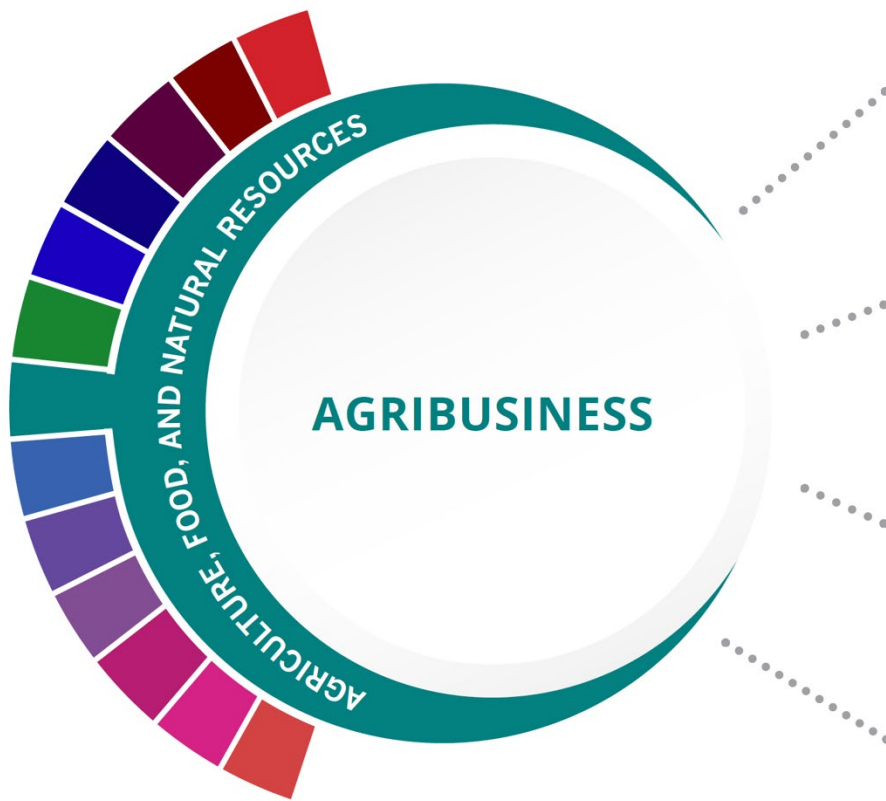


# 2021-2022



## Career & Technical Education



**Level 1** Principles of Agriculture, Food, and Natural Resources

**Level 2** Professional Standards in Agribusiness (.5)  
Professional Communications (.5)

**Level 3** Agribusiness Management and Marketing/Lab

**Level 4** Practicum in Agriculture, Food, and Natural Resources

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
	Certified Professional Public Buyer	Agricultural Business and Management, General	Agricultural Business and Management, General	Agricultural Business and Management, General
		Banking and Financial Support Services	Finance, General	Finance, General
		Advertising	Financial Mathematics	Financial Mathematics
		Marketing/Marketing Management, General	Marketing/Marketing Management, General	Marketing/Marketing Management, General

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
Farmers, Ranchers, and Other Agricultural Managers	\$59,134	405	9%
Farm and Ranch Loan Officers	\$45,594	268	25%
Buyers and Purchasing Agents, Farm Products	\$46,488	102	20%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Tour a farm machinery products company Texas FFA	Internship with a farm machinery products company; Work on a farm or ranch FFA Supervised Agriculture Experience (SAE)

The Agribusiness program of study explores the occupations and educational opportunities associated with the business of farming and agriculturally related business that supplies farm inputs, such as machinery and seeds. This program of study may also include exploration into the marketing of farm products, the purchase of farm products either for further processing or resale and grading or classifying unprocessed food or other agricultural products.



The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

Successful completion of the Agribusiness program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020

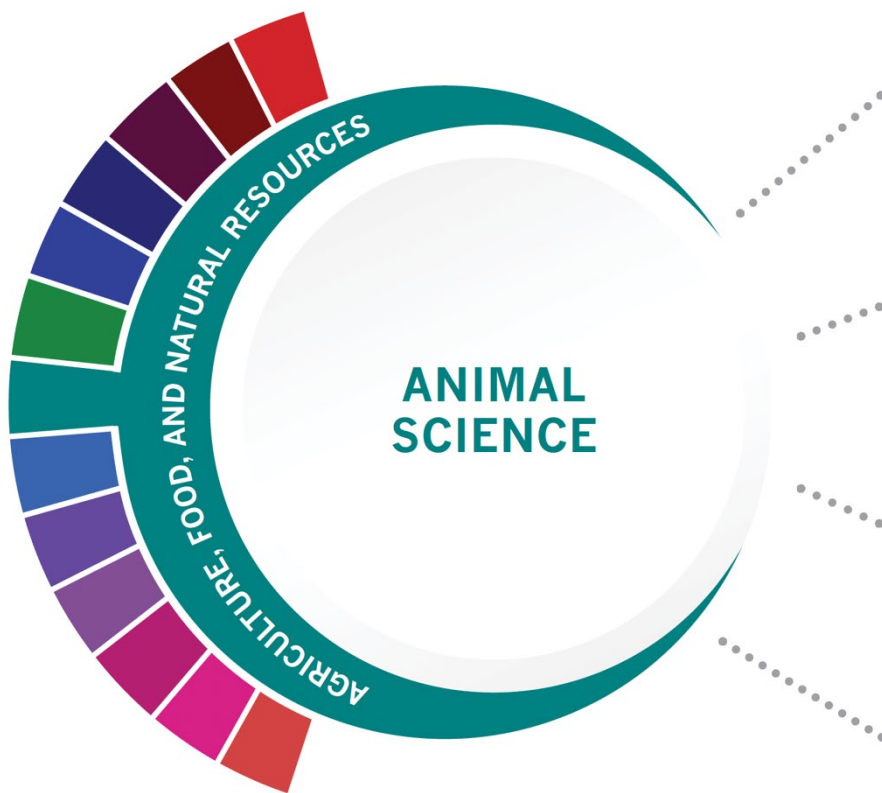
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	None	9-12
Professional Standards in Agribusiness	13000800 (.5 credit)	None	10-12
Professional Communications	13009900 (.5 credit)	None	9-12
Agribusiness Management and Marketing/Lab	13000900 (1 credit) 13000910 (2 credits)	None	10-12
Practicum in Agriculture, Food, and Natural Resources	13002500 (2 credits) 13002505 (3 credits) 13002510 (2 credits) 13002515 (3 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE AGRICULTURE, FOOD, AND NATURAL RESOURCE CAREER CLUSTER, PLEASE  
CONTACT:

Les Hudson | Les.Hudson@tea.texas.gov

<https://tea.texas.gov/cte>



<b>Level 1</b>	Principles of Agriculture, Food, and Natural Resources
<b>Level 2</b>	Small Animal Management (.5) Equine Science (.5)
<b>Level 3</b>	Livestock Production/Lab
<b>Level 4</b>	Advanced Animal Science

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Licensed Veterinary Technician	Pet Groomer	Food Science and Technology	Animal Sciences	Genetics
Feedyard Technician in Cattle Care and Handling	Veterinary Technician	Veterinary Studies	Agriculture	Veterinary Medicine
Certified Veterinary Assistant	Licensed Breeder	Biotechnology Laboratory Technician	Biology	Biological and Physical Sciences
OSHA 30 Hour General Industry		Biology Technician	Zoology/ Animal Biology	Biological and Biomedical Sciences

Occupations	Median Wage	Annual Openings	% Growth
Animal Breeders	\$39,135	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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Texas FFA	Agri-Science Fair 4H Volunteer at a local farm or veterinary office FFA Supervised Agriculture Experience (SAE)

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.

The Animal Science program of study focuses on the science, research, and business of animals and other living organisms. It teaches CTE learners 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 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.



The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

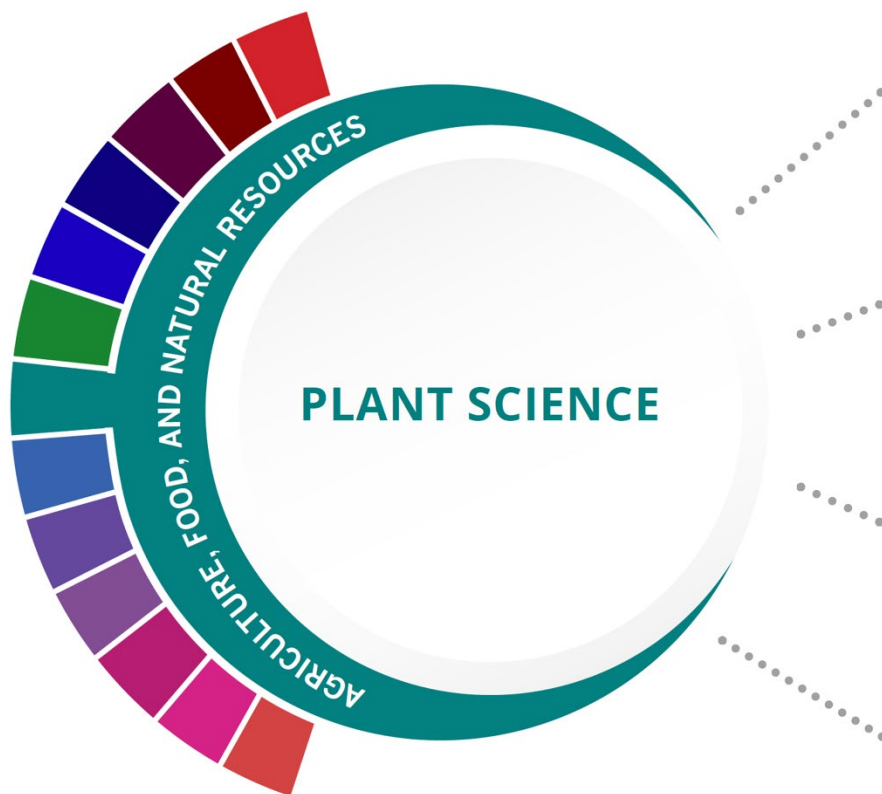
Successful completion of the Animal Science program of study will fulfill requirements of a Business and Industry endorsement or STEM endorsement if the math and science requirements are met. Revised - July 2020

# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	None	9-12
Small Animal Management	13000400 (0.5 credit)	None	10-12
Equine Science	13000500 (0.5 credit)	None	10-12
Livestock Production/Lab	13000300 (1 credit) 13000310 (2 credits)	None	10-12
Advanced Animal Science	13000700 (1 credit)	PREQ: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production;	11-12

FOR ADDITIONAL INFORMATION ON THE AGRICULTURE, FOOD, AND NATURAL RESOURCE CAREER CLUSTER, PLEASE CONTACT:

Les Hudson | Les.Hudson@tea.texas.gov  
<https://tea.texas.gov/cte>



**Level 1** Principles of Agriculture, Food, and Natural Resources

**Level 2** Horticultural Science/Lab

**Level 3** Floral Design/Lab

**Level 4** Advanced Floral Design  
Environmental Plant and Soil Science (Advanced Plant and Soil Science)

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Landscape Irrigation Technician License	Pesticide Applicator	Applied Horticulture/Horticulture Operations, General	Applied Horticulture/Horticulture Operations, General	Applied Horticulture/Horticulture Operations, General
Commercial/Noncommercial Pesticide Applicator	Certified Floral Designer	Ornamental Horticulture	Agronomy and Crop Science	Agronomy and Crop Science
Texas State Floral Association Level One Floral Certification	Accredited Member of AIFD	Agricultural Business and Management, General	Agricultural Business and Management, General	Agricultural Business and Management, General
Texas State Floral Association Level Two Floral Certification	Landscape Industry Certified Technician	Turf and Turfgrass Management	Turf and Turfgrass Management	Farm/Farm and Ranch Management

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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Texas FFA	Work part-time at a florist; start or work for a local landscaping business FFA Supervised Agriculture Experience (SAE)

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](http://TXCTE.org).

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.



The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life—food, water, land, and air. This career cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist. It also includes non-traditional agricultural occupations like wind energy, solar energy, and oil and gas production.

Successful completion of the Plant Science program of study will fulfill requirements of a Business and Industry endorsement or STEM endorsement if the math and science requirements are met. Revised - July 2020

# COURSE INFORMATION

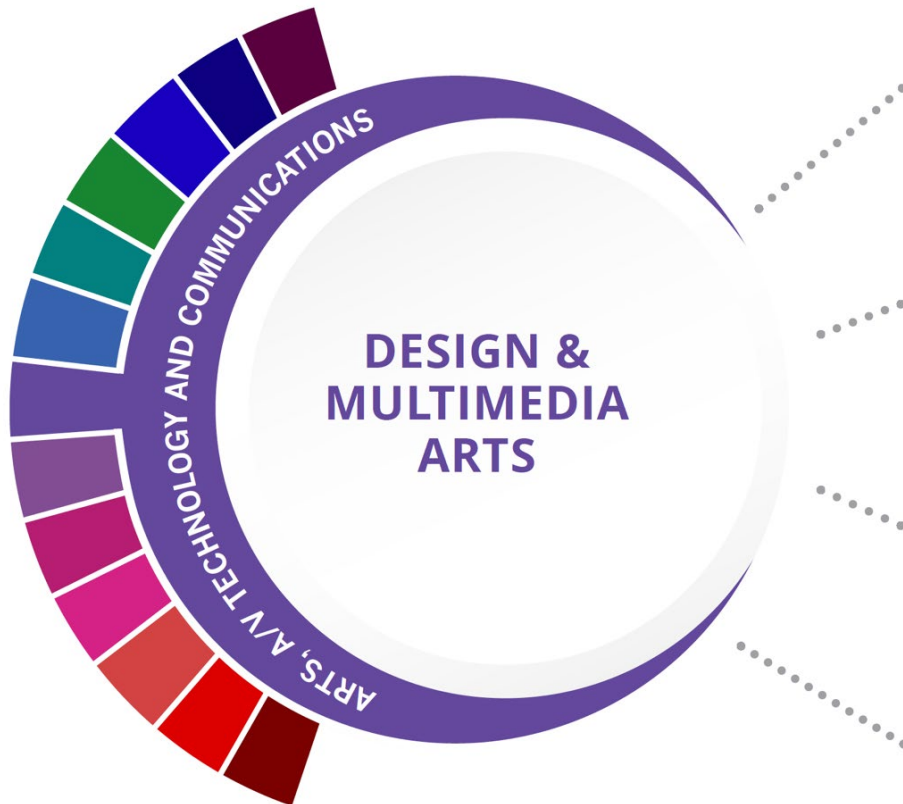
COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	None	9-12
Horticultural Science/Lab	13002000 (1 credit) 13002010 (2 credits)	None	10-12
Floral Design/Lab	13001800 (1 credit) 13001810 (2 credits)	None	9-12
Advanced Floral Design	N1300270 (1 credit)	PREQ: Floral Design	11-12
Environmental Plant and Soil Science (Advanced Plant and Soil Science)	13002100 (1 credit)	None	11-12

FOR ADDITIONAL INFORMATION ON THE AGRICULTURE, FOOD, AND NATURAL RESOURCE CAREER CLUSTER, PLEASE CONTACT:

Les Hudson | [Les.Hudson@tea.texas.gov](mailto:Les.Hudson@tea.texas.gov)

<https://tea.texas.gov/cte>

(District) offers career and technical education programs in (types of programs offered). Admission to these programs is based on (admission standards). It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended. It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended. (District) will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs. For information about your rights or grievance procedures, contact the Title IX Coordinator at (physical address of Coordinator) (email address of Title IX Coordinator), (phone number of Title IX Coordinator), and the Section 504 Coordinator at (physical address of Coordinator), (email address of Section 504 Coordinator), (phone number of Section 504 Coordinator)



### Level 1

Digital Design and Media Productions  
Principles of Arts, A/V Technology, and Communications

### Level 2

Commercial Photography I/Lab  
Graphic Design and Illustration I/Lab  
Video Game Programming

### Level 3

Advanced Video Game Programming  
Graphic Design and Illustration II/Lab  
Commercial Photography II/Lab

### Level 4

Career Preparation I  
Practicum in Graphic Design and Illustration  
Practicum in Commercial Photography

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Adobe Certified Associate Certifications	Certified Digital Designer	Animation, Interactive Technology, Video Graphics and Special Effects	Animation, Interactive Technology, Video Graphics and Special Effects	Animation, Interactive Technology, Video Graphics and Special Effects
Adobe Certified Expert Certifications	WOW Certified Web Designer Apprentice	Graphic Design	Graphic Design	Graphic Design
Apple Logic Pro X	Adobe Suite Certifications	Game and Interactive Media Design	Game and Interactive Media Design	Intermedia/Multimedia

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](http://TXCTE.org).

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

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Join a website development or coding club. Participate in SkillsUSA or TSA	Intern with a multimedia or animation studio. Obtain a certificate or certification in graphic design.

The Design and Multimedia Arts program of study explores the occupations and educational opportunities associated with designing or 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.



The Arts, A/V Technology and Communications (AAVTC) Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC career cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication.

Successful completion of the Design & Multimedia Arts program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020





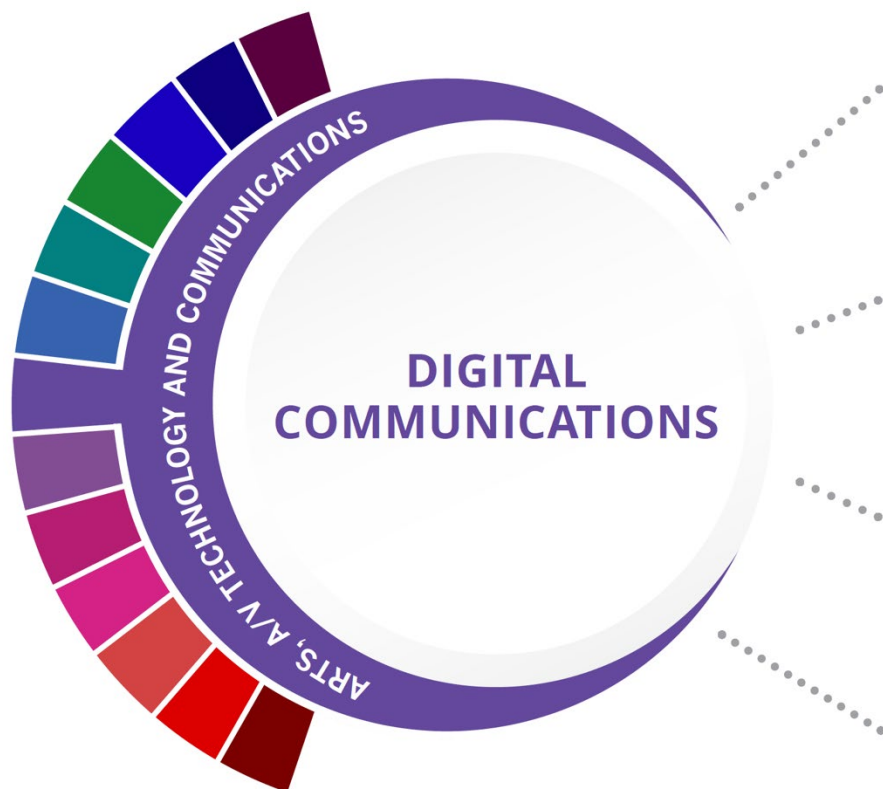
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Arts, A/V Technology, and Communications	13008200 (1 credit)	None	9
Digital Design and Media Production	03580400 (1 credit)	None	9-12
Video Game Programming	N1300994 (1 credit)	None	10-12
Commercial Photography I/Lab	13009100 (1 credit) 13009110 (2 credits)	None	9-12
Graphic Design and Illustration I /Lab	13008800 (1 credit) 13008810 (2 credits)	None	10-12
Advanced Video Game Programming	N1300995 (1 credit)	None	10-12
Commercial Photography II/Lab	13009200 (1 credit) 13009210 (2 credit)	None	10-12
Graphic Design and Illustration II/Lab	13008900 (1 credit) 13008910 (2 credits)	PREQ: Graphic Design and Illustration I	10-12
Practicum in Commercial Photography	13009250 (2 credits) 13009255 (3 credits) 13009260 (2 credits) 13009265 (3 credits)	PREQ: Commercial Photography I and Commercial Photography I Lab.	10-12
Career Preparation I	12701300 (2 credits) 12701305 (3 credits)	None	11-12
Practicum in Graphic Design and Illustration	13009000 (2 credits) 13009005 (3 credits) 13009010 (2 credits) 13009015 (3 credits)	PREQ: Graphic Design and Illustration II and Graphic Design and Illustration II Lab	10-12

FOR ADDITIONAL INFORMATION ON THE ARTS, AUDIO/VIDEO, TECHNOLOGY, AND COMMUNICATIONS CAREER CLUSTER, PLEASE CONTACT:

Avery Barrera | Avery.Barrera@tea.texas.gov

<https://tea.texas.gov/cte>



- Level 1** Principles of Arts, A/V Technology, and Communications
- 
- Level 2** Audio/Video Production I/Lab  
Digital Audio Technology I
- 
- Level 3** Audio Video Production II/Lab  
Digital Audio Technology II
- 
- Level 4** Practicum of Audio/Video Production
- 

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Apple Final Cut Pro X	Certified Video Engineer	Recording Arts Technology/Technician	Recording Arts Technology/Technician	Communications Technology/Technician
Apple Logic Pro X	Commercial Audio Technician	Cinematography and Film/Video Production	Cinematography and Film/Video Production	Cinematography and Film/Video Production
Adobe Certified Associate Premiere Pro	Certified AM Directional Specialist	Radio and Television Broadcasting Technology/Technician	Radio and Television	Radio and Television
Adobe Certified Associate Certifications	Certified Broadcast Radio Engineer	Music Technology	Agricultural Communication/Journalism	Agricultural Communication/Journalism

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](http://TXCTE.org).

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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Shadow a production team Participate in SkillsUSA or TSA	Intern at a local television station or video production company Work with a local company on a project

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.



The Arts, A/V Technology and Communications (AAVTC) Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services. Careers in the AAVTC career cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication.

Successful completion of the Digital Communications program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020

# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Arts, A/V Technology, and Communications	13008200 (1 credit)	None	9
Audio/Video Production I/Lab	13008500 (1 credit) 13008510 (2 credits)	None	10-12
Audio Video Production II/Lab	13008600 (1 credit) 13008610 (2 credits)	PREQ: Audio/Video Production I	10-12
Practicum of Audio/Video Production	13008700 (2 credits) 13008705 (3 credits) 13008710 (2 credits) 13008715 (3 credits)	PREQ: Audio/Video Production II/Lab	11-12

FOR ADDITIONAL INFORMATION ON THE ARTS, AUDIO/VIDEO, TECHNOLOGY, AND COMMUNICATIONS CAREER CLUSTER, PLEASE CONTACT:

Avery Barrera | Avery.Barrera@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Principles of Business, Marketing, and Finance

**Level 2** Business Information Management I/Lab

**Level 3** Business Information Management II/Lab

**Level 4** Career Preparation I

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE / LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Microsoft Office Specialist or Expert - Excel	Certified Records Manager	Business Administration	Business Administration	Business Administration
Microsoft Office Specialist or Expert - Word	Certified Facility Manager	Business/Commerce	Business/Commerce	Business Management
Google Cloud Certified Professional – G-Suite	Certified Commercial Contracts Manager	Public Administration	Public Administration	Public Administration
Certified Associate in Project Management	Teradata 14 Basics/ Certified Technical Specialist	Business Management	Management Science	Management Science

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%
Operations Research Analysts	\$78,083	1,128	38%
Supervisors of Administrative Support Workers	\$57,616	14,982	20%

#### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Business Professional of America (BPA), Future Business Leaders of America (FBLA), and DECA	Internship with local business or chamber of commerce

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.

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



The Business, Marketing, and Finance Career Cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.

Successful completion of the Business Management program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020



# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Business, Marketing, and Finance	13011200 (1 credit)	None	9-11
Business Information Management I/Lab	13011400 (1 credit) 13011410 (2 credits)	None	9-12
Business Information Management II/Lab	13011500 (1 credit) 13011510 (2 credits)	PREQ: Business Information Management I	10-12
Career Preparation I	12701300 (2 credits) 12701305 (3 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE BUSINESS, MARKETING, AND FINANCE CAREER CLUSTER, PLEASE CONTACT:

Dale Fowler | Dale.Fowler@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Principles of Business, Marketing, and Finance

**Level 2** Sports and Entertainment Marketing (.5)  
Social Media Marketing (.5)

**Level 3** Advertising (.5)  
Sports and Entertainment Marketing II (.5)

**Level 4** Career Preparation I

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE / LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Microsoft Office Specialist or Expert - Excel	Certified Product Manager	Marketing/ Marketing Management, General	Marketing/ Marketing Management, General	Marketing
Microsoft Office Specialist or Expert - Word	DMA Certified Marketing Professional	Consumer Merchandising/ Retailing Management	Business Administration	Business Administration
Google Analytics Individual Qualification	Certified Salesperson	International Marketing	Applied Economics	Applied Economics
Entrepreneurship and Small Business	Real Estate Appraiser	Business	Marketing Research	Advertising

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
Marketing Research Analysts and Marketing Specialists	\$70,346	4,664	40%
Insurance Sales Agents	\$43,181	5,886	30%
First-Line Supervisors of Retail Sales Workers	\$72,550	2,826	15%
Wholesale and Retail Buyers	\$51,106	1,229	19%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Business Professionals of America (BPA), Future Business Leaders of America (FBLA), and DECA	Internship with local marketing firm; shadow a real estate agent; operate a school store on campus

The Marketing and Sales program of study teaches CTE learners how to collect information to determine potential sales of a product or service and/or create a marketing campaign to market or distribute goods and services. Through this program of study, students will learn the skills necessary to understand and apply data on customer demographics, preferences, needs, and buying habits.



The Business, Marketing, and Finance Career Cluster focuses on careers in planning, organizing, directing, and evaluating business functions essential to efficient and productive business operations.

Successful completion of the Marketing and Sales program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020



# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Business, Marketing, and Finance	13011200 (1 credit)	None	9-11
Sports and Entertainment Marketing	13034600 (.5 credit)	None	9-12
Social Media Marketing	13034650 (.5 credit)	None	9-12
Advertising	13034200 (.5 credit)	None	9-12
Sports and Entertainment Marketing II	N1303422 (.5 credit)	PREQ: Sports and Entertainment Marketing	10-12
Career Preparation I	12701300 (2 credits) 12701305 (3 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE BUSINESS, MARKETING, AND FINANCE CAREER CLUSTER, PLEASE CONTACT:

Dale Fowler | Dale.Fowler@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Principles of Education and Training

**Level 2** Child Development

**Level 3** Instructional Practices (RST 1)

**Level 4** Instructional Practices (RST 2)

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Educational Aide I	Texas Educator Certification Program	Teacher Education	Bilingual and Multilingual Education	Instruction and Learning
	Educational Instructional Technology	Education, General (or specific subject area)	Education, General (or specific subject area)	Educational Leadership and Administration, General
	Counselor, Professional	Special Education	Special Education	Special Education
	Athletic Trainer	Health and Physical Education/ Fitness	Health and Physical Education/ Fitness	Social and Philosophical Foundations of Education

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%

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.

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Texas Association of Future Educators, or Family, Career and Community Leaders of America	Teach a community education class; intern as a teaching assistant or tutor; serve as a camp counselor.

The Teaching and Training program of study prepares CTE learners for careers related to teaching, instruction, and creation of instructional and enrichment materials. The program of study introduces CTE learners to 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.



The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services. All parts of courses are designed to introduce learners to the various careers available within the Education and Training career cluster.

Successful completion of the Teaching and Training program of study will fulfill requirements of the Public Service Endorsement. Revised - July 2020



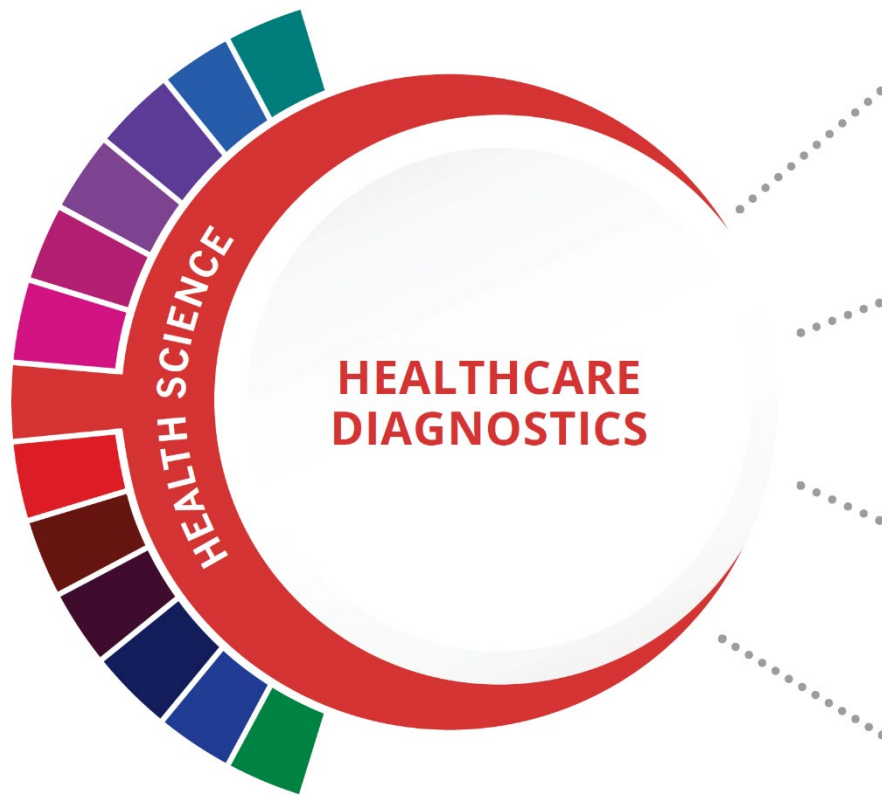
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Education and Training	13014200 (1 credit)	None	9-10
Child Development	13024700 (1 credit)	None	10-12
Instructional Practices (RST1)	13014400 (2 credits)	None	11-12
Instructional Practices (RST 2)	13014400 (2 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE EDUCATION AND TRAINING CAREER CLUSTER, PLEASE CONTACT:

Debbie Wieland | [Debbie.Wieland@tea.texas.gov](mailto:Debbie.Wieland@tea.texas.gov)

<https://tea.texas.gov/cte>



**Level 1** Principles of Health Science

**Level 2** Medical Terminology

**Level 3** Health Science Theory  
Medical Microbiology

**Level 4** Anatomy and Physiology

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Limited Licensed Radiology Technologist	Medical Sonographer	Nuclear Medical Technology/ Technologist	Nuclear Medical Technology/ Technologist	Radiologist
EKG/ECG Technician	Radiologic Technologist	Magnetic Resonance Imaging (MRI) Technology/ Technician	Medical Radiologic Technology/ Science - Radiation Therapist	Radiologic Technology/ Science - Radiographer
Medical Laboratory Technician				
Phlebotomy Technician				

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](http://TXCTE.org).

Occupations	Median Wage	Annual Openings	% Growth
Diagnostic Medical Sonographers	\$69,909	495	35%
Phlebotomists	\$30,597	1442	36%
Nuclear Medicine Technologists	\$75,962	91	13%
Radiologic Technologists	\$55,494	1196	19%
Magnetic Resonance Imaging Technologists	\$68,661	217	21%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Health Occupation Students of America (HOSA)	Clinical rotations at a community wellness center, hospital, assisted living, nursing home

The Healthcare Diagnostics program of study introduces students to occupations and education opportunities related to performing complex medical laboratory tests for the diagnosis, treatment, and prevention of disease. This program of study may also include exploration into the opportunities associated with blood laboratories as well as radiologic technology and ultrasound technology.



The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Diagnostics program of study will fulfill requirements of the Public Service or STEM Endorsement if the math and science requirements are met. Revised- July 2020

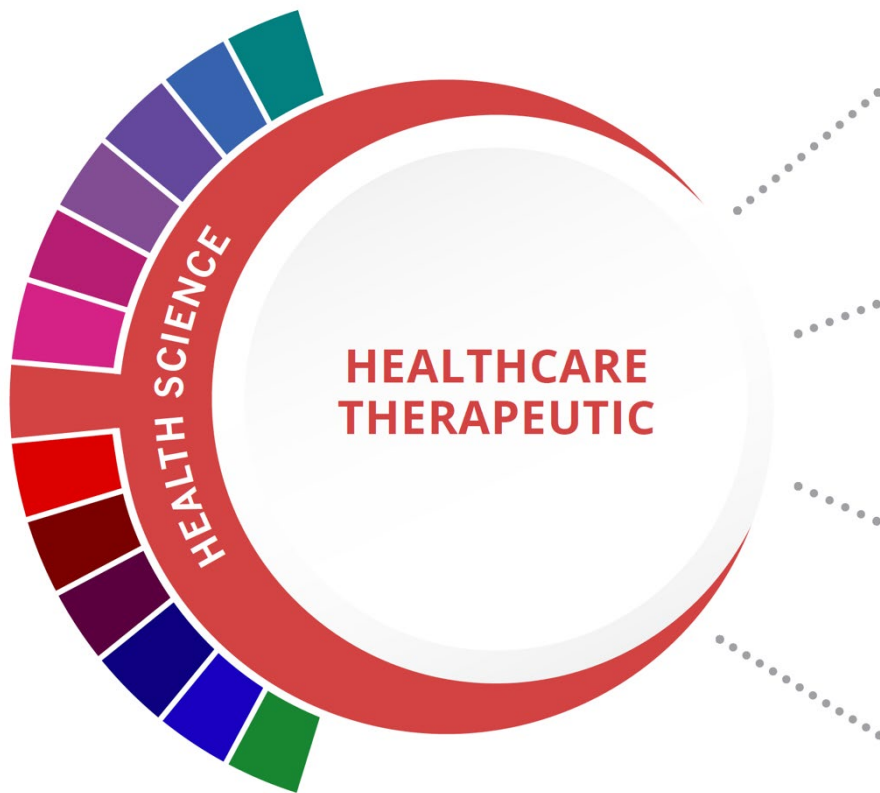
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Health Science	13020200 (1 credit)	None	9-10
Medical Terminology	13020300 (1 credit)	None	9-12
Health Science Theory	13020400 (1 credit) 13020410 (2 credits)	PREQ: Biology	10-12
Medical Microbiology	13020700 (1 credit)	PREQ: Biology and Chemistry	10-12
Anatomy and Physiology	13020600 (1 credit)	PREQ: Biology and a second science credit	10-12

FOR ADDITIONAL INFORMATION ON THE HEALTH SCIENCE CAREER CLUSTER, PLEASE CONTACT:

Kevin Johnson | [Kevin.Johnson@tea.texas.gov](mailto:Kevin.Johnson@tea.texas.gov)

<https://tea.texas.gov/cte>



**Level 1** Principles of Health Science

**Level 2** Medical Terminology

**Level 3** Health Science Theory  
Medical Microbiology  
Pharmacology (Pharmacy Tech)

**Level 4** Anatomy and Physiology  
Practicum in Health Science

- Dental
- EKG
- EMT
- PCT
- Pharmacy Tech

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Registered Dental Assistant	Dental Assistant	Dental Hygienist	Dental Hygienist	Dentist
Certified Patient Care Technician	Surgical Technologist	Medical/ Clinical Assistant		Physician Assistant
Certified Nurse Aide/Assistant	Medical Assistant			Family and General Practitioners
Pharmacy Technician	Pharmacy Aides			Pharmacist
Emergency Medical Technician - Basic	Emergency Medical Technician - Basic	Emergency Medical Technology/ Technician (EMT Paramedic)	Emergency Medical Technology/ Technician (EMT Paramedic)	

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%
Dental Assistants	\$34,840	4,422	31%
Emergency Medical Technicians	\$34,091	1,880	31%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
SkillsUSA Health Occupation Students of America (HOSA) Attend local emergency awareness events, Texas Public Service Association	Volunteer at a community wellness center, hospital, assisted living, or nursing home.

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.

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 also includes an introduction to the opportunities associated with providing treatment and counsel to patients as well as rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.



The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, communicate effectively, and work well with others.

Successful completion of the Healthcare Therapeutic program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised - July 2020

# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Health Science	13020200 (1 credit)	None	9-10
Medical Terminology	13020300 (1 credit)	None	9-12
Health Science Theory	13020400 (1 credit) 13020410 (2 credits)	PREQ: Biology	10-12
Pharmacology	13020950 (1 credit)	PREQ: Biology and Chemistry	11-12
Medical Microbiology	13020700 (1 credit)	PREQ: Biology and Chemistry	10-12
Anatomy and Physiology	13020600 (1 credit)	PREQ: Biology and a second science credit	10-12
Practicum in Health Science	13020500 (2 credits) 13020505 (3 credits) 13020510 (2 credits) 13020515 (3 credits)	PREQ: Health Science Theory and Biology	11-12

FOR ADDITIONAL INFORMATION ON THE HEALTH SCIENCE CAREER CLUSTER, PLEASE CONTACT:

Kevin Johnson | Kevin.Johnson@tea.texas.gov

<https://tea.texas.gov/cte>



## Level 1

## Level 2

Introduction to Cosmetology

## Level 3

Cosmetology I/ Lab  
Barbering I

## Level 4

Cosmetology II/ Lab  
Barbering II

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Cosmetology Operator License	Certified Aesthetic Laser Operator	Cosmetology/ Cosmetologist, General		
Cosmetology Esthetician Specialty License	Cosmetologist	Aesthetician/ Esthetician and Skin Care Specialist		
Cosmetology Manicurist Specialty License	Certified Spa Supervisor	Salon/Beauty Salon Management/ Manager		
Barber Operating License	Nail Technician/ Specialist and Manicurist	Cosmetology, Barber/Styling and Nail Instructor		

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%

## WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participation in a Career and Technical Student Organization such as TIVA, or SKILLS USA	Job shadow a cosmetologist Work part-time at a beauty salon, spa, or barbershop

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.

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.



The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

Successful completion of the Cosmetology and Personal Care Services regional program of study will fulfill requirements of the Public Service Endorsement. See the regions approved to offer this program of study at <https://tea.texas.gov/academics/college-career-and-military-prep/career-and-technical-education/regional-programs-of-study>. Revised - July 2020.

# COURSE INFORMATION

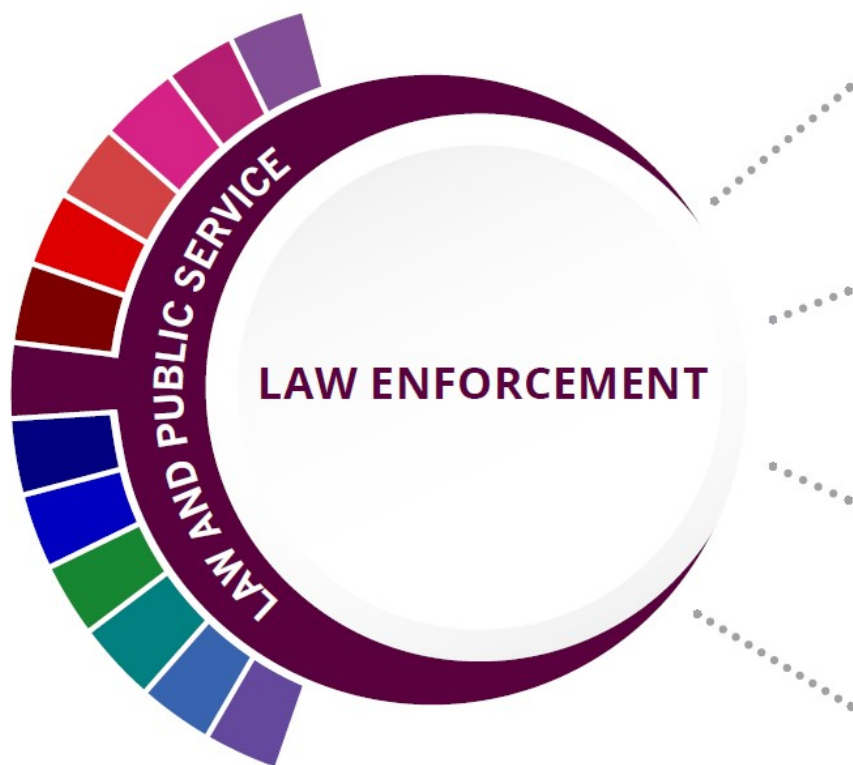
COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Introduction to Cosmetology	13025100 (1 Credit)	None	10
Cosmetology I/Lab	13025200 (2 credits) 13025210 (3 credits)	None	10-11
Barbering I	N1302534 (3 Credits)	None	10-12
Cosmetology II/Lab	13025300 (2 credits) 13025310 (3 credits)	PREQ: Cosmetology I	11-12
Barbering II	N1302535 (3 Credits)	PREQ: Barbering I	10-12

FOR ADDITIONAL INFORMATION ON THE HUMAN SERVICES CAREER CLUSTER, PLEASE CONTACT:

Debbie Wieland | [Debbie.Wieland@tea.texas.gov](mailto:Debbie.Wieland@tea.texas.gov)

<https://tea.texas.gov/cte>

(District) offers career and technical education programs in (types of programs offered). Admission to these programs is based on (admission standards). It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended. It is the policy of (District) not to discriminate on the basis of race, color, national origin, sex, handicap, or age in its employment practices as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; the Age Discrimination Act of 1975, as amended; and Section 504 of the Rehabilitation Act of 1973, as amended. (District) will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs. For information about your rights or grievance procedures, contact the Title IX Coordinator at (physical address of Coordinator) (email address of Title IX Coordinator), (phone number of Title IX Coordinator), and the Section 504 Coordinator at (physical address of Coordinator), (email address of Section 504 Coordinator), (phone number of Section 504 Coordinator)



**Level 1** Principles of Law, Public Safety, Corrections, and Security

**Level 2** Law Enforcement I

**Level 3** Law Enforcement II

**Level 4** Forensic Science  
Corrections, and Security

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Non-Commissioned Security Officer Level II	Law Enforcement Officer	Criminal Justice/Safety Studies/Law Enforcement Administration	Criminal Justice/Safety Studies/Law Enforcement Administration	Criminal Justice/Safety Studies/Law Enforcement Administration
Emergency Telecommunicator	Private Investigator/ Security Guard	Criminal Justice/ Police Science	Criminal Justice/ Police Science	Natural Resources Law Enforcement and Protective Services
	Code Enforcement Officer	Corrections	Juvenile Corrections	
	Certified Law Enforcement Planner	Criminalistics and Criminal Science	Cyber/ Computer Forensics and Counterterrorism	

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
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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Texas Public Service Association; criminal justice clubs	Attend court hearings and other legal procedures

The Law Enforcement program of study teaches CTE learners about the development of, adherence to, and protection of various branches of law. Students will 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.



The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, and homeland security, including professional and technical support services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of fire and emergency services.

Successful completion of the Law and Public Service program of study will fulfill requirements of the Public Service Endorsement. Revised - July 2020



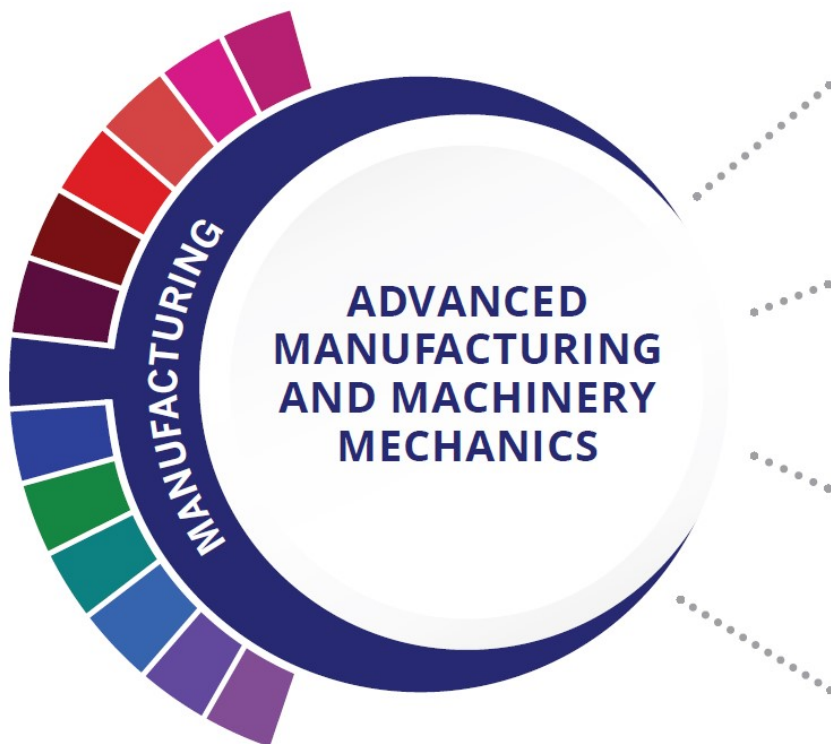
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Law, Public Safety, Corrections, and Security	13029200 (1 credit)	None	9-12
Law Enforcement I	13029300 (1 credit)	None	10-12
Law Enforcement II	13029400 (1 credit)	None	10-12
Correctional Services	13029700 (1 credit)	None	10-12
Forensic Science	13029500 (1 credit)	PREQ: Biology and Chemistry	11-12

FOR ADDITIONAL INFORMATION ON THE LAW AND PUBLIC SERVICE CAREER CLUSTER, PLEASE CONTACT:

Dale Fowler | Dale.Fowler@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Principles of Applied Engineering

**Level 2** Robotics I

**Level 3** Robotics II

**Level 4** Career Preparation I

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
FANUC Robot Operator 1	Engineer, Professional	Electro-mechanical Engineering/Technology	Electrical Engineering	Electrical Engineering
Mastercam Associate Level Certification	Certified Quality Technician	Certified Quality Technician	Industrial Engineering	Industrial Engineering
NCCER Industrial Maintenance Mechanic	Plant Maintenance Technologist	Industrial Mechanics and Maintenance Technology	Mechanical Engineering	Mechanical Engineering
NIMS Industrial Technology Maintenance - Maintenance Operations				

Occupations	Median Wage	Annual Openings	% Growth
Electro-Mechanical Assemblers	\$30,160	951	9%
Electro-Mechanical Technicians	\$56,555	127	9%
Industrial Machinery Mechanics	\$49,816	3,788	27%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in SkillsUSA and local STEM events	Apprenticeship at a local business or industry American Welding Society

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](http://TXCTE.org).

The Advanced Manufacturing and Machinery Mechanics program of study focuses on the assembly, operation, maintenance, and repair of electromechanical equipment or devices. CTE learners may work in a variety of mechanical fields, gaining knowledge and experience in robotics, refinery and pipeline systems, deep ocean exploration, or hazardous waste removal. CTE concentrators may work in a variety of fields of engineering.



The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

Successful completion of the Advanced Manufacturing and Machinery program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised - July 2020

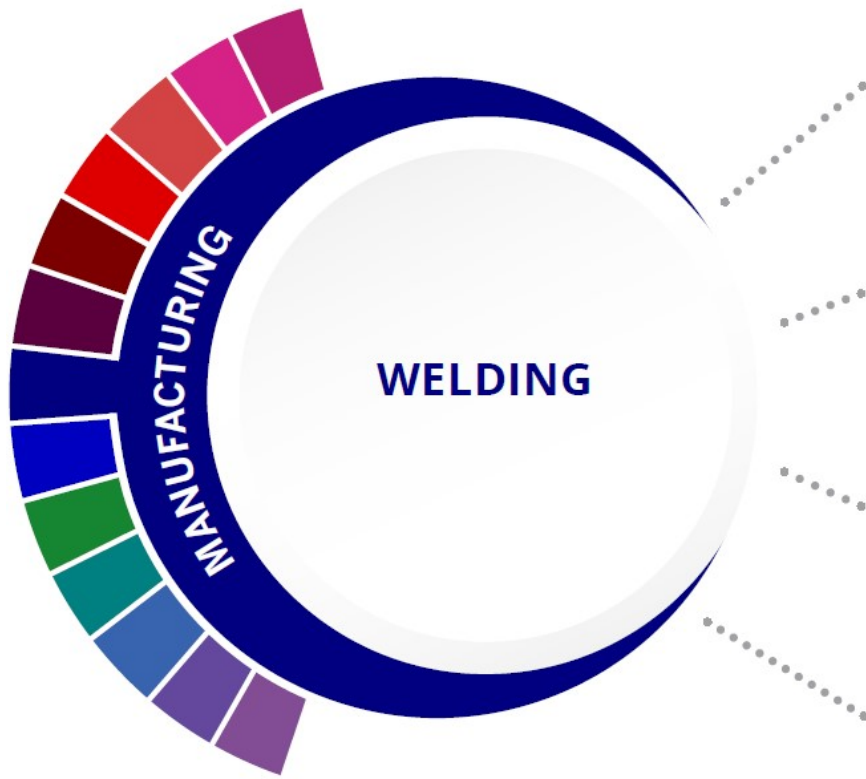
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Principles of Applied Engineering	13036200 (1 credit)	None	9-10
Robotics I	13037000 (1 credit)	None	9-10
Robotics II	13037050 (1 credit)	PREQ: Robotics I	10-12
Career Preparation I	12701300 (2 credits) 12701305 (3 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE MANUFACTURING CAREER CLUSTER, PLEASE CONTACT:

Jennifer Bullock | Jennifer.Bullock@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Introduction to Welding

**Level 2** Welding I

**Level 3** Welding II/Lab

**Level 4**

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
AWS Certified Welder, D1.1, D9.1	Certified Welder or Welder Inspector	Certified Welder or Welder Inspector	Welding Engineering Technology/ Technician	Welding Engineering Technology/ Technician
ASW SENSE Level 1	Machining Level 1 - CNC Milling: Programming Setup & Operations	Machine Shop Technology/ Assistant	Biomedical Technology/ Technician	Occupational Health and Industrial Hygiene
API 1104 Welding Certificate	Certified Welding Engineering	Operations Management and Supervision	Operations Management and Supervision	Operations Management and Supervision
NCCER Welding, Level 1	Certified Environmental, Safety, and Health Trainer	Occupational Safety and Health Technology/ Technician	Environmental Health	Environmental Health

Occupations	Median Wage	Annual Openings	% Growth
Welders, Cutters, Solderers, and Brazers	\$41,350	6,171	9%
Welding Soldering and Brazing Machine Setters, Operators and Tenders	\$40,040	280	9%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate and compete in SkillsUSA Job shadow a machinist	Apprenticeship at a local business or industry American Welding Society

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.

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



**The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.**

Successful completion of the Manufacturing Technology program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020

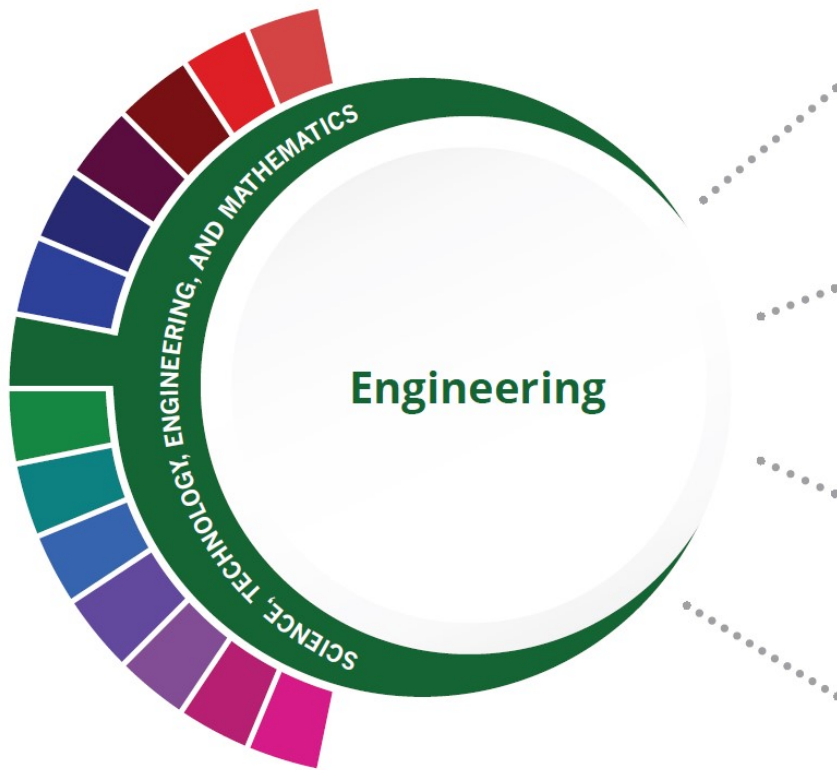
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Introduction to Welding	13032250 (1 credit)	None	9-12
Welding I	13032300 (2 credit)	None	10-12
Welding II/Lab	13032400 (2 credits) 13032410 (3 credits)	PREQ: Welding I	11-12

FOR ADDITIONAL INFORMATION ON THE MANUFACTURING CAREER CLUSTER, PLEASE CONTACT:

Jennifer Bullock | Jennifer.Bullock@tea.texas.gov

<https://tea.texas.gov/cte>



<b>Level 1</b>	Introduction to Engineering Design (PLTW)
<b>Level 2</b>	Engineering Science
<b>Level 3</b>	Engineering Design and Presentation I Aerospace Engineering (PLTW)
<b>Level 4</b>	Engineering Design and Presentation II Practicum in Information STEM

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Autodesk Certified Professional or User (ACU)-Inventor	Engineer, Professional	Electrical and Electronics Engineering	Electrical and Electronics Engineering	Electrical and Electronics Engineering
Certified SolidWorks Associate (CSWA)	Fluid Power Systems Designer	Drafting and Design Technology/Technician, General	CAD/CADD Drafting and/or Design Technology/Technician	Mechanical Engineering
Certified Engineering Technician-Audio Systems	Certified Biomedical Auditor	Engineering Technology	Bioengineering and Biomedical Engineering	Bioengineering and Biomedical Engineering
	Certified Cost Estimator/Analyst		Construction Engineering Technology/Technician	
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 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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
Participate in competitions like Skills USA	Engineering internship Job shadow a machinist

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



The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Engineering program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised - July 2020

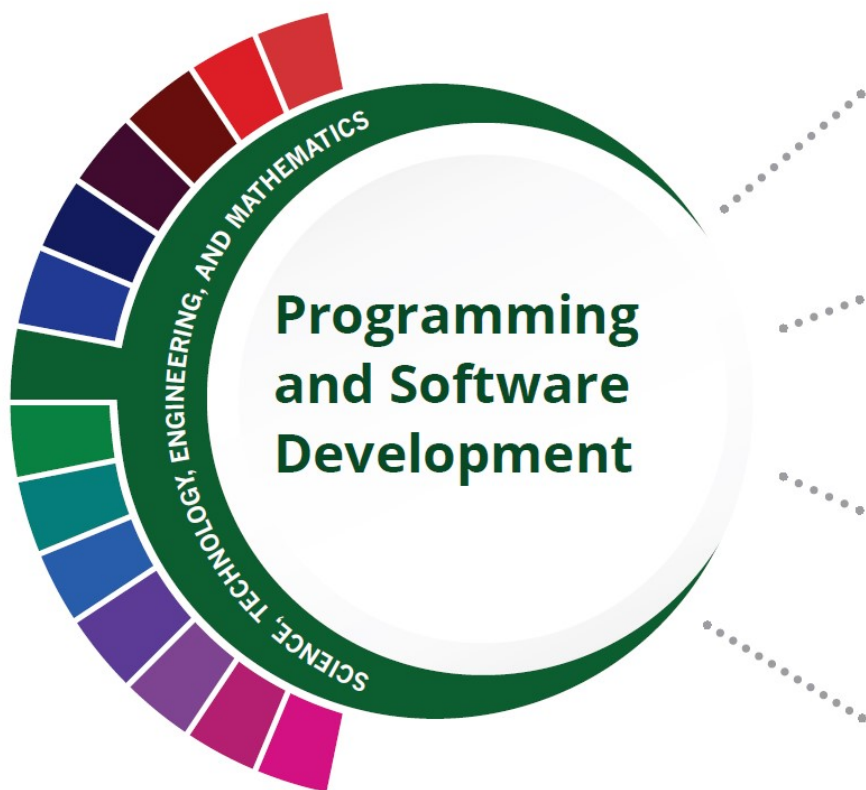
# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Introduction to Engineering Design (PLTW)	N1303742 (1 credit)	None	9-12
Engineering Design and Presentation I	13036500 (1 credit)	PREQ: Algebra I	10-12
Aerospace Engineering (PLTW)	N1303745 (1 credit)	None	9-12
Engineering Design and Presentation II	13036600 (2 credits)	PREQ: Algebra I and Geometry	11-12
Practicum in Science, Technology, Engineering, and Mathematics	13037400 (2 credits) 13037405 (3 credits) 13037410 (2 credits) 13037415 (2 credits)	PREQ: Algebra I and Geometry	12

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS CAREER CLUSTER,  
PLEASE CONTACT:

Jennifer Bullock | Jennifer.Bullock@tea.texas.gov

<https://tea.texas.gov/cte>



**Level 1** Fundamentals of Computer Science

**Level 2** Computer Science I

**Level 3** Computer Science II

**Level 4** Practicum in Information Technology

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Oracle Certified Association JAVA SE 8 Programmer	Certified Computing Professional	Computer Programming/ Programmer General	Management Information Systems, General	Computer Software Engineer
Oracle Certified Database Associate	Cloud Technology Associate Certification	Computer Software Engineer	Computer Software Engineer	Computer Science
Microsoft Technology Associate, Introduction to Programming Using Python, HTML or CSS	AEM 6 Developer	Computer Science	Computer Science	Information Science/ Studies
Microsoft Technology Associate, Introduction to Programming Using Java or JavaScript	Certified Software Analyst	Certified Software Analyst	Information Science/ Studies	

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

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Join TSA Participate in coding club at school	Obtain an industry-based certification.

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](http://TXCTE.org).

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 allow computer applications to run.



The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Programming and Software Development program of study will fulfill requirements of the Business and Industry and STEM endorsement if the math and science requirements are met. Revised - July 2020



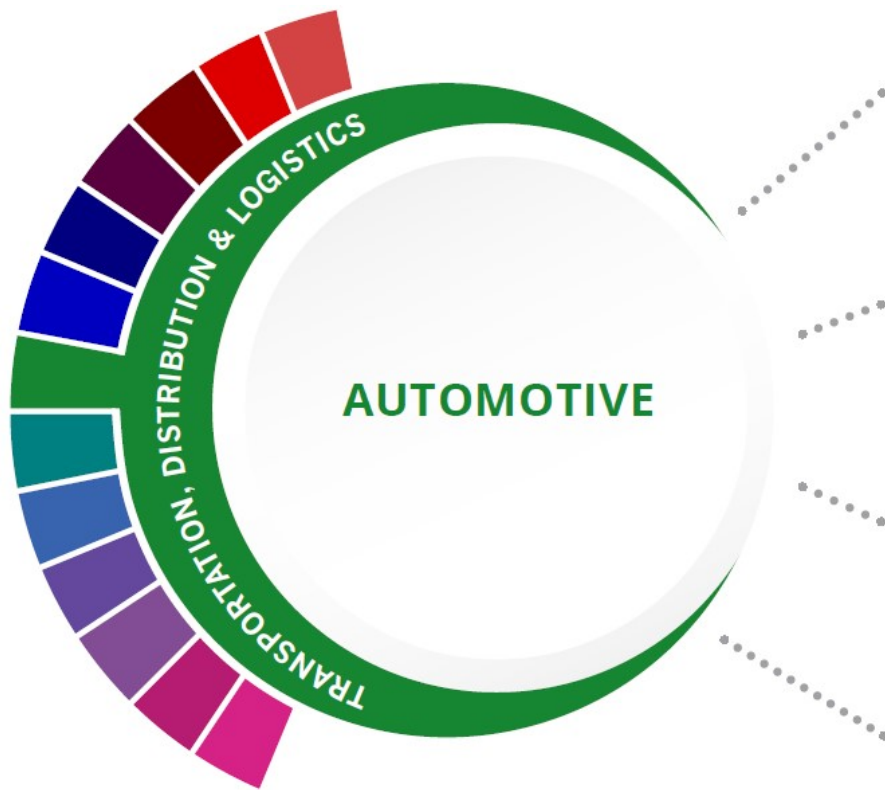
# COURSE INFORMATION



COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Fundamentals of Computer Science	03580140 (.5 to 1 credit)	None	9-12
Computer Science I	03580200 (.5 to 1 credit)	PREQ: Algebra I	9-12
Computer Science II	03580300 (1 credit)	PREQ: Algebra I, Computer Science I, or Fundamentals of Computer Science	11-12
Practicum in Information Technology	13028000 (2 credit) 13028005 (3 credit) 13028010 (2 credit) 13028015 (3 credit)	PREQ: Two high school information technology courses	12

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS CAREER CLUSTER,  
PLEASE CONTACT:

Laura Torres | [Laura.Torres@tea.texas.gov](mailto:Laura.Torres@tea.texas.gov)  
<https://tea.texas.gov/cte>



**Level 1** Automotive Basics

**Level 2** Automotive Technology I

**Level 3** Automotive Technology II/Lab

**Level 4** Practicum in Transportation Systems

HIGH SCHOOL/ INDUSTRY CERTIFICATION	CERTIFICATE/ LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/ DOCTORAL PROFESSIONAL DEGREE
Automotive Service Excellence (ASE) Entry Level	Master Collision Repair and Refinishing Technician	Autobody/ Collision and Repair Technology/ Technician		Mechanical Engineering
Automotive Service Excellence (ASE) Professional Level	Automobile Technician: various systems and parts	Medium/Heavy Vehicle and Truck Technology/ Technician		
	Engine Machinist Technician	Mechanical Engineering/ Mechanical Technology/ Technician	Mechanical Engineering/ Mechanical Technology/ Technician	
	Collision Repair and Refinish			

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%

### WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES

Exploration Activities:	Work Based Learning Activities:
SkillsUSA competition Automotive Service Association	Work at a local automotive repair or body shop.

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](http://TXCTE.org).

The Automotive program of study teaches CTE learners how to repair and refinish automobiles and service various types of vehicles. CTE learners 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.



The Transportation, Distribution, and Logistics Career Cluster focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Successful completion of the Automotive program of study will fulfill requirements of the Business and Industry Endorsement. Revised - July 2020

# COURSE INFORMATION

COURSE NAME	SERVICE ID	PREREQUISITS (PREQ) COREQUISITES (CREQ)	Grade
Automotive Basics	13039550 (1 credit)	None	9-12
Automotive Technology I	13039600 (2 credits)	None	9-12
Automotive Technology II/Lab	13039700 (2 credits) 13039710 (3 credits)	PREQ: Automotive Technology I: Maintenance and Light Repair	11-12
Practicum in Transportation Systems	13040450 (2 credits) 13040455 (3 credits) 13040460 (2 credits) 13040465 (3 credits)	None	11-12

FOR ADDITIONAL INFORMATION ON THE TRANSPORTATION, DISTRIBUTION, AND LOGISTICS CAREER CLUSTER, PLEASE  
CONTACT:

Kevin Johnson | Kevin.Johnson@tea.texas.gov  
<https://tea.texas.gov/cte>