



PROGRAMS OF STUDY

DISTRICT GUIDEBOOK

CCMR

College, Career, and Military Readiness
Laying the foundation of Postsecondary Readiness for ALL



Presented August 2023



CTE PROGRAMS OF STUDY EAST CENTRAL ISD

Updated August 2023



BUSINESS AND INDUSTRY ENDORSEMENT	
AGRICULTURE, FOOD AND NATURAL RESOURCES CLUSTER	
<p>Agri-Business</p> <ol style="list-style-type: none"> Principles of Agriculture, Food, & Natural Resources (1) Ag Leadership and Development 1 (Prof. Comm.) (1) Ag Leadership and Development 2 (Ag Mgmt & Mktg) (1) Ag Leadership and Development 3 (Ag Lead, Res. & Comm)(1) 	<p>Animal Science</p> <ul style="list-style-type: none"> Principles of Agriculture, Food, & Natural Resources (1) Small Animal Management (.5) and Equine Science (.5) Livestock Production (1) Veterinary Medical Applications w/ Lab(2) Advanced Animal Science (1)
<p>Applied Agricultural Engineering</p> <ol style="list-style-type: none"> Principles of Agriculture, Food, & Natural Resources (1) Agricultural Mechanics and Metal Tech (1) Ag Structures and Design w/Lab (2) Ag Equipment Design and Fab. w/Lab (2) 	<p>Plant Science</p> <ol style="list-style-type: none"> Principles of Agriculture, Food, & Natural Resources (1) Horticultural Science (1) Floral Design (1) Advanced Floral Design (1)
ARCHITECTURE & CONSTRUCTION CLUSTER	
<p>Architectural Design</p> <ol style="list-style-type: none"> Principles of Architecture (1) Architectural Design I (1) Architectural Design II (2) Practicum in Architectural Design (2) 	<p>Construction Management and Inspection</p> <ol style="list-style-type: none"> Principles of Construction (1) Construction Management I (1) Construction Management II (2) Practicum in Construction Management (2)
ARTS, A/V TECHNOLOGY, & COMMUNICATIONS CLUSTER	
<p>Digital Communications</p> <ol style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications(1) Audio/Video Production I (1) Audio/Video Production II (2) Practicum in Audio/Video Production (2) 	<p>Graphic Design and Multimedia Arts -Fashion Design</p> <ol style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications (1) Fashion Design I (1) Fashion Design II (2) Practicum in Entrepreneurship (2)
<p>Graphic Design and Multimedia Arts - Animation</p> <ol style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications (1) Animation I (1) Animation II (2) Practicum in Animation (2) 	<p>Graphic Design and Multimedia Arts -Graphic Design</p> <ol style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications (1) Graphic Design and Illustration I (1) Graphic Design and Illustration II (2) Practicum in Graphic Design and Illustration (2)
<p>Graphic Design and Multimedia Arts - Video Game</p> <ol style="list-style-type: none"> Principles of Arts, Audio/Video Technology, and Communications (1) Video Game Design (1) Video Game Programming (1) Advanced Video Game Programming (1) 	
BUSINESS, MARKETING AND FINANCE CLUSTER	
<p>Business Management</p> <ol style="list-style-type: none"> Principles of Business Marketing and Finance (1) Business Law (1) Business Management (1) Practicum in Business Management (2) 	<p>Accounting and Financial Services</p> <ol style="list-style-type: none"> Principles of Business, Marketing, and Finance (1) Accounting I (1) Accounting II (1) Practicum in Business Management (2)



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MANUFACTURING CLUSTER	HOSPITALITY AND TOURISM CLUSTER
<p>Advanced Manufacturing and Machinery Mechanics</p> <ol style="list-style-type: none"> 1. Principles of Applied Engineering (1) 2. Robotics I (1) 3. Robotics II (1) 4. Practicum in Manufacturing (2) 	<p>Culinary Arts</p> <ol style="list-style-type: none"> 1. Introduction to Culinary Arts (1) 2. Culinary Arts (2) 3. Advanced Culinary Arts I (2) 4. Practicum in Culinary Arts (2) 5. Food Science (1)

SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS ENDORSEMENT	
STEM CLUSTER	
<p>Engineering</p> <ol style="list-style-type: none"> 1. Principles of Applied Engineering (1) 2. Manufacturing Engineering Technology I (1) 3. Engineering Design and Presentation I (1) 4. Engineering Design and Presentation II (2) 	<p>Cybersecurity</p> <ol style="list-style-type: none"> 1. Foundations of Cybersecurity (1) 2. AP Computer Science Principles (1) 3. AP Computer Science A (1) 4. Cybersecurity Capstone (2)
<p>Programming and Software Development</p> <ol style="list-style-type: none"> 1. Fundamentals of Computer Science (1) 2. AP Computer Science Principles (1) 3. AP Computer Science A (1) 4. Practicum in IT (2) 	

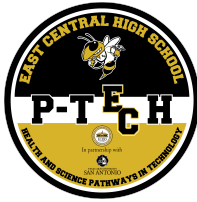
PUBLIC SERVICE ENDORSEMENT	
EDUCATION AND TRAINING CLUSTER	
<p>Early Learning</p> <ol style="list-style-type: none"> 1. Principles of Education and Training (1) 2. Child Development Associate Foundations (1) 3. Child Guidance (2) 4. Practicum in Early Learning (2) 	<p>Teaching and Training</p> <ol style="list-style-type: none"> 1. Principles of Education and Training (1) 2. Communication and Technology in Ed (1) 3. Teacher Prep 1 (IPET) (2) 4. Teacher Prep 2 (Pract.) (2)
LAW AND PUBLIC SERVICE CLUSTER	
<p>Law Enforcement</p> <ol style="list-style-type: none"> 1. Principles of Law, Public Safety, Security, and Corrections (1) 2. Law Enforcement I (1) 3. Law Enforcement II (1) OR Correctional Services (1) 4. Practicum in Law Enforcement (2) 5. Forensic Science (1) 	<p>Emergency Services</p> <ol style="list-style-type: none"> 1. Principles of Law, Public Safety, Security, and Corrections (1) 2. Disaster Response (1) 3. Firefighter I (2) 4. EMT Basic (2) & Firefighter II (2)
HEALTH SCIENCE CLUSTER	
<p>Exercise Science and Wellness</p> <ol style="list-style-type: none"> 1. Principles of Exercise and Wellness (1) 2. Kinesiology I (Sports Medicine I) (1) 3. Kinesiology II (Sports Medicine II) (1) 4. Practicum in Entrepreneurship (2) 	<p>Healthcare Therapeutic - Certified Medical Assistant (CCMA)</p> <ol style="list-style-type: none"> 1. Principles of Health Science (1) 2. Medical Terminology (1) 3. Health Science Theory (1) 4. Practicum in Health Science- CMA (2)
<p>Healthcare Therapeutic- Registered Dental Assistant</p> <ol style="list-style-type: none"> 1. Principles of Health Science (1) 2. Medical Terminology (1) 3. Health Science Theory (1) 4. Practicum in Health Science- RDA (2) 	<p>Healthcare Therapeutic - Pharmacy Technician</p> <ol style="list-style-type: none"> 1. Principles of Health Science (1) 2. Health Science Theory (1) 3. Pharmacy I (1) 4. Practicum in Health Science- Pharmacy Technician (2)



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<p>Nursing Science (CNA)</p> <ol style="list-style-type: none"> 1. Principles of Health Science (1) 2. Science of Nursing (1) 3. Clinical Ethics (1) 4. Practicum in Nursing (2) 	<p>P-TECH See next section</p>
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PATHWAYS IN TECHNOLOGY (P-TECH) CTE COURSE PLANS	
HEALTH SCIENCE CLUSTER	
<p>PCT/Phlebotomy</p> <ol style="list-style-type: none"> 1. Medical Terminology (1) & Principles of Health Science (1) 2. Health Science Theory (1) 3. Anatomy and Physiology (1) 4. Practicum in Health Science (2) 	<p>CNA/Phlebotomy</p> <ol style="list-style-type: none"> 1. Medical Terminology (1) & Principles of Health Science (1) 2. Science of Nursing (1) 3. Anatomy and Physiology (1) & Clinical Ethics (1) 4. Practicum in Nursing (2)
<p>Pharmacy Technician</p> <ol style="list-style-type: none"> 1. Medical Terminology (1) & Principles of Health Science (1) 2. Health Science Theory (1) 3. Anatomy and Physiology (1) & Pharmacy I (1) 4. Practicum in Health Science (2) 	<p>Certified Personal Trainer</p> <ol style="list-style-type: none"> 1. Medical Terminology (1) & Principles of Exercise & Wellness (1) 2. Kinesiology I (1) 3. Anatomy and Physiology (1) & Kinesiology II (1) 4. Practicum in Entrepreneurship (2)
<p>Limited Radiological Technician</p> <ol style="list-style-type: none"> 1. Medical Terminology (1) & Principles of Health Science (1) 2. Imaging Technology I (1) 3. Anatomy and Physiology (1), Health Science Theory (1) & Imaging Technology II (1) 4. Practicum in Health Science (2) 	



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BUSINESS AND INDUSTRY ENDORSEMENT	
HOSPITALITY AND TOURISM	
<p>Retail Leadership</p> <ul style="list-style-type: none">• Principles of Business, Marketing, and Finance (1)• Human Resource Management (0.5)• Retail Management (1)• Marketing (1)• Entrepreneurship (1)• Practicum in Entrepreneurship (2)	<p>E-Commerce</p> <ul style="list-style-type: none">• Principles of Information Technology (1)• Web Design (1)• Entrepreneurship (1)• AP Computer Science Principles (1)• Foundations of User Experience UX (1)• Advanced User Experience Design (1)• Practicum in Entrepreneurship (2)
<p>Travel, Tourism, and Resort Management</p> <ul style="list-style-type: none">• Principles of Hospitality and Tourism (1)• Principles of Business, Marketing, and Finance (1)• Travel and Tourism Management (1)• Sports and Entertainment Marketing (0.5)• Global/Virtual Business (0.5/ 0.5)• Intro to Event Planning (1)• Entrepreneurship (1)• Tourism, Marketing Concepts, and Applications (1)• Practicum in Entrepreneurship (2)	



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HERITAGE MIDDLE SCHOOL OFFERINGS	
COURSE	ALIGNED PROGRAMS
College/ Career Readiness (CCR)	Prerequisite to choosing high school graduation endorsement, and career exploration opportunity. Not a high school credit
Principles of Business, Marketing, and Finance	East Central High School <ul style="list-style-type: none">• Business Management• Accounting and Financial Services CAST Lead <ul style="list-style-type: none">• Retail Leadership• Travel, Tourism, & Resort Management
Intro to Robotics	Take before Robotics I- not a high school credit.
Principles of Applied Engineering	East Central High School <ul style="list-style-type: none">• Advanced Manufacturing and Machinery Mechanics• Engineering



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LEGACY MIDDLE SCHOOL OFFERINGS	
COURSE	ALIGNED PROGRAMS
College/ Career Readiness (CCR)	Prerequisite to choosing high school graduation endorsement, and career exploration opportunity. Not a high school credit
Principles of Business, Marketing, and Finance	East Central High School <ul style="list-style-type: none">• Business Management• Accounting and Financial Services CAST Lead <ul style="list-style-type: none">• Retail Leadership• Travel, Tourism, & Resort Management
Intro to Robotics	Take before Robotics I- not a high school credit.
Robotics I	East Central High School <ul style="list-style-type: none">• Advanced Manufacturing and Machinery Mechanics
Principles of Applied Engineering	East Central High School <ul style="list-style-type: none">• Advanced Manufacturing and Machinery Mechanics• Engineering
Principles of Hospitality and Tourism	CAST Lead <ul style="list-style-type: none">• Travel, Tourism and Resort Management



CONTACT US

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EAST CENTRAL HIGH SCHOOL

PROGRAMS OF STUDY

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Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life food, water, land, and air. This career cluster includes 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.



Agribusiness Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Ag Leadership and Development 1 (Professional Communications)

Level 3

- Ag Leadership and Development 2 (Agribusiness Management and Marketing/Lab)

Level 4

- Ag Leadership and Development 3 (Agricultural Leadership, Research, and Communications)

Postsecondary Opportunities

Associates Degrees

- Agricultural Business and Management, General
- Banking and Financial Support Services
- Advertising
- Marketing/ Marketing Management, General

Bachelor's Degrees

- Agricultural Business and Management, General
- Finance, General
- Financial Mathematics
- Marketing/ Marketing Management, General

Master's, Doctoral, and Professional Degrees

- Agricultural Business and Management, General
- Finance, General
- Financial Mathematics
- Marketing/ Marketing Management, General

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Tour a farm machinery products companyParticipate in Texas FFA	<ul style="list-style-type: none">Intern with a farm machinery products companyWork on a farm or ranch

Industry-Based Certifications

- Entrepreneurship and Small Business
 - Microsoft Office Specialist: Microsoft Excel Expert (Excel and Excel 2019)
 - Production Agriculture - Job Ready
-
- Microsoft Office Specialist Excel*
*IBC sunseting 8/31/24



Aligned Occupations

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	268	20%

Successful completion of the Agribusiness program of study will fulfill requirements of the Business and Industry Endorsement. Revised – August 2022

Agribusiness Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Agriculture, Food, and Natural Resources	7211 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Ag Leadership & Development 1 (Professional Communications)	7254 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Ag Leadership & Development 2 (Agribusiness Management and Marketing/Lab)	7253 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Ag Leadership & Development 3 (Agricultural Leadership, Research, and Communications)	7252 (1 credit)	One credit from courses in the Agriculture, Food, and Natural Resources Career Cluster	None

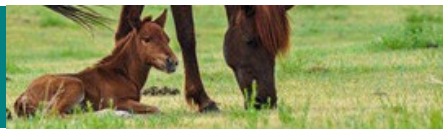
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Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life food, water, land, and air. This career cluster includes 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.



Animal Science Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Small Animal Management
- Equine Science

Level 3

- Livestock Production/Lab

Level 4

- Advanced Animal Science
- Veterinary Medical Applications/Lab

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Texas FFA

Work-Based Learning Activities

- Compete in an Agri-Science Fair 4H
- Volunteer at a local farm or with a veterinarian
- Participate in an FFA supervised agriculture experience

Industry-Based Certifications

- Elanco Fundamentals of Animal Science Certification



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%

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 – August 2022

Animal Science

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Agriculture, Food, and Natural Resources	7211 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Small Animal Management	7255 (0.5 credit)	None	None
Equine Science	7237 (0.5 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Livestock Production/Lab	7236 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Advanced Animal Science	7258 (1 credit)	Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production	None
Veterinary Medical Applications/Lab	7216 (2 credits)	Equine Science, Small Animal Management, or Livestock Production	None

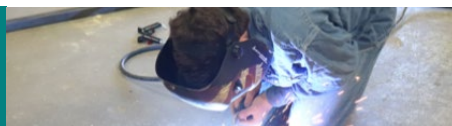
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Agriculture, Food, and Natural Resources Career Cluster

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Applied Agricultural Engineering Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Agricultural Mechanics and Metal Technologies/Lab

Level 3

- Agricultural Structures Design and Fabrications/Lab

Level 4

- Agricultural Equipment Design and Fabrication/Lab

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Tour a farm products or machinery plantParticipate in Texas FFA	<ul style="list-style-type: none">Earn a welding certificationIntern at a farm products or machinery plantParticipate in an FFA supervised agriculture experience

Industry-Based Certifications

- AWS D9.1 Sheet Metal Welding

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%

Successful completion of the Applied Agricultural Engineering program of study will fulfill requirements of a Business and Industry endorsement or STEM endorsement if the math and science requirements are met. Revised – October 2022

Applied Agricultural Engineering

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Agriculture, Food, and Natural Resources	7211 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Agricultural Mechanics and Metal Technologies/Lab	7239 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Agricultural Structures Design and Fabrications/Lab	7245(2 credits)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Agricultural Equipment Design and Fabrication/Lab	7233(2 credits)	None	None

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Agriculture, Food, and Natural Resources Career Cluster

The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life - food, water, land, and air. This career cluster includes 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.



Plant Science Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Horticultural Science/Lab

Level 3

- Floral Design/Lab

Level 4

- Advanced Floral Design

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

- Texas State Florist's Association Knowledge Based Floral Certification

Postsecondary Opportunities

Associates Degrees

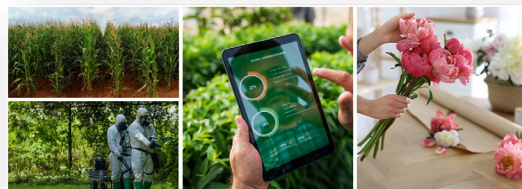
- Applied Horticulture/ Horticulture Operations, General
- Ornamental Horticulture
- Agricultural Business and Management, General
- Turf and Turfgrass Management

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



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%

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 – August 2022

Plant Science

Course information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Agriculture, Food, and Natural Resources	7211 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Horticultural Science/Lab	7223(1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Floral Design/Lab	7221 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Advanced Floral Design	7220 (1 credit)	Floral Design	None

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Architecture and Construction Career Cluster

The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management.



Architectural Design Program of Study



The 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.

Secondary Courses for High School Credit

Level 1

- Principles of Architecture

Level 2

- Architectural Design I

Level 3

- Architectural Design II

Level 4

- Practicum in Architectural Design

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	Work-Based Learning Activities
<ul style="list-style-type: none">Shadow an architect, interior designer or civil engineerParticipate in SkillsUSA	<ul style="list-style-type: none">Intern at an architectural firm

Industry-Based Certifications

- Autodesk Associate (Certified User) Revit Architecture

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%

Successful completion of the Architectural Design program of study will fulfill requirements of the Business and Industry endorsement or STEM endorsement if the math and science requirements are met. Revised – August 2022

Architectural Design

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Architecture	7512 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Architectural Design I	7521 (1 credit)	Algebra I and English I	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Architectural Design II	7522 (2 credits)	Architectural Design I or Advanced Interior Design and Geometry	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Architectural Design	7530 (2 credits)	Architectural Design II	None

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Architecture and Construction Career Cluster

The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management.



Construction Management and Inspection Program of Study



The Construction Management and Inspection program of study explores the occupations and educational opportunities associated with cost estimates for construction projects or services to aid management in bidding on or determining the price of products or services. This program of study may also include exploration into inspecting structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations.

Secondary Courses for High School Credit

Level 1

- Principles of Construction

Level 2

- Construction Management I

Level 3

- Construction Management II

Level 4

- Practicum in Construction Management

Postsecondary Opportunities

Associates Degrees

- Construction Engineering Technology/Technician
- Business Administration and Management, General
- Mechanical Engineering
- Business/ Commerce, General

Bachelor's Degrees

- Construction Engineering Technology/Technician
- Business Administration and Management, General
- Mechanical Engineering
- Business/ Commerce, General

Master's, Doctoral, and Professional Degrees

- Materials Engineering
- Business Administration and Management, General
- Mechanical Engineering
- Manufacturing Engineering

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

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

Work-Based Learning Activities

- Intern with a construction company
- Shadow a project manager or inspector

Industry-Based Certifications

- Certified Associate in Project Management (CAPM)

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Construction and Building Inspectors	\$53,914	983	17%
Cost Estimators	\$63,939	2,239	21%
Construction Managers	\$87,402	2,401	14%



Successful completion of the Construction Management and Inspection program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

Construction Management and Inspection

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Construction	7513 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Construction Management I	7506 (2 credits)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Construction Management II	7507 (2 credits)	Construction Management I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Construction Management	7508 (2 credits)	Construction Management II	None

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Arts, Audio/Video Technology, and Communications Career Cluster

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Digital Communications Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Arts, Audio/Video Technology, and Communications

Level 2

- Audio/Video Production I/Lab

Level 3

- Audio/Video Production II/Lab

Level 4

- Practicum of Audio/Video Production

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 Digital Video Using Adobe Premiere Pro

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



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%

Successful completion of the Digital Communications program of study will fulfill requirements of the Business and Industry endorsement. Revised – October 2022

Digital Communications

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Arts, A/V Technology, and Communications	7721 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Audio/Video Production I/Lab	7722 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES (CREQ)
Audio/Video Production II/Lab	7998 (2 credits)	Audio/Video Production I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Audio/Video Production	7724 (2 credits)	Audio/Video Production II/Lab	None

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Arts, Audio/Video Technology, and Communications Career Cluster

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Graphic Design & Multimedia Arts- Fashion Design *Program of Study*



The Graphic 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.

Secondary Courses for High School Credit

Level 1

- Principles of Arts, A/V Technology, and Communications

Level 2

- Fashion Design I/Lab

Level 3

- Fashion Design II/Lab

Level 4

- Practicum in Entrepreneurship

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Join a website development or coding clubParticipate in SkillsUSA or TSA	<ul style="list-style-type: none">Intern with a multimedia or animation studioObtain a certificate or certification in graphic design

Industry-Based Certifications

- Adobe Certified Professional in Graphic Design and Illustration Using Adobe Illustrator

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

Aligned Occupations

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

Graphic Design & Multimedia Arts Fashion Design

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Arts, A/V Technology, & Communications	7721 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Fashion Design I/Lab	7122 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Fashion Design II/Lab	7124 (2 credits)	Fashion Design I/Lab	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES (PREQ)	COREQUISITES (CREQ)
Practicum in Entrepreneurship	7127 (2 credits)	None	None

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Arts, Audio/Video Technology, and Communications Career Cluster

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Graphic Design & Multimedia Arts- Animation Program of Study



The Graphic 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.

Secondary Courses for High School Credit

Level 1

- Principles of Arts, A/V Technology, and Communications

Level 2

- Animation I

Level 3

- Animation II

Level 4

- Practicum in Animation

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Join a website development or coding clubParticipate in SkillsUSA or TSA	<ul style="list-style-type: none">Intern with a multimedia or animation studioObtain a certificate or certification in graphic design

Industry-Based Certifications

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

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

Aligned Occupations

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

Graphic Design & Multimedia Arts- Animation

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Arts, A/V Technology, & Communications	7721 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Animation I	7532 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Animation II	7999 (2 credits)	Animation I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES (PREQ)	COREQUISITES (CREQ)
Practicum in Animation	7535 (2 credits)	Animation II	None

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Graphic Design & Multimedia Arts- Graphic Design *Program of Study*



The Graphic 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.

Secondary Courses for High School Credit

Level 1

- Principles of Arts, A/V Technology, and Communications

Level 2

- Graphic Design and Illustration I

Level 3

- Graphic Design and Illustration II

Level 4

- Practicum in Graphic Design and Illustration

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">• Join a website development or coding club• Participate in SkillsUSA or TSA	<ul style="list-style-type: none">• Intern with a multimedia or animation studio• Obtain a certificate or certification in graphic design

Industry-Based Certifications

- Adobe Certified Professional in Visual Design using Adobe Photoshop

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

Aligned Occupations

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

Graphic Design & Multimedia Arts- Graphic Design Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Arts, A/V Technology, & Communications	7721 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Graphic Design and Illustration I	7531 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Graphic Design and Illustration II	7728 (2 credits)	Graphic Design and Illustration I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES (PREQ)	COREQUISITES (CREQ)
Practicum in Graphic Design and Illustration	7535 (2 credits)	Graphic Design and Illustration II	None

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Arts, Audio/Video Technology, and Communications Career Cluster

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Graphic Design & Multimedia Arts- Video Game Program of Study



The Graphic 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.

Secondary Courses for High School Credit

Level 1

- Principles of Arts, A/V Technology, and Communications

Level 2

- Video Game Design

Level 3

- Video Game Programming

Level 4

- Advanced Video Game Programming

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Join a website development or coding clubParticipate in SkillsUSA or TSA	<ul style="list-style-type: none">Intern with a multimedia or animation studioObtain a certificate or certification in graphic design

Industry-Based Certifications

- Adobe Certified Professional in Digital Video using Adobe Premiere Pro

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

Aligned Occupations

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

Graphic Design & Multimedia Arts- Video Game Design

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Arts, A/V Technology, & Communications	7721 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Video Game Design	6817 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Video Game Programming	6818 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES (PREQ)	COREQUISITES (CREQ)
Advanced Video Game Programming	6820 (1 credits)	None	None

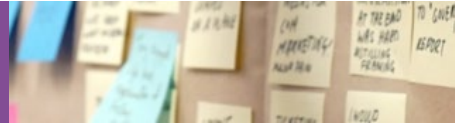
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Business, Marketing, and Finance Career Cluster

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



Business Management Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Business, Marketing, and Finance

Level 2

- Business Law

Level 3

- Business Management

Level 4

- Practicum in Business Management

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

- Project Management Institute (PMI) Project Management Ready

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

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%

Successful completion of the Business Management program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

Business Management Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Business, Marketing, and Finance	6060 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Business Law	7312 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Business Management	7313 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Business Management	7300 (2 credits)	None	None

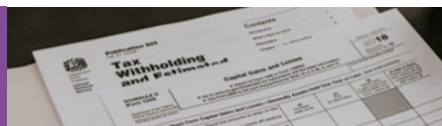
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Business, Marketing, and Finance Career Cluster

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



Accounting and Financial Services Program of Study



The Accounting and Financial Services program of study teaches CTE learners 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 of study will also introduce students to mathematical modeling tools.

Secondary Courses for High School Credit

Level 1

- Principles of Business, Marketing, and Finance

Level 2

- Accounting I

Level 3

- Accounting II

Level 4

- Practicum in Business Management

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

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

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%

Accounting and Financial Services

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Business, Marketing, and Finance	6060 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Accounting I	6721 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Accounting II	6722 (1 credit)	Accounting I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Business Management	7300 (2 credits)	None	None

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Manufacturing Career Cluster

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



Advanced Manufacturing and Machinery Mechanics Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Applied Engineering

Level 2

- Robotics I

Level 3

- Robotics II

Level 4

- Practicum in Manufacturing

Postsecondary Opportunities

Associates Degrees

- Electromechanical Engineering/Technology
- Certified Quality Technician
- Industrial Mechanics and Maintenance Technology

Bachelor's Degrees

- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering

Master's, Doctoral, and Professional Degrees

- Electrical Engineering
- Industrial Engineering
- Mechanical Engineering

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities	Work-Based Learning Activities
<ul style="list-style-type: none">Participate in SkillsUSA and local STEM events	<ul style="list-style-type: none">Work at a local business or industry apprenticeshipJoin the American Welding Society

Industry-Based Certifications

- C-101 Certified Industry 4.0 Associate - Basic Operations
- C-103 Certified Industry 4.0 Associate - Robot System Operations
- C-200 Certified Industry 4.0 Automation System Specialist I -216 Robotic System Integration 1
- C-200 Certified Industry 4.0 Automation Systems Specialist I -208 Programmable Controller Troubleshooting 1
- C-200 Certified Industry 4.0 Automation Systems Specialist I -215 Robotic Operations 1
- Certified Manufacturing Associate
- Certified SOLIDWORKS Professional (CSWP) - CAM
- Certified SOLIDWORKS Professional (CSWP) - Additive Manufacturing
- CNC Lathe Operations
- CNC Lathe Set Up and Operations
- FANUC Robot Operator 1
- FESTO Certified Industry 4.0 Associate Fundamentals
- Industrial Technology Maintenance (ITM) - Process Control Systems
- Machining CNC Mill Operations Level I
- Machining CNC Mill Programming Setup and Operations Level I
- Machining CNC Milling Skills Level II
- Machining CNC Milling Skills Level II

Aligned Occupations

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%

Successful completion of the Advanced Manufacturing and Machinery Mechanics program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met.
Revised – August 2022

Advanced Manufacturing and Machinery Mechanics

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Applied Engineering	7515 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Robotics I	7510 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Robotics II	7511 (1 credit)	Robotics I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Manufacturing	7835 (2 credits)	None	None

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Hospitality and Tourism Career Cluster

The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services. Students acquire knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success.



Culinary Arts Program of Study



The Culinary Arts program of study introduces CTE learners 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.

Secondary Courses for High School Credit

Level 1

- Introduction to Culinary Arts

Level 2

- Culinary Arts

Level 3

- Advanced Culinary Arts

Level 4

- Food Science
- Practicum in Culinary Arts

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

- 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%

Successful completion of the Culinary Arts program of study will fulfill requirements of the Business and Industry endorsement. Revised – October 2022

Culinary Arts Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Introduction to Culinary Arts	7566 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Culinary Arts	7563 (2 credits)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Advanced Culinary Arts	7567 (2 credits)	Culinary Arts	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Food Science	3610 (1 credit)	3 units of Science, including Chemistry and Biology	None
Practicum in Culinary Arts	7565 (2 credits)	Culinary Arts	None

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Science, Technology, Engineering, and Mathematics Career Cluster

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.



Engineering Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Applied Engineering

Level 2

- Manufacturing Engineering Technology I

Level 3

- Engineering Design and Presentation I

Level 4

- Engineering Design and Presentation II

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) & Professional Fusion 360

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

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	105

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 – November 2022

Engineering Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Applied Engineering	7515 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Manufacturing Engineering Technology I	7586 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Engineering Design and Presentation I	7524 (1 credit)	Algebra I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Engineering Design and Presentation II	7525 (2 credits)	Algebra I and Geometry	None

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Science, Technology, Engineering, and Mathematics Career Cluster

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.



Cybersecurity Program of Study



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

Secondary Courses for High School Credit

Level 1

- Foundations of Cybersecurity

Level 2

- AP Computer Science Principles

Level 3

- AP Computer Science A-Math

Level 4

- Cybersecurity Capstone

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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

Postsecondary Opportunities

Associates 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

- CompTIA Security+



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%

Successful completion of the Cybersecurity program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met. Revised – October 2022

Cybersecurity Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Foundations of Cybersecurity	7520 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
AP Computer Science Principles	6900 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
AP Computer Science A, MATH, LOTE	6899 (1 credit) 6901 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Cybersecurity Capstone	7518 (1 credit)	None	None

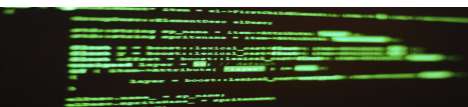
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Science, Technology, Engineering, and Mathematics Career Cluster

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.



Programming and Software Development Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Fundamentals of Computer Science

Level 2

- AP Computer Science Principles

Level 3

- AP Computer Science A

Level 4

- Practicum in Information Technology

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

- Apple App Development with Swift
- C++ Certified Associate Programmer
- Certified Entry-Level Python Programmer (PCEP)
- Certified Professional Programmer
- Certified User Programmer
- CompTIA Linux+
- CodeHS Python Level 1 Certification
- Information Technology Specialist: Java
- Information Technology Specialist: JavaScript
- Microsoft Azure AI Fundamentals
- Microsoft Azure Data Fundamentals
- Oracle Certified Associate Java SE 8 Programmer
- Oracle Database SQL Certified Associate



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

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%

Successful completion of the Programming and Software Development program of study will fulfill requirements of the Business and Industry endorsement and STEM endorsement if the math and science requirements are met. Revised – August 2022

Programming and Software Development

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Fundamentals of Computer Science	6898 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
AP Computer Science Principles	6900 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
AP Computer Science A, MATH, LOTE	6899 (1 credit) 6901 (1 credit)	None	None

Level 4

Course Name	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Information Technology	7668(2 credits)	Two high school Information Technology courses	None

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Education and Training Career Cluster

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



Early Learning Program of Study



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 in basic elements of science, art, music, and literature. This program of study introduces CTE learners to tasks necessary for planning, directing, and coordinating activities for young children.

Secondary Courses for High School Credit

Level 1

- Principles of Education and Training

Level 2

- Child Development Associate Foundations

Level 3

- Child Guidance

Level 4

- Practicum in Early Learning

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

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

Industry-Based Certifications

- Educational Aide 1



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%

Successful completion of the Early Learning program of study will fulfill requirements of the Public Service endorsement.

Revised – October 2022

Early Learning Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Education and Training	7161 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Child Development Associate Foundations	7168 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Child Guidance	7163(2 credits)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Early Learning	7176 (2 credits)	Child Guidance	None

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Education and Training Career Cluster

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



Teaching and Training Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Education and Training

Level 2

- Communication and Technology in Education

Level 3

- Instructional Practices

Level 4

- Practicum in Education and Training

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

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

Industry-Based Certifications

- Educational Aide I



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%

Successful completion of the Teaching and Training program of study will fulfill requirements of the Public Service endorsement. Revised – August 2022

Teaching and Training Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Education and Training	7161 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Communication and Technology in Education	6680 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Instructional Practices (Teacher Prep I)	7174 (2 credits)	1 credit from Education and Training Career Cluster	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Education and Training (Teacher Prep II)	7175 (2 credits)	Instructional Practices	None

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Law and Public Service Career Cluster

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



Law Enforcement Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Law, Public Safety, Corrections, and Security

Level 2

- Law Enforcement I

Level 3

- Law Enforcement II
- Correctional Services

Level 4

- Forensic Science
- Practicum in Law, Public Safety Corrections, and Security

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

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

Industry-Based Certifications

- Non-Commissioned Security Officer Level II License



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%

Successful completion of the Law and Public Service program of study will fulfill requirements of the Public Service endorsement. Revised – August 2022

Law Enforcement Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Law, Public Safety, Corrections, and Security	7555 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Law Enforcement I	7557 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Law Enforcement II	7559 (1 credit)	None	None
Correctional Services	7560 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Forensic Science	3612 (1 credit)	Biology and Chemistry	None
Practicum in Law, Public Safety, Corrections, and Security	7552 (2 credits)	None	None

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Law and Public Service Career Cluster

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



Emergency Services Program of Study



The Emergency Services program of study focuses on training CTE learners to respond to emergency situations, such as medical emergencies and fire-based emergencies. Students will 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.

Secondary Courses for High School Credit

Level 1

- Principles of Law, Public Safety, Corrections, and Security

Level 2

- Disaster Response

Level 3

- Firefighter I
- Emergency Medical Technician – Basic

Level 4

- Firefighter II

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 Technician - Basic

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



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%

Successful completion of the Emergency Services program of study will fulfill requirements of the Public Service endorsement. Revised – August 2022

Emergency Services Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Law, Public Safety, Corrections, and Security	7555 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Disaster Response	7539 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Emergency Medical Technician - Basic	7408 (2 credits)	Biology	None
Firefighter I	7540 (2 credits)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Firefighter II	7541 (3 credits)	Firefighter I	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Exercise Science and Wellness Program of Study



The Exercise Science and Wellness program of study introduces CTE learners to the fields that assist patients with maintaining physical, mental, and emotional health. Students will research diet and exercise needed to maintain a healthy, balanced lifestyle and learn about and practice techniques to help patients recover from injury, illness, or disease.

Secondary Courses for High School Credit

Level 1

- Principles of Exercise Science and Wellness

Level 2

- Sports Medicine I (Kinesiology I)

Level 3

- Sports Medicine II (Kinesiology II)

Level 4

- Practicum in Entrepreneurship

Postsecondary Opportunities

Associates Degrees

- Physical Therapist Assistant
- Physical Therapy Aides
- Dietetic Technician

Bachelor's Degrees

- Kinesiology and Exercise Science
- Therapeutic Recreation/Recreational Therapy
- Athletic Training/Trainer

Master's, Doctoral, and Professional Degrees

- Exercise Physiology
- Therapeutic Recreation/Recreation Therapy
- Athletic Training/Trainer
- Physical Therapist

Work-Based Learning and Expanded-Learning Opportunities

Exploration Activities

- Participate in Health Occupations Students of America

Work-Based Learning Activities

- Volunteer at a hospital or rehabilitation center
- Manage a school sports team

Industry-Based Certifications

- Certified Personal Trainer



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Athletic Trainers	\$53,450	215	22%
Exercise Physiologists	\$41,662	33	33%
Coaches and Scouts	\$40,010	2,133	23%
Dieticians and Nutritionists	\$57,762	428	24%
Recreational Therapists	\$45,906	74	24%

Successful completion of the Exercise Science program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised – October 2022

Exercise Science and Wellness

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Exercise Science and Wellness	7142 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Kinesiology I	7093 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Kinesiology II	7092 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Entrepreneurship	7119 (2 credits)	None	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Healthcare Therapeutic- Medical Assisting Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science

Level 2

- Medical Terminology

Level 3

- Health Science Theory

Level 4

- Practicum in Health Science- CMA

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

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



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%

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 – March 2022

Healthcare Therapeutic Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7401 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Medical Terminology	7421 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Health Science Theory	7402 (1 credit)	Biology	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7505 (2 credits)	Health Science Theory and Biology	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Healthcare Therapeutic- Dental Assistant *Program of Study*



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science

Level 2

- Medical Terminology

Level 3

- Health Science Theory

Level 4

- Practicum in Health Science- RDA

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 Dental Assistant

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



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%

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 – March 2022

Healthcare Therapeutic Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7401 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Medical Terminology	7421 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Health Science Theory	7402 (1 credit)	Biology	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7410 (2 credits)	Health Science Theory and Biology	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Healthcare Therapeutic- Pharmacy Tech *Program of Study*



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science

Level 2

- Health Science Theory

Level 3

- Pharmacology

Level 4

- Practicum in Health Science- Pharmacy Technician

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

- Pharmacy Technician

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



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%

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 – March 2022

Healthcare Therapeutic Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7401 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Health Science Theory	7402 (1 credit)	Biology	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Pharmacology	7405 (1 credit)	Biology and Chemistry	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7410 (2 credits)	Health Science Theory and Biology	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Nursing Science *Nurse Aide Program of Study*



The Nursing Science program of study introduces students to the knowledge and skills related to patient care. CTE learners may learn about or practice caring for patients, routine procedures such as monitoring vital signs, development and implementation of care plans, maintenance of medical records, and disease or pain management. Students may focus on the healthcare system and research system designs and make recommended modifications.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science

Level 2

- Science of Nursing

Level 3

- Clinical Ethics

Level 4

- Practicum in Nursing

Postsecondary Opportunities

Associates Degrees

- Registered Nursing/Registered Nurse

Bachelor's Degrees

- Informatics Nurse Specialists

Master's, Doctoral, and Professional Degrees

- Nurse Practitioner
- Nursing Administration
- Nurse Anesthetist

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Health Occupation Students of America

Work-Based Learning Activities

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

Industry-Based Certifications

- Certified Nurse Aide (CNA)



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Licensed Vocational Nurses	\$45,178	7,186	21%
Registered Nurses	\$68,682	17,493	26%
Nurse Practitioners	\$107,827	977	50%
Nurse Anesthetists	\$154,856	357	23%

Successful completion of the Nursing Science program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised – March 2023

Nursing Science Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7401 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Science of Nursing	7035 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Clinical Ethics	7030 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Nursing	7411 (2 credits)	TBD	TBD

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Certified Personal Trainer Program of Study



The Exercise Science and Wellness program of study introduces CTE learners to the fields that assist patients with maintaining physical, mental, and emotional health. Students will research diet and exercise needed to maintain a healthy, balanced lifestyle and learn about and practice techniques to help patients recover from injury, illness, or disease.

Secondary Courses for High School Credit

Level 1

- Principles of Exercise Science and Wellness
- Medical Terminology

Level 2

- Sports Medicine I (Kinesiology I)

Level 3

- Sports Medicine II (Kinesiology II)
- Anatomy and Physiology

Level 4

- Practicum in Entrepreneurship

Postsecondary Opportunities

Associates Degrees

- Physical Therapist Assistant
- Physical Therapy Aides
- Dietetic Technician

Bachelor's Degrees

- Kinesiology and Exercise Science
- Therapeutic Recreation/Recreational Therapy
- Athletic Training/Trainer

Master's, Doctoral, and Professional Degrees

- Exercise Physiology
- Therapeutic Recreation/Recreation Therapy
- Athletic Training/Trainer
- Physical Therapist

Work-Based Learning and Expanded-Learning Opportunities

Exploration Activities

- Participate in Health Occupations Students of America

Work-Based Learning Activities

- Volunteer at a hospital or rehabilitation center
- Manage a school sports team

Industry-Based Certifications

- Certified Personal Trainer



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Athletic Trainers	\$53,450	215	22%
Exercise Physiologists	\$41,662	33	33%
Coaches and Scouts	\$40,010	2,133	23%
Dieticians and Nutritionists	\$57,762	428	24%
Recreational Therapists	\$45,906	74	24%

Successful completion of the Exercise Science program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised – October 2022

Certified Personal Trainer

Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Exercise Science and Wellness	7427 (1 credit)	None	None
Medical Terminology	7425 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Kinesiology I	7435 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Kinesiology II	7436 (1 credit)	None	None
Anatomy & Physiology	7429 (1 credit)	Biology and a second science credit	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Entrepreneurship	7423 (2 credits)	None	None

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



Limited Radiological Technician Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science
- Medical Terminology

Level 2

- Imaging Technology I

Level 3

- Health Science Theory
- Anatomy and Physiology
- Imaging Technology II

Level 4

- Practicum in Health Science

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Health Occupation Students of America

Work-Based Learning Activities

- Perform clinical rotations at a community wellness center, hospital, assisted living, nursing home

Industry-Based Certifications

- Limited Medical Radiologic Technologist

Postsecondary Opportunities

Associates Degrees

- Nuclear Medical Technology/Technologist
- Magnetic Resonance Imaging (MRI) Technology/Technician

Bachelor's Degrees

- Nuclear Medical Technology/Technologist
- Medical Radiologic Technology/Science Radiation Therapist

Master's, Doctoral, and Professional Degrees

- Radiologist
- Radiologic Technology/Science Radiographer

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Diagnostic Medical Sonographers	\$69,909	495	35%
Phlebotomist	\$30,597	1,442	36%
Nuclear Medicine Technologists	\$75,962	91	13%
Radiologic Technologists	\$55,494	1,196	21%
Magnetic Resonance Imaging Technologists	\$68,661	217	21%

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 – August 2022

Limited Radiological Technician Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7426 (1 credit)	None	None
Medical Terminology	7425 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Imaging Technology I	TBD (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Anatomy and Physiology	7429 (1 credit)	Biology and a second science credit	None
Health Science Theory	7428 (1 credit)	Biology	None
Imaging Technology II	TBD (1 credit)	Imaging Technology I	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7430 (2 credits)	Health Science Theory and Biology	None

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Health Science Career Cluster

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CNA/Phlebotomy Program of Study



The Nursing Science program of study introduces students to the knowledge and skills related to patient care. CTE learners may learn about or practice caring for patients, routine procedures such as monitoring vital signs, development and implementation of care plans, maintenance of medical records, and disease or pain management. Students may focus on the healthcare system and research system designs and make recommended modifications.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science
- Medical Terminology

Level 2

- Science of Nursing

Level 3

- Clinical Ethics
- Anatomy & Physiology

Level 4

- Practicum in Nursing

Postsecondary Opportunities

Associates Degrees

- Registered Nursing/Registered Nurse

Bachelor's Degrees

- Informatics Nurse Specialists

Master's, Doctoral, and Professional Degrees

- Nurse Practitioner
- Nursing Administration
- Nurse Anesthetist

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Health Occupation Students of America

Work-Based Learning Activities

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

Industry-Based Certifications

- Certified Nurse Aide (CNA)
- Phlebotomy Technician



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Licensed Vocational Nurses	\$45,178	7,186	21%
Registered Nurses	\$68,682	17,493	26%
Nurse Practitioners	\$107,827	977	50%
Nurse Anesthetists	\$154,856	357	23%

Successful completion of the Nursing Science program of study will fulfill requirements of a Public Service endorsement or STEM endorsement if the math and science requirements are met. Revised – March 2023

CNA/Phlebotomy Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7426 (1 credit)	None	None
Medical Terminology	7425 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Science of Nursing	7431 (1 credit)	None	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Clinical Ethics	7432 (1 credit)	None	None
Anatomy and Physiology	7429 (1 credit)	Biology and a second science credit	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Nursing	TBD (2 credits)	TBD	TBD

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Health Science Career Cluster

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development. 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.



PCT/ Phlebotomy Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science
- Medical Terminology

Level 2

- Health Science Theory

Level 3

- Anatomy and Physiology

Level 4

- Practicum in Health Science

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

- Patient Care Technician
- Phlebotomy Technician

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



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%

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 – March 2022

PCT/Phlebotomy Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7426 (1 credit)	None	None
Medical Terminology	7425 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Health Science Theory	7428 (1 credit)	Biology	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Anatomy and Physiology	7429 (1 credit)	Biology and a second science credit	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7430 (2 credits)	Health Science Theory and Biology	None

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Health Science Career Cluster

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Pharmacy Technician Program of Study



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.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science
- Medical Terminology

Level 2

- Health Science Theory

Level 3

- Anatomy and Physiology
- Pharmacy I

Level 4

- Practicum in Health Science

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

Pharmacy Technician

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



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%

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 – March 2022

Pharmacy Technician Course Information

Level 1

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Health Science	7426 (1 credit)	None	None
Medical Terminology	7425 (1 credit)	None	None

Level 2

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Health Science Theory	7428 (1 credit)	Biology	None

Level 3

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Anatomy and Physiology	7429 (1 credit)	Biology and a second science credit	None
Health Science Theory	7428 (1 credit)	Biology	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Health Science	7430 (2 credits)	Health Science Theory and Biology	None

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CAST LEAD

PROGRAMS OF STUDY

- SERVES GRADES 8TH-12TH
- STUDENTS MAY ENTER BEFORE 10TH GRADE

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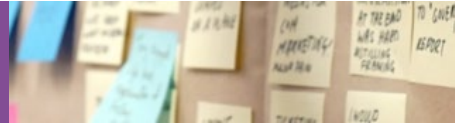
Presented August 2023

Business, Marketing, and Finance Career Cluster

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



Business & Retail Management Program of Study



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.

Secondary Courses for High School Credit

Odd Years

- Principles of Business, Marketing, and Finance
- Human Resource Management

Even Years

- Retail Management
- Marketing
- Entrepreneurship
- Practicum in Entrepreneurship

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
- General Management
- MB-920: Microsoft Dynamics 365 Fundamentals-Finance and Operations Apps
- Microsoft Office Specialist 2016 Master
- Microsoft Office Specialist: Microsoft Access Expert (Access 2019)
- Microsoft Office Specialist: Microsoft Excel Expert (Excel 2019)
- Microsoft Office Specialist: Microsoft Word Expert (Word 2019)
- Project Management Institute (PMI) Project Management Ready

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

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%

Successful completion of the Business Management program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

Business Management Course Information

Odd Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Business, Marketing, and Finance	6621 (1 credit)	None	None
Human Resource Management	7314 (0.5 credit)	None	None

Even Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Retail Management	7383 (1 credit)	None	None
Marketing	7114 (1 credit)	None	None
Entrepreneurship	7110 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Entrepreneurship	7119 (2 credits)	None	None

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Information Technology Career Cluster

The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.



E-Commerce Program of Study



The Web Development program of study explores the occupations and educational opportunities associated with designing, creating, and modifying websites. This program of study may also explore integrating websites with other computer applications, and converting written, graphic, audio, and video components to compatible web formats by using software designed to facilitate the creation of web and multimedia content.

Secondary Courses for High School Credit

Odd Years

- Principles of Information Technology

Even Years

- Web Design
- Entrepreneurship

Every Year

- AP Computer Science Principles
- Foundations of User Experience (UX)
- Advanced User Experience Design
- Practicum in Entrepreneurship

Postsecondary Opportunities

Associates Degrees

- Computer Programming/Programmer, General
- Computer Science
- Web Page, Digital/Multimedia and Information Resources Design
- Computer Systems Networking and Telecommunications

Bachelor's Degrees

- Web/Multimedia Management and Webmaster
- Computer Science
- Web Page, Digital/Multimedia and Information Resources Design
- Computer Systems Networking and Telecommunications

Master's, Doctoral, and Professional Degrees

- Computational Science
- Computer Science
- Information Science/Studies
- Computer Systems Networking and Telecommunications

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Participate in a coding or computer programming club
- Create a web page

Work-Based Learning Activities

- Earn an Oracle or web certification

Industry-Based Certifications

- Certified Web and Mobile App Developer Apprentice
- Certified Web Animator Associate
- CodeHS Python Level 1 Certification
- CodeHS Web Design Level 1 Certification
- Information Technology Specialist: HTML and CSS
- Information Technology Specialist: HTML5 Application Development
- Information Technology Specialist: JavaScript
- Microsoft Azure Data Fundamentals
- Oracle Certified Associate Java SE 8 Programmer
- Web Design- Job Ready



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Web Developers	\$67,912	1,079	39%
Web Administrators, Computer Occupations	\$85,197	1,616	20%
Software Developers	\$104,499	6,311	30%

Successful completion of the Web Development program of study will fulfill requirements of the Business and Industry endorsement and STEM endorsement if the math and science requirements are met.. Revised – October 2022

E-Commerce

Course Information

Odd Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Information Technology	7670 (1 credit)	None	None

Even Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Web Design	7985 (1 credit)	None	None
Entrepreneurship	7110 (1 credit)	None	None

Every Year

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
AP Computer Science Principles	6900 (1 credit)	Algebra I	None
Foundations of User Experience (UX)	7364 (1 credit)	None	None
Advanced User Experience Design	7112 (1 credit)	None	None
Practicum in Entrepreneurship	7119 (2 credits)	None	None

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Hospitality and Tourism Career Cluster

The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services. Students acquire knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success.



Travel, Tourism, and Resort Management Program of Study



The Lodging and Resort Management program of study introduces CTE learners to occupations and educational opportunities related to the logistical and operational management of lodging and resorts. This program of study also explores opportunities related to human resources, financial analysis, and marketing.

Secondary Courses for High School Credit

Odd Years

- Principles of Hospitality and Tourism
- Principles of Business, Marketing, Finance
- Tourism Marketing Concepts and Applications
- Sports and Entertainment Marketing

Even Years

- Global/Virtual Business
- Travel and Tourism Management
- Entrepreneurship
- Intro to Event Planning
- Practicum in Entrepreneurship

Postsecondary Opportunities

Associates Degrees

- Hotel/Motel Administration/ Management
- Business Administration and Management, General
- Tourism and Travel Services Management
- Business Administration and Management

Bachelor's Degrees

- Hospitality Administration/ Management, General
- Business Administration and Management, General
- Hotel and Restaurant Management
- Marketing/ Management, General

Master's, Doctoral, and Professional Degrees

- Hospitality Administration/ Management, General
- Business Administration and Management, General
- Hospitality Administration
- Marketing/ Management, General

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Family, Career, and Community Leaders of America or the American Hotel and Lodging Association

Work-Based Learning Activities

- Intern at a resort or lodging property
- Work at a hotel, summer camp, or theme park

Industry-Based Certifications

- Certified Hospitality & Tourism Management Professional
- General Management
- Hospitality Management- Lodging-Job Ready
- ManageFirst Professional



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
General and Operations Managers	\$107,640	18,679	20%
Lodging Managers	\$48,381	396	19%
Administrative Services Managers	\$96,138	2,277	21%
Meeting, Convention, and Event Planners	\$47,446	1,083	21%

Successful completion of the Lodging and Resort Management program of study will fulfill requirements of the Business and Industry endorsement. Revised – August 2022

Travel, Tourism, and Resort Management Course Information

Odd Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Principles of Business, Marketing and Finance	6060 (1 credit)	None	None
Principles of Hospitality and Tourism	7551 (1 credit)	None	None
Tourism Marketing Concepts and Application	7113 (1 credit)	None	None
Sports and Entertainment Marketing	7360 (0.5 credit)	None	None

Even Years

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Global/ Virtual Business	7577 (0.5 credit)/7460(0.5 credit)	None	None
Travel and Tourism Management	7573 (1 credit)	None	None
Introduction to Event Planning	7116 (1 credit)	None	None
Entrepreneuership	7110 (1 credit)	None	None

Level 4

COURSE NAME	COURSE NUMBER	PREREQUISITES	COREQUISITES
Practicum in Entrepreneurship	7119 (2 credits)	None	None

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