to sentencing and examines the types and rules of evidence. Emphasis is placed on constitutional laws for criminal procedures such as search and seizure, stop and frisk, and interrogation. Students can pursue national certifications in CPR (Cardiopulmonary Resuscitation) and CERT (The Community Emergency Response Team) Program.

Political Science I

Course #: 07229700

Recommended Grade Placement: 10-11

1 Credit

This course will familiarize the student with political theory through the study of governments; public policies; and political processes, systems, and behavior.

Practicum in Law, Public Safety, Corrections & Security

Course #: 07229025

Recommended Grade Placement 12

2 Credits

Prerequisite: At least two credits in Law Enforcement Pathway

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Law, Public Safety, Corrections, and Security Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Advanced Legal Skills and Professions

Course #: 07229150

Recommended Grade Placement: 11-12

1 Credit

This course provides students with a foundation to understand the basic mechanics of the U.S. legal system. Building on prior instruction in constitutional issues and the basics of American court systems, this course provides insight into the practical application of the law, as well as civil and criminal procedure, giving students a hands-on opportunity to experience a variety of legal professions.



*Programs of Study in the
SCIENCE, TECHNOLOGY, ENGINEERING, AND MATH
Pathway*

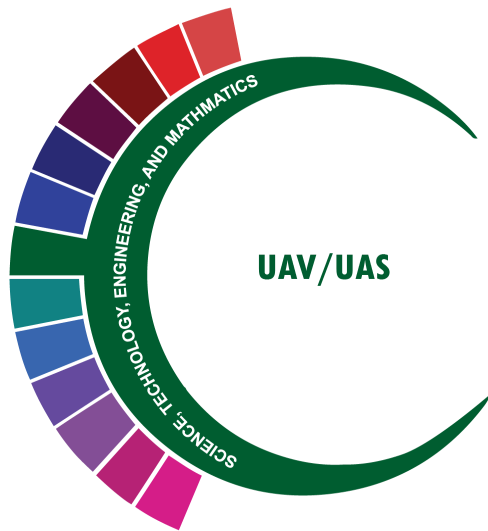
Biomedical Science

UAV / UAS

Cybersecurity

Engineering

Programming and Software Development



Unmanned Autonomous Systems and Vehicles (Formerly Aerial Robotics - Drones) Program of Study *STEM Endorsement*

The **Unmanned Autonomous Systems and Vehicles** program of study emphasizes the skills necessary to fly and program unmanned vehicles while also conducting field operations and repairs.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

NOTE: This program of study is part of the Crowley Academy of Aviation, Transportation and Logistics. For enrollment information, please visit the C-ATL website or the College Credit Opportunities section on page 16 of this guide.

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Survey Technology/Surveying

Bachelor's Degrees

- Civil Engineering
- Geoscience

Master's, Doctoral, and Professional Degrees

- Civil Engineering
- Geoscience

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA competitions

Work-Based Learning Activities

- Intern at a surveying firm

Industry-Based Certifications

- ESRI ArcGIS Desktop Entry

*IBC sunseting 8/31/24



HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Part 107 Remote Drone Pilot	Commercial Pilots	Airline Pilots, Copilots, and Flight Engineers		

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineering and Operations Technicians	\$60,757	114	9%
Avionics Technicians	\$59,114	170	9%
Airline Pilots, Copilots, and Flight Engineers	\$165,130	1,150	9%
Commercial Pilots	\$86,310	548	9%

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in SkillsUSA Explore virtual aviation websites	Seek part-time work at an airport, aviation services agency, or airline

Level I Certificate in UAV/UAS

College Credit Opportunity – Tarrant County College

Crowley ISD offers dual credit courses in UAV/UAS to achieve a Level One Certificate in UAV/UAS. These courses are offered through Tarrant County College and tuition is waived. Students must be enrolled in Tarrant County College. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.



Biomedical Science Program of Study

Public Service or STEM Endorsement

The **Biomedical Science** program of study focuses on the study of biology and medicine in order to introduce students to the knowledge and skill necessary to be successful in the healthcare field, such as researching and diagnosing diseases, pre-existing conditions, or other determinants of health. Students may also practice patient care and communication.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **BIOMEDICAL SCIENCE** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Principles of Biomedical Science ☐ Human Body Systems	☐ Pathophysiology ☐ Medical Interventions ☐ Biomedical Innovation ☐ Practicum of STEM

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Histologic Technician
- Clinical Laboratory Science/Medical Technology/Technologist

Bachelor's Degrees

- Biomedical Engineers
- Clinical Laboratory Science/Medical Technology/Technologist

Master's, Doctoral, and Professional Degrees

- Genetic Counseling
- Medical Scientists
- Epidemiology

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join Health Occupations Students of America

Work-Based Learning Activities

- Intern at a lab
- Shadow a healthcare or medical professional

Industry-Based Certifications

- Biotechnician Assistant Credentialing Exam (BACE)
- Medical Laboratory Assistant
- Medical Laboratory Technician



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Medical and Laboratory Technicians	\$37,981	1,159	28%
Biological Technicians	\$42,931	452	17%
Forensic Science Technicians	\$48,152	171	35%
Chemical Technicians	\$49,733	672	10%
Medical and Clinical Laboratory Technologists	\$58,760	1,166	35%

Principles of Biomedical Science

Course #: 07226004

Recommended Grade Placement: 9

1 Credit

Students explore concepts of Biology and Medicine to determine factors that led to the death of a fictional person. During the investigation, the students will examine autopsy reports, investigate medical history, and explore medical treatments that might have prolonged the person's life. Students would be introduced to human physiology, basic biology, medicine, and research processes which will allow them to design their own experiments to solve problems. This course does not count as a science credit.

Human Body Systems

Course #: 07226300

Recommended Grade Placement: 10-11

1 Credit

Students examine the interactions of human body systems as they explore identity, power, movement, protection and homeostasis. Exploring science in action, students build organs and tissues on a skeletal Manikin; use data acquisition software to monitor body functions such as muscle movement, reflex and voluntary action, and respiration; and take on the roles of biomedical professionals to solve real-world medical cases. This course does not count as a science credit.

Medical Interventions

Course #: 07226320

Recommended Grade Placement: 11-12

1 Credit

Students follow the life of a fictitious family as they investigate how to prevent, diagnose, and treat disease. Students explore how to detect and fight infection; screen and evaluate the code in human DNA; evaluate cancer treatment options; and prevail when the organs of the body begin to fail. Through real-world cases, students are exposed to a range of interventions related to immunology, surgery, genetics, pharmacology, medical devices and diagnostics. This course does not count as a science credit.

Biomedical Innovation

Course #: 07226310

Recommended Grade Placement: 12

1 Credit

Students build on the knowledge and skills gained from the previous courses to design innovative solutions for the most pressing health challenges of the 21st century. Students apply their knowledge and skills to answer questions or solve problems in the biomedical sciences. This course does not count as a science credit.

Pathophysiology

Course #: 07226400

Recommended Grade Placement: 11-12

1 Credit

Approved by the State Board of Education for 4th science credit | Prerequisite: Biology and Chemistry

In this course, students conduct laboratory investigations and fieldwork, use scientific methods during investigations, and make informed decisions using critical thinking and problem solving. Students study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of diseases. Students will differentiate between normal and abnormal physiology. Should be taken with Medical Microbiology.

Practicum of STEM

Course #: 07228920

Recommended Grade Placement: 11-12

2 Credits

Prerequisite: Algebra I and Geometry | Recommended Prerequisite: Two credits in STEM Pathway

This course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Cybersecurity Program of Study

Business and Industry or STEM Endorsement

The **Cybersecurity** program of study includes the occupations and educational opportunities related to planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study may also include exploration into responding to computer security breaches and viruses and administering network security measures.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **CYBERSECURITY** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ AP Computer Science Principles ☐ Foundations of Cybersecurity ☐ Computer Maintenance	☐ Networking ☐ Cybersecurity Capstone ☐ Practicum of Information Technology

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associate's Degrees

- System Networking, and LAN/WAN Management
- Information Technology
- Computer and Information Sciences, General
- Computer Science

Bachelor's Degrees

- Computer Systems Networking and Telecommunications
- Computer Systems Networking and Telecommunications
- Computer and Information Sciences, General
- Computer Science

Master's, Doctoral, and Professional Degrees

- Computer Systems Analysis/Analyst
- Information Technology
- Computer Information Sciences, General
- Computer Science

Industry-Based Certifications

- Cisco 200-201 CBROPS - Understanding Cisco Cybersecurity Operations Fundamentals
- CompTIA A+ Certification
- CompTIA Network+
- CompTIA Security+
- Cybersecurity Fundamentals
- CyberSecurity Fundamentals: An ISACA Certificate
- Oracle Certified Associate Java SE 8 Programmer

- Associate of (ISC)*

*IBC sunsetting 8/31/24

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Job shadow a computer system analyst or information security analyst

Work-Based Learning Activities

- Obtain a cybersecurity IBC



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Information Security Analysts	\$91,915	814	29%
Network and Computer System Administrators	\$82,597	2,814	19%
Computer System Analysts	\$87,568	5,937	29%

AP Computer Science Principles

Course #: 07222209

Recommended Grade Placement: 9-10

1 Credit

In this course, students will learn the principles that underlie the science of computing and develop the thinking skills that computer scientists use. Students will work on their own and as part of a team to creatively address real-world issues using the tools and processes of computation. *AP courses receive weighted GPA credit.*

Foundations of Cybersecurity

Course #: 07224830

Recommended Grade Placement: 9-10

1 Credit

In this course, students will develop the knowledge and skills needed to explore fundamental concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyber-attacks, threats, and vulnerabilities. Students will review and explore security policies designed to mitigate risks.

Computer Maintenance

Course #: 07224520

Recommended Grade Placement: 9-10

1 Credit

Students acquire principles of computer maintenance, including electrical and electronic theory, computer hardware principles, and broad level components related to the installation, diagnosis, service, and repair of computer systems.

Networking

Course #: 07224620

Recommended Grade Placement: 11-12

1 Credit

In Networking, students will develop knowledge of the concepts and skills related to data networking technologies and practices in order to apply them to personal or career development. To prepare for success, students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

Cybersecurity Capstone

Course #: 07224840

Recommended Grade Placement: 11-12

1 Credit

Prerequisite: Foundations of Cybersecurity

Students will develop the knowledge and skills needed to explore advanced concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyber-attacks, threats, and vulnerabilities, and students will develop security policies to mitigate risk. The skills obtained in this course will prepare students for additional study toward industry certification.

Practicum of Information Technology

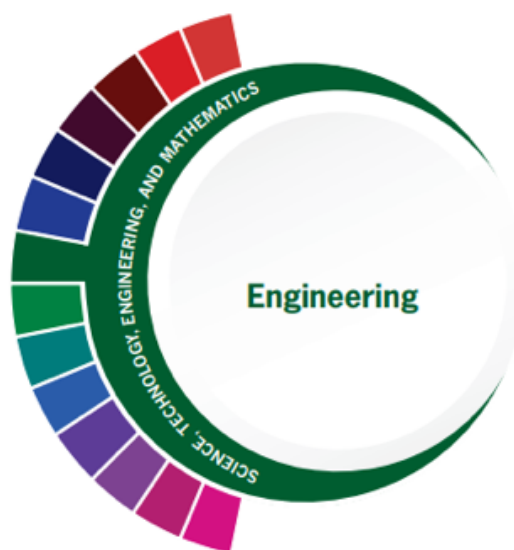
Course #: 07222240

Recommended Grade Placement: 12

2 Credits

Prerequisite: At least two credits of Cybersecurity courses

Research in IT is a project-based research course for students who have the ability to research a real-world technological problem. Students develop a project on a topic related to information technology career interests, use scientific methods of investigation to conduct in-depth research, are matched with a mentor from the business or professional community, apply information technology concepts, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings.



Engineering Program of Study

Business and Industry or STEM Endorsement

The **Engineering** program of study focuses on the design, development, and use of engines, machines, and structures. Students will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **ENGINEERING** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Introduction to Engineering Design ☐ Engineering Essentials (<i>middle school course only</i>)	☐ Aerospace Engineering ☐ Digital Electronics ☐ Engineering Science ☐ Practicum in STEM

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Electrical and Electronics Engineering
- Drafting and Design Technology/ Technician, General
- Engineering Technology

Bachelor's Degrees

- Electrical and Electronics Engineering
- CAD/CADD Drafting and/or Design Technology/ Technician
- Bioengineering and Biomedical Engineering
- Construction Engineering Technology/ Technician

Master's, Doctoral, and Professional Degrees

- Electrical and Electronics Engineering
- Mechanical Engineering
- Bioengineering and Biomedical Engineering

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Skills USA competitions

Work-Based Learning Activities

- Intern at an engineering firm
- Shadow a machinist

Industry-Based Certifications

- Autodesk Associate (Certified User) AutoCAD
- Autodesk Associate (Certified User) Fusion 360
- Autodesk Associate (Certified User) Inventor for Mechanical Design
- Autodesk Associate (Certified User) Revit Architecture
- Autodesk Associate (Certified User) Revit for Electrical
- Autodesk Associate (Certified User) Revit for Structural Design
- Autodesk Certified Professional Fusion 360
- Autodesk Certified Professional in AutoCAD for Design and Drafting
- Autodesk Certified Professional in Civil 3D for Infrastructure Design
- Autodesk Certified Professional in Inventor for Mechanical Design
- Autodesk Certified Professional in Revit for Architectural Design
- Autodesk Certified Professional in Revit for Electrical Design
- Autodesk Certified Professional in Revit for Structural Design
- C-103 Certified Industry 4.0 Associate - Robot System Operations
- Engineering Technology Foundations
- Lean Six Sigma Green Belt Certification
- Pre-Engineering/Engineering Technology - Job Ready

- Certified SOLIDWORKS Associate*

*IBC sunseting 8/31/24

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,107	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	10%

Introduction to Engineering Design (IED) – Project Lead The Way*Recommended Grade Placement: 9-10*

Course #: 07228000

1 Credit

Designed for 9th or 10th grade students and serves as the foundation for all PLTW courses, the major focus of the IED course is to expose students to the design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards and technical documentation. Students use 3D solid modeling design software to help them design solutions to solve proposed problems and learn how to document their work and communicate solutions to peers and members of the professional community. Students will have an opportunity to test for college credit through UT Tyler. The college course credit is for Engineering 1201: Introduction to Engineering. PLTW courses may count for college credit and will receive additional weight using the Dual Credit scale for the weighted GPA.

Engineering Science (formerly Principles Of Engineering)*Recommended Grade Placement: 10-11*

Course #: 07228120

1 Credit

Prerequisite: Algebra I and Biology, Chemistry, Integrated Physics and Chemistry (IPC), or Physics | Recommended prerequisite: Geometry

This survey course of engineering exposes students to major concepts they'll encounter in a postsecondary engineering course of study. Students employ engineering and scientific concepts in the solution of engineering design problems. They develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges, documenting their work and communicating solutions to peers and members of the professional community. PLTW courses may count for college credit and will receive additional weight using the Dual Credit scale for the weighted GPA.

Aerospace Engineering (AE) - Project Lead The Way*Recommended Grade Placement: 11-12*

Course #: 07228210

1 Credit

Aerospace Engineering engages students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering. Using 3-D design software, students work in teams utilizing hands-on activities, projects and problems and are exposed to various situations encountered by aerospace engineers. This course is designed for 11th or 12th grade students. PLTW courses may count for college credit and will receive additional weight using the Dual Credit scale for the weighted GPA.

Digital Electronics (DE) - Project Lead The Way

Course #: 07228150

Recommended Grade Placement: 11-12

1 Credit

Prerequisite: Algebra I and Geometry

Digital electronics is the foundation of all modern electronic devices such as cellular phones, MP3 players, laptop computers, digital cameras and high-definition televisions. The major focus of the DE course is to expose students to the process of combinational and sequential logic design, teamwork, communication methods, engineering standards and technical documentation. This course is designed for 10th or 11th grade students. PLTW courses may count for college credit and will receive additional weight using the Dual Credit scale for the weighted GPA.

Practicum of STEM

Course #: 07228920

Recommended Grade Placement: 11-12

2 Credits

Prerequisite: Algebra I and Geometry | Recommended Prerequisite: Two credits in STEM Pathway

This course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Programming and Software Development Program of Study

Business and Industry or STEM Endorsement

The **Programming and Software Development** program of study explores the occupations and education opportunities associated with researching, designing, developing, and testing operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computer applications. This program of study may also include exploration into creating, modifying, and testing the codes, forms, and script that allows computer applications to run.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

There are two pathways in Programming and Software development — one for those who plan to major in computer science in college and one for those who plan on a career in programming after high school.

Courses in the PROGRAMMING AND SOFTWARE DEVELOPMENT FOR COMPUTER SCIENCE MAJORS Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Computer Science I	☐ Computer Science II ☐ Computer Science III ☐ Computer Science - Advanced Placement

Courses in the **PROGRAMMING AND SOFTWARE DEVELOPMENT FOR CAREER PROGRAMMING** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses

- ☐ Computer Science I
- ☐ Game Programming and Design

Advanced Courses

- ☐ Computer Science II
- ☐ Practicum of STEM

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Computer Programming/Programmer General
- Computer Software Engineer
- Computer Science
- Certified Software Analyst

Bachelor's Degrees

- Management Information Systems, General
- Computer Software Engineer
- Computer Science
- Information Science/ Studies

Master's, Doctoral, and Professional Degrees

- Computer Software Engineer
- Computer Science
- Information Science/ Studies

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Participate in coding club at school

Work-Based Learning Activities

- Obtain an industry-based certification

Industry-Based Certifications

- C++ Certified Associate Programmer
- Certified Entry-Level Python Programmer (PCEP)
- Certified Professional Programmer
- CompTIA Linux+
- Oracle Certified Associate Java SE 8 Programmer
- Oracle Database SQL Certified Associate



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Software Developer, Systems Software	\$103,334	2,985	25%
Software Developers, Application	\$104,499	6,311	30%
Computer Programmers	\$79,893	1,454	9%

Computer Science I

Recommended Grade Placement: 9-12

Prerequisite: Algebra I

Course #: 07222205

1 Credit

Students will access, analyze, and evaluate all types of information in ways that are computable in order to solve problems that range in scope from computing a speeding ticket to instructing a robot to dance, from designing interactive, intelligent fashion garments to creating a mobile app game. Students are exposed to the vast and diverse world of computer science, working collaboratively and individually on projects and learning a variety of programming languages, both graphical and text-based, to use in implementing their solutions. This is the first in the sequence of computer science courses offered for students in the computer science program of study, STEM endorsement. This is an advanced academic course and is weighted in the GPA. ***This course receives weighted GPA credit.***

Computer Science - Advanced Placement

Recommended Grade Placement: 9-12

Approved by State Board of Education for math credit | Prerequisite: Algebra I

Course #: 07222206

1 Credit

This course is a college-level course equivalent of a first semester computer science course in college. Students will learn and apply computer science concepts to write computer programs in the Java programming language and to prepare for the AP Computer Science A exam in May. Students should be comfortable with algebraic functions and concepts including the use of functional notation such as $f(x) = x + 2$ and $f(x) = g(h(x))$, should be successful working independently, be prepared to spend 3-5 hours per week outside of the classroom working on programming assignments and accept the challenge of preparing for an AP exam. This is the second in the sequence of computer science courses offered for students in the computer science program of study, STEM endorsement. This is an advanced academic course and is weighted in the GPA. Students enrolling in Advanced Placement courses will be required to take the Advanced Placement or Mock AP exams for each course in order to receive credit. ***This course receives weighted credit for GPA calculation.***

Computer Science II

Recommended Grade Placement: 10-12

Prerequisite: Computer Science I and Algebra I

Course #: 07222220

1 Credit

This is the second in the sequence of computer science courses offered. Students will continue their learning of more advanced computer science concepts including object-oriented programming in the Java programming language. Students will learn much of the same information as contained in AP Computer Science A but without preparing for the AP exam. This is the second in the sequence of computer science courses offered for students in the computer science program of study, STEM endorsement. ***This course receives weighted credit for GPA calculation.***

Computer Science III

Recommended Grade Placement: 10-12

Prerequisite: Computer Science II or AP Computer Science

Course #: 07222230

1 Credit

This is the third in the sequence of computer science courses offered. Students will learn additional data structures for storing and retrieving data including Sets, Maps, Lists, Stacks, Queues and Trees, and explore the advantages/disadvantages of each. Students will explore how technology impacts our lives by exploring current computer science topics such as artificial intelligence, cybersecurity and nanotechnology. In addition, students will choose computing topics of interest to research. This is the third in the sequence of computer science courses offered for students in the computer science program of study, STEM endorsement. ***This course receives weighted credit for GPA calculation.***

Game Programming And Design

Recommended Grade Placement: 10-12

Prerequisite: Algebra I

Course #: 07224940

1 Credit

Game Programming and Design will foster student creativity and innovation by presenting students with opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve gaming problems. Through data analysis, students will include the identification of task requirements, plan search strategies, and use programming concepts to access, analyze, and evaluate information needed to design games. By acquiring programming knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will create a computer game that is presented to an evaluation panel.

Practicum of STEM

Recommended Grade Placement: 11-12

Prerequisite: Algebra I and Geometry | Recommended Prerequisite: Two credits in Programming and Software Program of Study

Course #: 07228920

2 Credits

This course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

Computer Programming AAS

College Credit Opportunity – Tarrant County College

Crowley ISD offers an Associates Degree Program in Computer Programming. These courses are offered through Tarrant County College and tuition is waived. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more *information*.



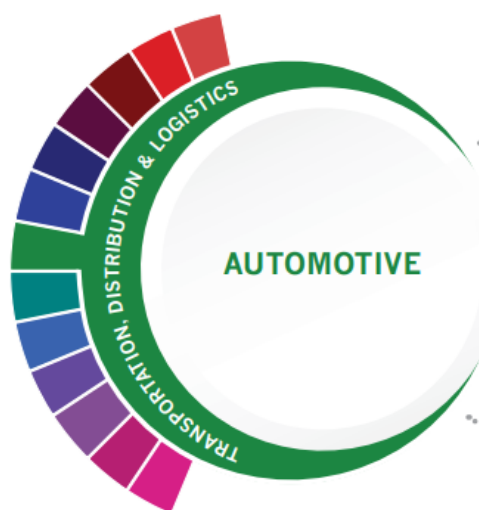
*Programs of Study in the
TRANSPORTATION, DISTRIBUTION, AND LOGISTICS
Pathway*

Automotive

Aviation Flight

Aviation Maintenance

Distribution and Logistics



Automotive Program of Study

Business and Industry Endorsement

The **Automotive** program of study teaches students how to repair automobiles and service various types of vehicles. Students may learn to collect payment for services or supplies and perform typical vehicle maintenance procedures such as lubrication, oil changes, installation of antifreeze, or replacement of accessories like wiper blades or tires.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

NOTE: This program of study is part of the Crowley Academy of Aviation, Transportation and Logistics. For enrollment information, please visit the C-ATL website or the College Credit Opportunities section on page 16 of this guide.

Courses in the **AUTOMOTIVE** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Entry-Level Courses	Advanced Courses
☐ Small Engine Technology I ☐ Automotive Basics (<i>must be taken concurrently with Automotive Technology I</i>)	☐ Automotive Technology I (<i>must be taken concurrently with Automotive Basics</i>) ☐ Automotive Technology II (<i>must be taken concurrently with Advanced Transportation Systems Laboratory</i>) ☐ Advanced Transportation Systems Laboratory (<i>must be taken concurrently with Automotive Technology II</i>)

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Autobody/ Collision and Repair Technology/ Technician
- Medium/Heavy Vehicle and Truck Technology/ Technician
- Mechanical Engineering/ Mechanical Technology/ Technician

Bachelor's Degrees

- Mechanical Engineering/ Mechanical Technology/ Technician

Master's, Doctoral, and Professional Degrees

- Mechanical Engineering

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join SkillsUSA or the Automotive Service Association

Work-Based Learning Activities

- Work at a local automotive repair or body shop

Industry-Based Certifications

- ASE Entry Level Automobile Maintenance and Light Repair (MR)
- ASE Entry-Level Automobile Automatic Transmission/Transaxle (AT)
- ASE Entry-Level Automobile Brakes (BR)
- ASE Entry-Level Automobile Electronic/Electrical Systems (EE)
- ASE Entry-Level Automobile Engine Performance (EP)
- ASE Entry-Level Automobile Engine Repair (ER)
- ASE Entry-Level Automobile Heating and Air Conditioning (AC)
- ASE Entry-Level Automobile Manual Drive Train and Axles (MD)
- ASE Entry-Level Automobile Service Technology
- ASE Entry-Level Automobile Suspension and Steering (SS)
- ASE Entry-Level Collision Mechanical and Electrical Components (ME)
- ASE Entry-Level Collision Non-Structural Analysis and Damage Repair (SR)
- ASE Entry-Level Collision Painting and Refinishing (PR)
- ASE Entry-Level Collision Structural Analysis and Damage Repair
- ASE Refrigerant Recovery and Recycling
- Principles of Small Engine Technology Certification
- Small Engine Technology

- OSHA 30 Hour General*
- ASE Suspension and Steering*
- ASE Structural Analysis Damage Repair*
- ASE Painting & Refinishing*
- ASE Non-Structural Analysis Damage Repair*
- ASE Mech Elec Components*
- ASE Manual Drive Train Axles*
- ASE Maintenance Light Repair*
- ASE Heating, Ventilation, AC (HVAC)*
- ASE Auto Transmission*
- ASE Automobile Service Technology*
- ASE Brakes*
- ASE Electrical/Electronic Systems*
- ASE Engine Performance*
- ASE Engine Repair*

*IBC sunseting 8/31/24

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Automotive Body and Related Repairers	\$40,144	1,456	25%
Automotive Service Technician and Mechanics	\$38,459	5,557	18%

Small Engine Technology I*Recommended Grade Placement: 9-10*

Course #: 07229615

1 Credit

Small Engine Technology I includes knowledge of the function and maintenance of the systems and components of all types of small engines such as outdoor power equipment, motorcycles, generators, and irrigation engines. This course is designed to provide training for employment in the small engine technology industry. Instruction includes the repair and service of cooling, air, fuel, lubricating, electrical, ignition, and mechanical systems. In addition, the student will receive instruction in safety, academic, and leadership skills as well as career opportunities.

Automotive Basics*Recommended Grade Placement: 11*

Course #: 07220135

1 Credit

NOTE: This course must be taken concurrently with Automotive Technology I

Automotive Basics includes knowledge of the basic automotive systems and the theory and principles of the components that make up each system and how to service these systems. Automotive Basics includes applicable safety and environmental rules and regulations. In Automotive Basics, students will gain knowledge and skills in the repair, maintenance, and servicing of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

Automotive Technology I: Maintenance and Light Repair*Recommended Grade Placement: 11*

Course #: 07229600

2 Credits

Recommended Prerequisite: Small Engine Technology I | NOTE: This course must be taken concurrently with Automotive Basics

Automotive Technology I: Maintenance and Light Repair includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. This course includes applicable safety and environmental rules and regulations. Students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

Automotive Technology II: Automotive Service

Course #: 07229601

Recommended Grade Placement: 12

2 Credits

Prerequisite: Automotive Technology I: Automotive Basics | NOTE: This course must be taken concurrently with Advanced Transportation Systems Laboratory

Automotive Technology II: Automotive Service includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology II: Automotive Service includes applicable safety and environmental rules and regulations. In this course, students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

Advanced Transportation Systems Laboratory

Course #: 07229601

Recommended Grade Placement: 12

1 Credit

Prerequisite: Automotive Technology I: Automotive Basics | NOTE: This course must be taken concurrently with Advanced Transportation Systems Laboratory

This course provides an enhancement opportunity for students to develop the additional skills necessary to pursue industry certification in Automotive Technology. It is a concurrently scheduled course with Automotive Technology II.

Engine Analysis Technician Certification**College Credit Opportunity – Tarrant County College**

Crowley ISD offers dual credit courses in Automotive Technology. These courses are offered through Tarrant County College and tuition is waived. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.



Aviation Flight Program of Study

Business and Industry Endorsement

The **Aviation Flight** regional program of study introduces CTE learners to the occupations and education opportunities related to understanding the principles and science of flight, aviation engineering, air navigational aids, air traffic controls, and communications equipment to ensure conformance with federal safety regulations.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

Courses in the **AVIATION FLIGHT** Program of Study

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

<i>Entry-Level Courses</i>	<i>Advanced Courses</i>
☐ Introduction to Aerospace & Aviation ☐ Introduction to Unmanned Aerial Vehicle (UAV) Flight	☐ Aerospace Engineering ☐ Aviation Ground School ☐ Practicum in Transportation Systems

Postsecondary Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Airline Pilots, Copilots, and Flight Engineers

Industry-Based Certifications

- FAA Part 107 Remote Drone Pilot

- Certified Aerospace Technician*
- OSHA 30 Hour General*

*IBC sunsetting 8/31/24



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA
- Explore virtual aviation websites

Work-Based Learning Activities

- Work in an aviation apprenticeship or internship
- Work for a drone company

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineering and Operations Technicians	\$60,757	114	9%
Airline Pilots, Copilots, and Flight Engineers	\$165,130	1,150	9%
Commercial Pilots	\$86,310	548	9%

Introduction to Aerospace & Aviation*Recommended Grade Placement: 9-10*

Course #: 07229860

1 Credit

The Introduction to Aerospace and Aviation course will provide the foundation for advanced exploration in the areas of professional pilot, aerospace engineering, and unmanned aircraft systems. Students will learn about the history of aviation, from Leonardo da Vinci's ideas about flight to the Wright brothers and the space race. Along the way students will learn about the innovations and technological developments that have made today's aviation and aerospace industries possible. The course includes engineering practices, the design process, aircraft structure, space vehicles past and present, and a look toward future space exploration.

Introduction to Unmanned Aerial Vehicle (UAV) Flight*Recommended Grade Placement: 9-11*

Course #: 07229850

1 Credit

The Introduction to Unmanned Aerial Vehicle (UAV) Flight course is designed to prepare students for entry-level employment or continuing education in piloting UAV operations. Principles of UAV is designed to instruct students in UAV flight navigation, industry laws and regulations, and safety regulations. Students are also exposed to mission planning procedures, environmental factors, and human factors involved in the UAV industry.

Aerospace Engineering (AE) - Project Lead The Way*Recommended Grade Placement: 11-12*

Course #: 07228210

1 Credit

Aerospace Engineering engages students in engineering design problems related to aerospace information systems, astronautics, rocketry, propulsion, the physics of space science, space life sciences, the biology of space science, principles of aeronautics, structures and materials, and systems engineering. Using 3-D design software, students work in teams utilizing hands-on activities, projects and problems and are exposed to various situations encountered by aerospace engineers. This course is designed for 11th or 12th grade students. PLTW courses may count for college credit and will receive additional weight using the Dual Credit scale for the weighted GPA.

Aviation Ground School*Recommended Grade Placement: 11-12*

Course #: 07229870

1 Credit

This course is designed to extend student interests in all aspects of aviation while preparing students to take the formal ground requisite exam for the Federal Aviation Administration (FAA) FAA Airman Knowledge Test which is required to obtain a private pilot's license. The rigor of the course challenges students with complex aeronautical, engineering, weather, management and judgment concepts. Rules, regulations, obligations, and commitments to discipline and focus are foundational throughout the course. The ability to grasp flight without actually flying a real aircraft extends well beyond the classroom as students learn navigation, weather science, attention to detail (mathematical fuel and load planning), health and mental well-being related to flight planning and piloting aircraft.

Practicum in Transportation Systems*Recommended Grade Placement: 11-12*

Course #: 07229835

2 Credits

The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Aviation Flight program of study. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.



Aviation Maintenance Program of Study

Business and Industry Endorsement

The **Aviation Maintenance** program of study introduces students to the occupations and education opportunities related to inspecting aircraft, maintenance procedures, air navigational aids, air traffic controls, and communications equipment to ensure conformance with federal safety regulations.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

NOTE: This program of study is part of the Crowley Academy of Aviation, Transportation and Logistics. For enrollment information, please visit the C-ATL website or the College Credit Opportunities section on page 16 of this guide.

Options, Occupations & Additional Learning Opportunities

Postsecondary Opportunities

Associates Degrees

- Avionics Maintenance Technology/Technician
- Aircraft Powerplant Technology/ Technician
- Airframe Mechanics and Aircraft Maintenance Technology/Technician

Bachelor's Degrees

- Airframe Mechanics and Aircraft Maintenance Technology/Technician

Industry-Based Certifications

- Aerospace Manufacturing Certification
- OSHA 30 Hour General*
- Certified Aerospace Technician*
- FAA Aviation Maintenance Technician Airframe*
- FAA Aviation Maintenance Technician General*
- ISCET Certified Electronics Technicians*

*IBC sunsetting 8/31/24



Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in SkillsUSA
- Explore virtual aviation websites

Work-Based Learning Activities

- Seek part-time work at an airport, aviation services agency, or airline

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Aircraft Mechanics and Technicians	\$58,698	1,469	9%
Avionics Technicians	\$59,114	170	9%

Level II Certificate in Aviation Maintenance in Powerplant

College Credit Opportunity – Tarrant County College

Crowley ISD offers dual credit courses to achieve a Level One Certificate in Aviation Maintenance. These courses are offered through Tarrant County College and tuition is waived. Students must be enrolled in Tarrant County College. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.



Distribution and Logistics Program of Study

Business and Industry Endorsement

The **Distribution and Logistics** program of study teaches students how to plan, coordinate, and direct people and operational plans related to distributed goods and services. Students will learn how to manage daily operations and logistics personnel.

To complete the Program of Study, students must earn four credits in the Program of Study and one of the credits must be an Advanced Level course.

NOTE: This program of study is part of the **Crowley Academy of Aviation, Transportation and Logistics**. For enrollment information, please visit the **C-ATL website** or the **College Credit Opportunities** section on page 16 of this guide.

Postsecondary Options, Occupations and Additional Learning Opportunities

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE	OCCUPATIONS	MEDIAN WAGE	ANNUAL OPENINGS	% GROWTH
MSSC Certified Logistics Technicians	Emergency Number Professional	Business Administration and Management, General			Logisticians	\$77,210	1,550	13%
	SAP Certified Application Associate - Logistics Execution and Warehouse Management	Operations Management and Supervision			Supply Chain Managers	\$113,110	1,794	26%
					Transportation, Storage, and Distribution Managers	\$89,045	965	31%
					Purchasing Managers	\$121,722	497	14%
	Certified Billing and Coding Specialist	General Office Occupations and Clerical Services	Business/Commerce, General	Public Administration	Purchasing Agents, Except Wholesale, Retail, and Farm Products	\$64,293	2,727	9%
	Cargo Shipper's Agent	Business Administration and Management, General			WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES			
Additional industry based certification information is available from the TEA CTE website.					Exploration Activities: SkillsUSA, FBA, FBLA, or Technology Student Association	Work Based Learning Activities: Intern at a distribution or warehousing center.		
For more information on postsecondary options for this program of study, visit TXCTE.org.								

Associates Degree in Logistics and Supply Chain Management

Level I Certificate in Warehouse Management could be completed in the first two years of coursework.

College Credit Opportunity – Tarrant County College

Crowley ISD offers dual credit courses to achieve an associate's degree in Logistics and Supply Chain Management. These courses are offered through Tarrant County College and tuition is waived. Students must be enrolled in Tarrant County College. Please refer to the College Credit section of this guide or visit <https://www.crowleyisdtx.org/Domain/1009> for more information.