SCHERTZ - CIBOLO - UNIVERSAL CITY ISD

Career & Technical Education

Course Sequences

2023-2024

Version 11-8-22

Career & Technical Education Department
200 W Schlather
Cibolo, Texas 78108

MISSION

In support of the SCUCISD Mission and the TEA State Plan for Career and Technical Education, SCUCISD Career and Technical Education (CTE) department embraces quality instructional practices and works to develop and expand college and industry partnerships to prepare all students for post-secondary education and success in a challenging, globally competitive workforce.

2022-2023 Public Notification of Nondiscrimination in Career and Technical Education Programs

Schertz Cibolo Universal City ISD offers support to school district for career and technical education programs in Agriculture, Food, and Natural Resources; Architecture and Construction; Arts, Audio/Video Technology, and Communications; Business, Marketing and Finance; Education and Training; Health Science; Hospitality and Tourism; Human Services; Information Technology; Law, Public Safety, Corrections, and Security; Manufacturing; and Science, Technology, Engineering, and Mathematics. Admission to these programs is based on enrollment in Schertz Cibolo Universal secondary schools.

It is the policy of Schertz Cibolo Universal not to discriminate on the basis of race, color, national origin, sex or handicap in its CTE programs, services or activities as required by Title VI of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; and Section 504 of the Rehabilitation Act of 1973, as amended.

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

Schertz Cibolo Universal will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and CTE programs.

For information about your rights or grievance procedures, contact the Title IX Coordinator, Linda Cannon, and/or the Section 504 Coordinator, at 1060 Elbel Rd, Schertz, TX 78154, (210) 945-6200.

Schertz Cibolo Universal ofrece programas vocacionales en Agriculture, Food, and Natural Resources; Architecture and Construction; Arts, Audio/Video Technology, and Communications; Business, Marketing and Finance; Education and Training; Health Science; Hospitality and Tourism; Human Services; Information Technology; Law, Public Safety, Corrections, and Security; Manufacturing; and Science, Technology, Engineering, and Mathematics. La admisión a estos programas se basa en ESC-20 número de estudiantes en secundaria.

Es norma de Schertz Cibolo Universal no discriminar por motivos de raza, color, origen nacional, sexo o impedimento, en sus programas, servicios o actividades de CTE, tal como lo requieren el Título VI de la Ley de Derechos Civiles de 1964, según enmienda; el Título IX de las Enmiendas en la Educación, de 1972, y la Sección 504 de la Ley de Rehabilitación de 1973, según enmienda.

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

Schertz Cibolo Universal tomará las medidas necesarias para asegurar que la falta de habilidad en el uso del inglés no sea un obstáculo para la admisión y participación en todos los programas educativos y CTE.

Para información sobre sus derechos o procedimientos para quejas, comuníquese con el Coordinador del Título IX, Linda Cannon, y/o el Coordinador de la Sección 504, en 1060 Elbel Rd, Schertz, TX 78154, (210) 945-6200

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Career and Technical Education Student Organizations (CTSO) and CTE Extra-Curricular Organizations

Students are encouraged to participate in extended learning experiences in all course pathways offered in Schertz-Cibolo-Universal City ISD. There are Career and Technical Student Organizations (CTSOs) and other leadership or extra-curricular organizations. See your CTE Teacher for opportunities available in your career pathway.

	Family Career and Community Leaders of America (FCCLA) Involvement in FCCLA offers members the opportunity to expand their leadership potential and develop skills for life — planning, goal setting, problem solving, decision making and interpersonal communication — necessary in the home and workplace. https://www.texasfccla.org/
	SkillsUSA SkillsUSA is a national organization serving teachers and high school and college students who are preparing for careers in technical, skilled and service occupations, including health occupations and for further education. http://www.skillsusatx.org/
	Health Occupations Students of America (HOSA) HOSA's two-fold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people HOSA's goal is to encourage all health occupations instructors and students to join and be actively involved in the HOSA Partnership. https://texashosa.org/
	TAFE The Texas Association of Future Educators is a statewide student organization created to allow young men and women an opportunity to explore the teaching profession. The organization provides students the necessary knowledge to make informed decisions about pursuing careers in education. https://www.tafeonline.org/
	DECA Texas DECA prepares emerging leaders and entrepreneurs for careers in marketing, finance, hospitality and management in high schools and colleges around the globe. http://www.texasdeca.org/
	FFA FFA is a dynamic student-led leadership development organization for students of agricultural education. The FFA changes lives and prepares students for premier leadership, personal growth and career success https://www.texasffa.org/
	Business Professionals of America (BPA) Members compete in demonstrations of their business technology skills, develop their professional and leadership skills, network with one another and professionals across the nation, and get involved in the betterment of their community through good works projects. https://www.texasbpa.com/

Schertz-Cibolo-Universal City ISD Endorsement Options

Business and Industry Endorsement (See 4-yr plans in this booklet)

- Agriculture, Food & Natural Resources
- Architecture and Construction
- Arts, Audio/Video Technology and Communications
- Business Marketing, and Finance
- Hospitality and Tourism
- Information Technology
- Manufacturing
- Journalism & Communication: You must successfully complete four English elective credits, three of which must come from one of the following course areas: Advanced Journalism Newspaper, Advanced Journalism Yearbook, Public Speaking, OR Debate.

Public Service Endorsement (See 4-yr plans in this booklet)

- Education & Training
- Human Services
- Health Science
- Law, Public Safety, Corrections & Security
- ROTC

Science, Technology, Engineering and Math (STEM) Endorsement (See the STEM 4-yr plan in this booklet. Also, you can choice from the following)

- **Option 1:** ADVACNED MATH— (5) Math courses including Algebra I, Geometry, Algebra II and 2 or more advanced math courses. Math Models will NOT count as one of the 5 math courses.
- **Option 2:** ADVANCED SCIENCE— (5) Science courses including Biology, Chemistry, Physics and 2 or more advanced science courses

Arts & Humanities Endorsement (Choose from the following)

ARTS AND HUMANITIES
4 credits in a coherent sequence unless otherwise stated

Area of Interest	9th Grade	10th Grade	11th Grade/12th Grade Students must meet all pre-requisites
Social Studies	-World Geography -World History -AP Human Geography	-World Geography -World History -AP Human Geography -Psychology -AP Psychology -Sociology	-World Geography -World History -AP Human Geography -Psychology -AP Psychology -Sociology -U.S. Government -Texas Government -Economics
	You must successfully complete 5 credits of social studies courses. These courses may be at the regular, Pre-AP, AP, Dual Credit, or IB levels. Note that U.S. History must be taken during the junior year and U.S. Government and Economics must be taken during the senior year.		
Fine Arts	-Fine Arts Level 1A	-Fine Arts Level 2A	-Fine Arts Level 3A -Fine Arts Level 4A
	-Fine Arts Level 1A	-Fine Arts Level 2A	-Fine Arts Level 1B -Fine Arts Level 2B
English	You must successfully complete 4 credits from the courses listed: English IV AP English III English IV Dual Credit AP English IV Literary Genres IB Language A1 HL Creative Writing Independent Study in English		
Languages Other Than English (LOTE)	-LOTE Level 1	-LOTE Level 2 (same language)	-LOTE Level 3 (same language) -LOTE Level 4 (same language)
	-LOTE A - Level 1	-LOTE A - Level 2 (same language)	LOTE B – Level 1 LOTE B – Level 2 (same language)

Multidisciplinary Studies Endorsement (Choose from the following)

MULTIDISCIPLINARY
Requirements are stated below.

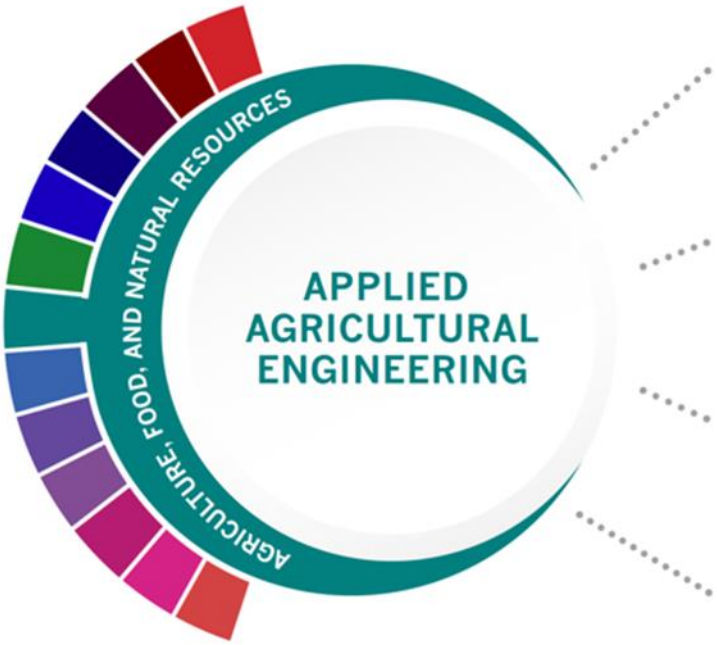
Program of Study	9th Grade	10th Grade	11th Grade	12th Grade
Career Preparation	You must successfully complete a minimum of 4 advanced elective credits (beyond level 1) that will prepare you for the workforce or post-secondary education OR You must complete 4 credits in each core area that are not considered electives. I.E. English I, II, III, and IV; World Geography, World History, U.S. History, Government, and Economics; Biology, Chemistry or Physics, and two additional science credits, Algebra I, Geometry, Algebra II, and one additional math credit.			
Advanced Academics	You must successfully complete the Foundation curriculum **INCLUDING** 4 AP, and/or Dual Credit credits from English, math, science, social studies, languages other than English OR fine arts.			
International Baccalaureate (IB – Clemens only)	You must successfully complete the Foundation curriculum **INCLUDING** four International Baccalaureate credits from English, math, science, social studies, languages other than English, **OR** fine arts. Students must follow the outlined course sequences for the IB program.			

Career and Technical Education Endorsements by Campus
In Schertz-Cibolo-Universal City ISD
2023-2024

Campus	Endorsement	Programs of Study Offered
Byron P. Steele II High School and Samuel Clemens High School	Business & Industry	Applied Agricultural Engineering
		Animal Science
		Plant Sciences
		Architectural Design
		Marketing and Sales
		Accounting and Financial Services
		Entrepreneurship
		Digital Communications
		Information Technology
		Networking
		Design and Multimedia Arts-Graphic Design
		Design and Multimedia Arts-Animation
		Design and Multimedia Arts-Video Game Design
		Culinary Arts
		Drone (Unmanned Flight)
		Advanced Manufacturing and Machinery Mechanics (Robotics)
	Public Services	Teaching and Training
		Family and Community Services
		Law Enforcement
		Healthcare Therapeutic Services
		Emergency Services
	STEM	Engineering Design
		Programming and Software Development
		Cyber Security

Career and Technical Education

Business & Industry Endorsement



Level 1	1701-Principles of Agriculture, Food, and Natural Resources
Level 2	1711- Agricultural Mechanics and Metal Technologies/Lab
Level 3	1712- Agricultural Structures Design and Fabrications/Lab
Level 4	1946- Agricultural Equipment Design and Fabrication/Lab 1769- Practicum in Agriculture, Food, and Natural Resources

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES of AGRICULTURE, FOOD AND NATURAL RESOURCES (1701)

Grade Placement: 9–12

Prerequisite: None

Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.

AGRICULTURAL MECHANICS AND METAL TECHNOLOGIES (1711)

Grade Placement: 10–12

Credit: 1

Prerequisite: None.

Recommended Prerequisite: Principles of Agriculture, Food, and Natural Resources.

Agricultural Mechanics and Metal Technologies is designed to develop an understanding of agricultural mechanics as it relates to safety and skills in tool operation, electrical wiring, plumbing, carpentry, fencing, concrete, and metal working techniques. To prepare for careers in agricultural power, structural, and technical systems, students must attain academic skills and knowledge; acquire technical knowledge and skills related to power, structural, and technical agricultural systems and the industry; and develop knowledge and skills regarding career opportunities, entry requirements, industry certifications, and industry expectations.

AGRICULTURAL STRUCTURES DESIGN AND FABRICATION (1712)

Grade Placement: 11–12

Credit: 1

Prerequisite: None.

Recommended Prerequisites: Agricultural Mechanics and Metal Technologies.

In Agricultural Structures Design and Fabrication, students will explore career opportunities, entry requirements, and industry expectations. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural structures design and fabrication.

AGIRCULTURE EQUIPMENT DESING AND FABRICATION/AGRICULTURE LABORATORY FIELD EXPERIENCE (1946)

Grade Placement: 11–12

Credit: 2

Prerequisite: None.

Recommended Prerequisites: Agricultural Structures Design and Fabrication.

In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment.

Certification Opportunity: AWS D1.1 and 1.9 (IBC)

PRACTICUM IN AG, FOOD, AND NATURAL RESOURCES (1769)

Grade Placement: 11–12

Credit: 2

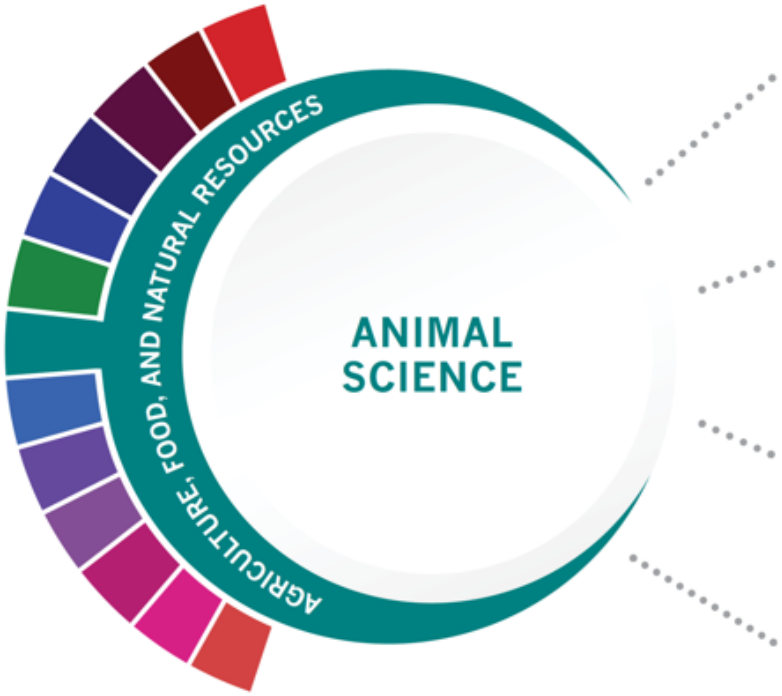
Prerequisite: None.

Recommended Prerequisite: A minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster.

Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster.

Career and Technical Education

Business & Industry Endorsement



Level 1	1701- Principles of Agriculture, Food, and Natural Resources
Level 2	1704- Small Animal Management 1703- Equine Science
Level 3	1702- Livestock Production 1717- Veterinary Medical Applications
Level 4	1705- Advanced Animal Science 1769- Practicum in Agriculture, Food, and Natural Resources

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES of AGRICULTURE, FOOD AND NATURAL RESOURCES (1701)
Grade Placement: 9–12
Prerequisite: None
Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.

SMALL ANIMAL MANAGEMENT (1704)
Grade Placement: 10–12
Credit: .5
Prerequisite: None.
In Small Animal Management, students will acquire knowledge and skills related to small animals and the small animal management industry. Small Animal Management may address topics related to small mammals such as dogs and cats, amphibians, reptiles, and birds.

EQUINE SCIENCE (1703)
Grade Placement: 10–12
Credit: .5
Prerequisite: None.
In Equine Science, students will acquire knowledge and skills related to equine animal systems and the equine industry. Equine Science may address topics related to horses, donkeys, and mules.

LIVESTOCK PRODUCTION (1702)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
In Livestock Production, students will acquire knowledge and skills related to livestock and the livestock production industry. Livestock Production may address topics related to beef cattle, dairy cattle, swine, sheep, goats, and poultry.

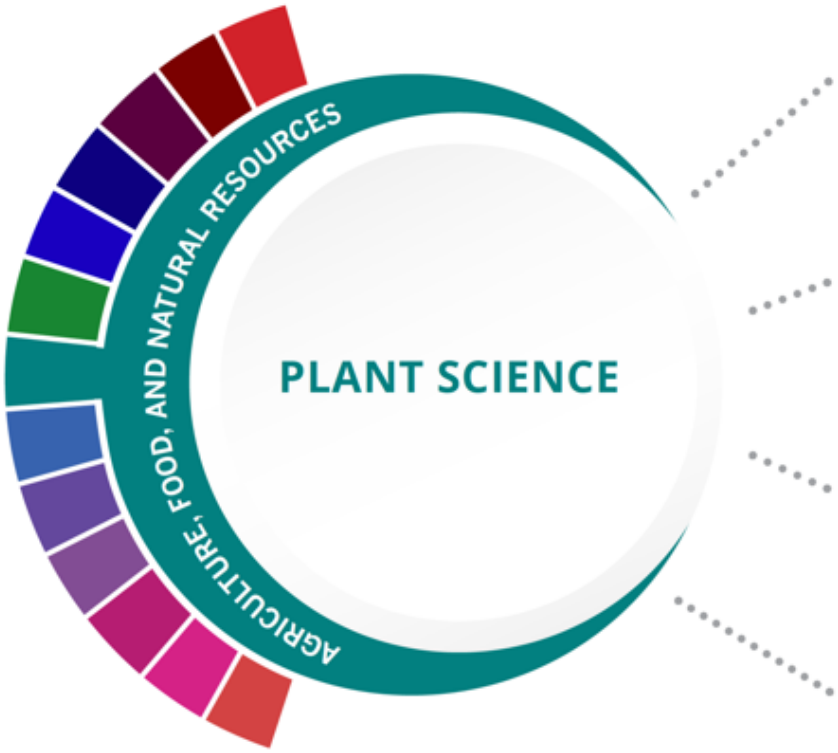
VETERINARY MEDICAL APPLICATIONS (1717)
Grade Placement: 11–12
Credit: 1
Prerequisites: Equine Science, Small Animal Management, or Livestock Production.
Veterinary Medical Applications covers topics relating to veterinary practices, including practices for large and small animal species.

ADVANCED ANIMAL SCIENCE (1705)
Grade Placement: 11–12
Credit: 1
Prerequisites: Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production.
Recommended Prerequisite: Veterinary Medical Applications.
Advanced Animal Science examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences.

PRACTICUM IN AG, FOOD, AND NATURAL RESOURCES (1769)
Grade Placement: 11–12
Credit: 2
Prerequisite: None.
Recommended Prerequisite: A minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster.
Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster.

Career and Technical Education

Business & Industry Endorsement



Level 1	1701- Principles of Agriculture, Food, and Natural Resources
Level 2	1911- Greenhouse Operation and Production 1706- Floral Design
Level 3	1708- Horticultural Science 1707- Advanced Floral Design
Level 4	1769- Practicum in Agriculture, Food, and Natural Resources 1716- Advanced Plant and Soil Science

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES of AGRICULTURE, FOOD AND NATURAL RESOURCES (1701)
Grade Placement: 9–12
Prerequisite: None
Principles of Agriculture, Food, and Natural Resources will allow students to develop knowledge and skills regarding career and educational opportunities, personal development, globalization, industry standards, details, practices, and expectations.

GREENHOUSE OPERATION AND PRODUCTION (1911)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Greenhouse Operation and Production is designed to develop an understanding of greenhouse production techniques and practices. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.

FLORAL DESIGN (1706)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Floral Design is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. Through the analysis of artistic floral styles and historical periods, students will develop respect for the traditions and contributions of diverse cultures. Students will respond to and analyze floral designs, thus contributing to the development of lifelong skills of making informed judgments and evaluations.

HORTICULTURAL SCIENCE (1708)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production.

Advanced Floral Design (1707)
Grade Placement: 11-12
Credit: 1
Prerequisite: Floral Design
In this course, students build on the knowledge from the Floral Design course and are introduced to more advanced floral design concepts, with an emphasis on specialty designs and specific occasion planning. This course focuses on building skills in advanced floral design and providing students with a thorough understanding of the design elements and planning techniques used to produce unique specialty floral designs that support the goals and objectives of a specific occasion or event. Through the analysis and evaluation of various occasion and event types, students explore the design needs and expectations of clients and propose and evaluate appropriate creations. From conception to evaluation, students are challenged to create and design appropriate specialty floral designs that meet the needs of the client. Furthermore, an emphasis on budgetary adherence and entrepreneurship equips students with many of the necessary skills needed for success in floral enterprises.

ADVANCED PLANT AND SOIL SCIENCE (1716)

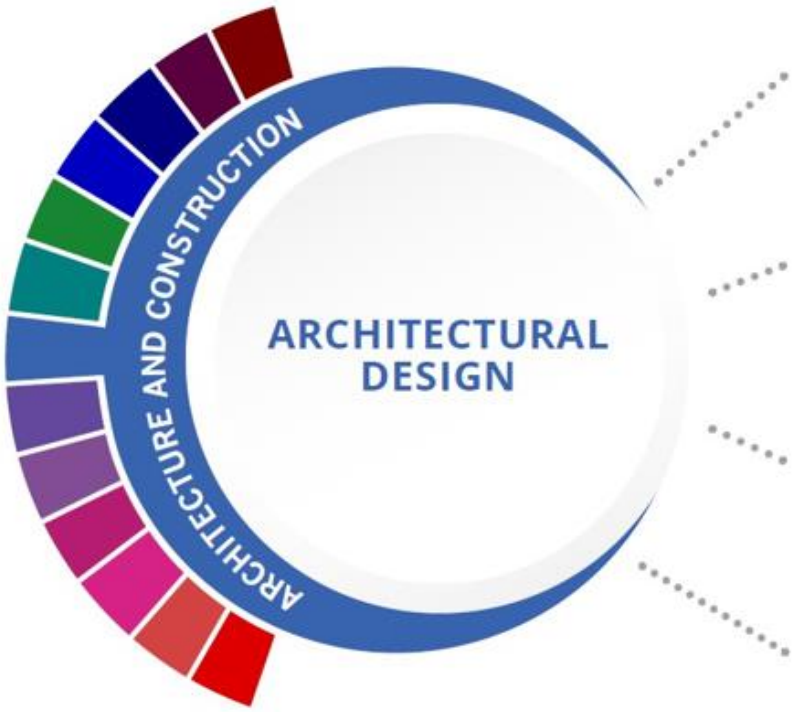
Grade Placement: 11–12
Credit: 1
Prerequisite: None.
Recommended Prerequisites: Biology, Integrated Physics and Chemistry, Chemistry, or Physics and a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster.
Advanced Plant and Soil Science provides a way of learning about the natural world.
Students should know how plant and soil science has influenced a vast body of knowledge, that there are still applications to be discovered, and that plant and soil science is the basis for many other fields of science. To prepare for careers in plant and soil science, students must attain academic skills and knowledge, acquire technical knowledge and skills related to plant and soil science and the workplace.

PRACTICUM IN AG, FOOD, AND NATURAL RESOURCES (1769)

Grade Placement: 11–12
Credit: 2
Prerequisite: None.
Recommended Prerequisite: A minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster.
Practicum in Agriculture, Food, and Natural Resources is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources Career Cluster.

Career and Technical Education

Business & Industry Endorsement



Level 1	1787- Principles of Architecture
Level 2	1784- Architectural Design I
Level 3	1778- Architectural Design II
Level 4	1794- Practicum in Architectural Design

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.

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF ARCHITECTURE (1787)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, education, and career information to set and achieve realistic career and educational goals. Job-specific training can be provided through training modules that identify career goals in trade and industry areas. Classroom studies include topics such as safety, work ethics, communication, information technology applications, systems, health, environment, leadership, teamwork, ethical and legal responsibility, employability, and career development and include skills such as problem solving, critical thinking, and reading technical drawings.

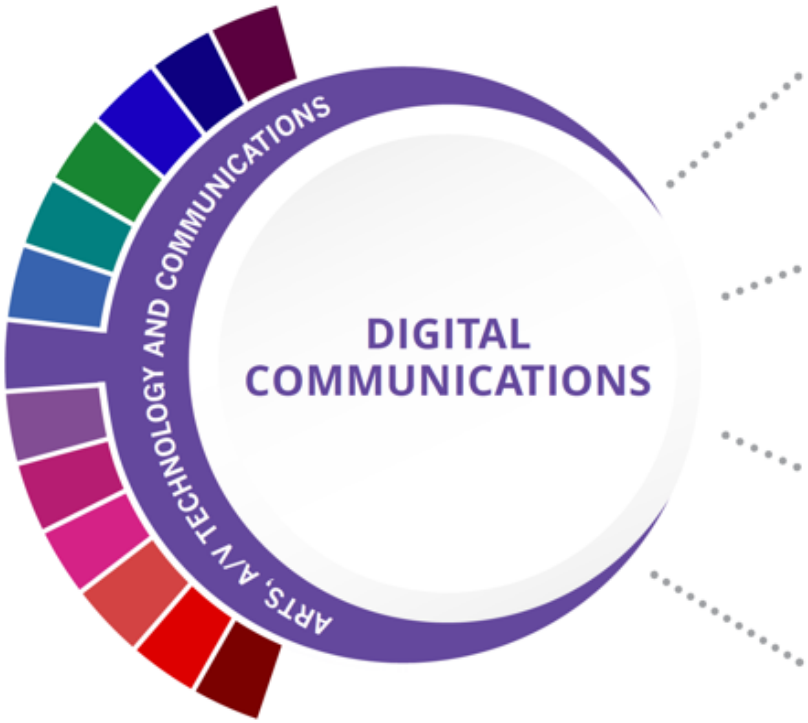
ARCHITECTURAL DESIGN I (1784)
Grade Placement: 10–12
Credit: 1
Prerequisites: Algebra l and English l.
Recommended Prerequisites: Geometry, Principles of Architecture
In Architectural Design I, students will gain knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design I include the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

ARCHITECTURAL DESIGN II (1778)
Grade Placement: 11–12
Credit: 2
Prerequisites: Architectural Design l or Advanced Interior Design and Geometry.
Recommended Prerequisites: Principles of Architecture and Principles of Construction.
In Architectural Design II, students will gain advanced knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design II includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

PRACTICUM IN ARCHITECTURAL DESIGN (1794)
Grade Placement: 12
Credit: 2
Prerequisite: Architectural Design ll.
Practicum in Architectural Design is an occupationally specific course designed to provide technical instruction in architectural design. Safety and career opportunities are included in addition to work ethics and architectural design study.

Career and Technical Education

Business & Industry Endorsement



Level 1	1902- Principles of Arts, A/V Technology, and Communications 1700- Professional Communications
Level 2	1721- Audio/Video Production I/Lab
Level 3	1718- Audio Video Production II/Lab
Level 4	1921- Practicum of Audio/Video Production

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

SkillsUSA

BUSINESS PROFESSIONALS of AMERICA

Giving Purpose to Potential

PRINCIPLES OF ARTS, A/V TECHNOLOGY, AND COMMUNICATIONS (1902)
Grade Placement: 9
Credits: 1
Prerequisite: None.
The goal of this course is for the student understands arts, audio/video technology, and communications systems. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in this cluster and the knowledge, skills, and educational requirements for those opportunities.

PROFESSIONAL COMMUNICATIONS (1700)
Grade Placement: 9–12
Credits: .5
Prerequisite: None.
Professional Communications blends written, oral, and graphic communication in a career based environment. Careers in the global economy require individuals to be creative and have a strong background in computer and technology applications, a strong and solid academic foundation, and a proficiency in professional oral and written communication. Within this context, students will be expected to develop and expand the ability to write, read, edit, speak, listen, apply software applications, manipulate computer graphics, and conduct Internet research.

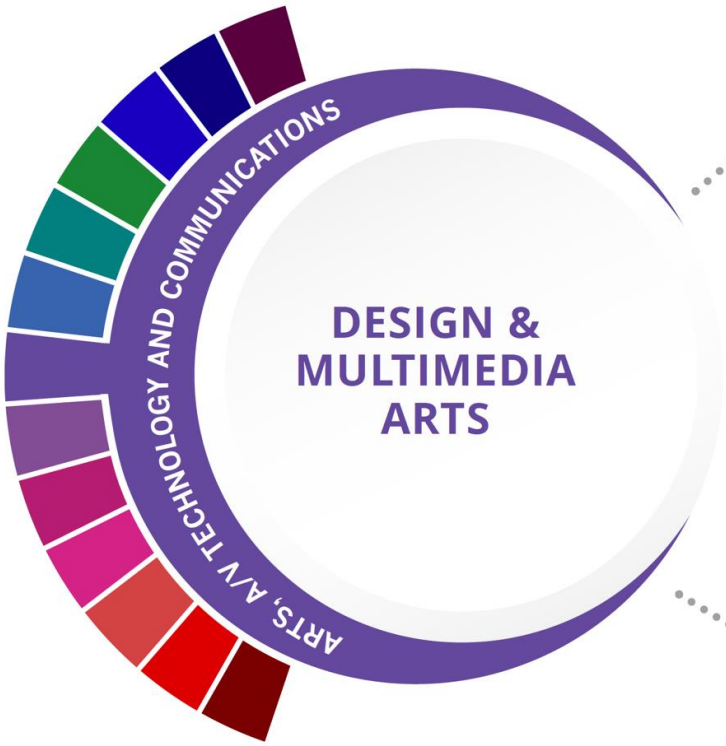
AUDIO/VIDEO PRODUCTION I (1721)
Grade Placement: 9–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Arts, Audio/Video Technology, and Communications.
Recommended Corequisite: Audio/Video Production I Lab.
In addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on pre-production, production, and post-production audio and video products.

AUDIO/VIDEO PRODUCTION II /AUDIO/VIDEO PRODUCTION II w/Lab (1718 & 1912)
Grade Placement: 10–12
Credits: 2
Prerequisite: Audio/Video Production I.
Corequisite: Audio/Video Production II.
Building upon the concepts taught in Audio/Video Production, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on pre-production, production, and postproduction products. Through diverse forms of storytelling and production, students will exercise and develop creativity, intellectual curiosity, and critical-thinking, problem-solving, and collaborative skills. This course may be implemented in an audio format or a format with both audio and video. Requiring a lab requisite for the course affords necessary time devoted specifically to the production and post-production process.

PRACTICUM IN AUDIO/VIDEO PRODUCTION (1921)
Grade Placement: 11–12
Credits: 2
Prerequisites: Audio/Video Production II and Audio/Video Production II Lab.
Building upon the concepts taught in Audio/Video Production II and its corequisite Audio/Video Production II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production audio and video products in a professional environment. This course may be implemented in an advanced audio/video or audio format. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

Career and Technical Education

Business & Industry Endorsement



Level 1	1902- Principles of Arts, A/V Technology, and Communications
Level 2	1722- Graphic Design and Illustration I 1723- Animation I 1724- Video Game Design
Level 3	1914- Graphic Design and Illustration II/Lab 1903- Animation II 1989- Video Game Programming 1758- Fashion Design II
Level 4	1915- Practicum in Graphic Design and Illustration 1905- Practicum in Animation 1990- Advanced Video Game Programming 1752/1753- Career Preparation I

The Design and Multimedia Arts program of study explores the occupations and educational opportunities associated with designing or creating graphics to meet specific commercial or promotional needs, such as packaging, displays, or logos. This program of study may also include exploration into designing clothing and accessories, and creating special effects, animation, or other visual images using film, video, computers, or other electronic tools and media, for use in computer games, movies, music videos, and commercials.

BUSINESS PROFESSIONALS of AMERICA — Giving Purpose to Potential

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

FCCLA — Family, Career and Community Leaders of America — The Ultimate Leadership Experience

PRINCIPLES OF ARTS, A/V TECHNOLOGY, AND COMMUNICATIONS (1902)
Grade Placement: 9
Credits: 1
Prerequisite: None.
The goal of this course is for the student understands arts, audio/video technology, and communications systems. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in this cluster and the knowledge, skills, and educational requirements for those opportunities.

GRAPHIC DESIGN AND ILLUSTRATION I (1722)
Grade Placement: 10–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Arts, Audio/Video Technology, and Communications.
Recommended Corequisite: Graphic Design and Illustration l Lab.
Within this context, in addition to developing knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on fundamental elements and principles of visual art and design.

ANIMATION I (1723)
Grade Placement: 10–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Art l or Principles of Art, Audio/Video Technology, and Communications.
Recommended Corequisite: Animation I Lab.
In addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the history and techniques of the animation industry.

VIDEO GAME DESIGN I (1724)
Grade Placement: 9–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Art, Audio/Video Technology, and Communications.
Video Game Design will allow students to explore one of the largest industries in the global marketplace and the new emerging careers it provides in the field of technology. Students will learn gaming, computerized gaming, evolution of gaming, artistic aspects of perspective, design, animation, technical concepts of collision theory, and programming logic. Students will participate in a simulation of a real video game design team while developing technical proficiency in constructing an original game design.

GRAPHIC DESIGN AND ILLUSTRATION II /GRAPHIC DESIGN AND ILLUSTRATION II w/Lab (1914 & 1915)
Grade Placement: 10–12
Credits: 2
Prerequisite: None.
Recommended Prerequisite: Principles of Arts, Audio/Video Technology, and Communications.
Corequisite: Graphic Design and Illustration l.
Within this context, in addition to developing knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on fundamental elements and principles of visual art and design

ANIMATION II (1903)
Grade Placement: 11–12
Credits: 1
Prerequisite: Animation l.
Corequisite: Animation ll.
In addition to developing advanced knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to create two- and three-dimensional animations. The instruction also assists students seeking careers in the animation industry. Districts are encouraged to offer this lab in a consecutive block with Animation II to allow students sufficient time to master the content of both courses.

VIDEO GAME PROGRAMMING (1989)
Grade Placement: 10–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Video Game Design I
Video Game Programming expands on the foundation created in Video Game Design through programming languages such as: C# programming, XNA game studio, Java, and Android App. In this course, students will investigate the inner workings of a fully functional role-playing game (RPG) by customizing playable characters, items, maps, and chests and eventually applying customizations by altering and enhancing the core game code.

FASHION DESIGN II /FASHION DESIGN II w/Lab (1758 & 1919) Current class of 2023 and 2024 ONLY
Grade Placement: 11–12
Credits: 2
Prerequisite: Fashion Design l.
Corequisite: Fashion Design ll.
Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

PRACTICUM IN AUDIO/VIDEO PRODUCTION (1921)
Grade Placement: 11–12
Credits: 2
Prerequisites: Audio/Video Production II and Audio/Video Production II Lab.
Building upon the concepts taught in Audio/Video Production II and its corequisite Audio/Video Production II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production audio and video products in a professional environment. This course may be implemented in an advanced audio/video or audio format. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

PRACTICUM IN ANIMATION (1905)
Grade Placement: 11–12
Credits: 2
Prerequisites: Animation ll and Animation ll .
Building upon the concepts taught in Animation II and its corequisite Animation II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production animation products in a professional environment. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities

PRACTICUM IN GRAPHIC DESING AND ILLUSTRATION (1915)
Grade Placement: 10–12
Credits: 2
Prerequisites: Graphic Design and Illustration ll and Graphic Design and Illustration ll Lab.
In addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop a technical understanding of the industry with a focus on skill proficiency. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities

ADVANACED VIDEO GAME PROGRAMMING (1990)
Grade Placement: 10-12
Credits: 1
Advanced Video Game Programming students will be introduced to mobile application design and programming using Java and Eclipse for Android devices. Time will be spent learning basic Java programming and working with Android Studio to develop real working apps. Using Unity as an introduction to 3D game development, students will have exposure to and an understanding of: object-oriented programming concepts; game development skill with programs such as Unity; 3D modeling with programs such as Blender; image manipulation with programs such as GIMP; concepts related to the design process; and the ability to communicate and collaborate on group-based projects.

Career and Technical Education

Business & Industry Endorsement

Level 1	1728- Principles of Business, Marketing, and Finance
Level 2	1746- Fashion Marketing 1747- Sports and Entertainment Marketing
Level 3	1938- Social Media Marketing 1748- Advertising
Level 4	1926- Practicum in Marketing 1752/1753 Career Preparation I/II

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

DECA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF BUSINESS, MARKETING, AND FINANCE (1728)
Grade Placement: 8–11
Credits: 1
Prerequisite: None.
In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economies and private enterprise systems, the impact of global business, the marketing of goods and services, advertising, and product pricing. Students analyze the sales process and financial management principles. This course allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in business, marketing, and finance.

FASHION MARKETING (1746)
Grade Placement: 9–12
Credit: .5
Prerequisite: None.
Recommended Prerequisite: Principles of Business, Marketing, and Finance.
Fashion Marketing is designed to provide students with knowledge of the various business functions in the fashion industry. Students in Fashion Marketing will gain a working knowledge of promotion, textiles, merchandising, mathematics, selling, visual merchandising, and career opportunities.

SPORTS AND ENTERTAINMENT MARKETING (1747)
Grade Placement: 9–12
Credit: .5
Prerequisite: None.
Recommended Prerequisite: Principles of Business, Marketing, and Finance.
Sports and Entertainment Marketing will provide students with a thorough understanding of the marketing concepts and theories that apply to sports and entertainment. The areas this course will cover include basic marketing concepts, publicity, sponsorship, endorsements, licensing, branding, event marketing, promotions, and sports and entertainment marketing strategies.

SOCIAL MEDIA MARKETING (1938)
Grade Placement: 9–12
Credit: .5
Prerequisite: None.
Recommended Prerequisite: Principles of Business, Marketing and Finance or any marketing course.
Social Media Marketing is designed to look at the rise of social media and how marketers are integrating social media tools in their overall marketing strategy. The course will investigate how the marketing community measures success in the new world of social media. Students will manage a successful social media presence for an organization, understand techniques for gaining customer and consumer buy-in to achieve marketing goals, and properly select social media platforms to engage consumers and monitor and measure the results of these efforts.

ADVERTISING (1748)
Grade Placement: 9–12
Credit: .5
Prerequisite: None.
Recommended Prerequisite: Principles of Business, Marketing, and Finance.
Advertising is designed as a comprehensive introduction to the principles and practices of advertising. Students will gain knowledge of techniques used in current advertising, including print, broadcast, and digital media. The course explores the social, cultural, ethical, and legal issues of advertising, historical influences, strategies, media decision processes as well as integrated marketing communications, and careers in advertising and sales promotion. The course provides an overview of how communication tools can be used to reach target audiences and increase consumer knowledge.

PRACTICUM IN MARKETING (1926)
Grade Placement: 11–12
Credit: 2
Prerequisite: None.
Recommended Prerequisite: Principles of Business, Marketing, and Finance.
Practicum in Marketing is a series of dynamic activities that focus on the customer to generate a profitable exchange. Students will gain knowledge and skills that help them to be proficient in one or more of the marketing functional areas associated with distribution, financing, marketing information management, pricing, product planning, promotion, purchasing, risk management, and selling skills. Students will integrate skills from academic subjects, information technology, interpersonal communication, and management training to make responsible decisions. The practicum course is a paid or unpaid experience for students participating in a coherent sequence of career and technical courses in marketing.

Career and Technical Education

Business & Industry Endorsement

Level 1	1728- Principles of Business, Marketing, and Finance 1733- Business Information Management I
Level 2	1735- Accounting I
Level 3	1736- Accounting II
Level 4	1900- Financial Mathematics 1904- Practicum in Business Management 1752/1753-Career Preparation I/II

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.

DECA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF BUSINESS, MARKETING, AND FINANCE (1728)
Grade Placement: 8–11
Credits: 1
Prerequisite: None.
In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economies and private enterprise systems, the impact of global business, the marketing of goods and services, advertising, and product pricing. Students analyze the sales process and financial management principles. This course allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in business, marketing, and finance.

BUSINESS INFORMATION MANAGEMENT 1 (BIM I) (1733)
Grade Placement: 9–12
Credits: 1
Prerequisite: None.
Recommended Prerequisite: Touch System Data Entry.
Recommended Corequisite: Business Lab.
In Business Information Management I, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce and postsecondary education. Students apply technical skills to address business applications of emerging technologies, create word processing documents, develop a spreadsheet, formulate a database, and make an electronic presentation using appropriate software.

ACCOUNTING I (1735)
Grade Placement: 10–12
Credit: 1
Prerequisites: None.
Recommended Prerequisites: Principles of Business, Marketing, and Finance.
In Accounting I, students will investigate the field of accounting, including how it is impacted by industry standards as well as economic, financial, technological, international, social, legal, and ethical factors. Students will reflect on this knowledge as they engage in the process of recording, classifying, summarizing, analyzing, and communicating accounting information. Students will formulate and interpret financial information for use in management decision making. Accounting includes such activities as bookkeeping, systems design, analysis, and interpretation of accounting information.

ACCOUNTING II (1736)
Grade Placement: 11–12
Credit: 1
Prerequisites: Accounting I.
In Accounting II, students will continue the investigation of the field of accounting, including how it is impacted by industry standards as well as economic, financial, technological, international, social, legal, and ethical factors. Students will reflect on this knowledge as they engage in various managerial, financial, and operational accounting activities. Students will formulate, interpret, and communicate financial information for use in management decision making. Students will use equations, graphical representations, accounting tools, spreadsheet software, and accounting systems in real-world situations to maintain, monitor, control, and plan the use of financial resources.

FINANCIAL MATHEMATICS (1900)
Grade Placement: 10–12
Credit: 1
Prerequisite: Algebra l.
Financial Mathematics is a course about personal money management. Students will apply critical-thinking skills to analyze personal financial decisions based on current and projected economic factors.

PRACTICUM IN BUSINESS MANAGEMENT (1904)

Grade Placement: 11–12
Credits: 2
Prerequisite: None.
Recommended Prerequisites: Touch System Data Entry and Business Management or
Business Information Management ll.
Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences occur in a paid or unpaid arrangement and a variety of locations appropriate to the nature and level of experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies. Students develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

CAREER PREPARATION 1 (1752)

Grade Placement: 11-12
Credit: 2-3
Career Preparation I provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

Career and Technical Education

Business & Industry Endorsement

Level 1	1728- Principles of Business, Marketing, and Finance
Level 2	1733- Business Information Management 1749- Entrepreneurship
Level 3	1726- Project-Based Research
Level 4	1904- Practicum in Business Management 1752/1753- Career Preparation I/II

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

DECA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF BUSINESS, MARKETING, AND FINANCE (1728)
Grade Placement: 8–11
Credits: 1
Prerequisite: None.
In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economies and private enterprise systems, the impact of global business, the marketing of goods and services, advertising, and product pricing. Students analyze the sales process and financial management principles. This course allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in business, marketing, and finance.

BUSINESS MANAGEMENT (1729)
Grade Placement: 10–12
Credits: 1
Prerequisite: None.
Business Management is designed to familiarize students with the concepts related to business management as well as the functions of management, including planning, organizing, staffing, leading, and controlling. Students will also demonstrate interpersonal and project-management skills.

ENTREPRENEURSHIP (1749)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisites: Principles of Business, Marketing, and Finance.
Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services.

PROJECT-BASED RESEARCH (1726)
Grade Placement: 11-12
Credit: 1
Project-Based Research is a course for students to research a real-world problem. Students are matched with a mentor from the business or professional community to develop an original project on a topic related to career interests. Students use scientific methods of investigation to conduct in-depth research, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

PRACTICUM IN BUSINESS MANAGEMENT (1904)
Grade Placement: 11–12
Credits: 2
Prerequisite: None.
Recommended Prerequisites: Business Management or Business Information Management ll.
Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences occur in a paid or unpaid arrangement and a variety of locations appropriate to the nature and level of experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies. Students develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

CAREER PREPARATION 1 (1752)
Grade Placement: 11-12
Credit: 2-3
Career Preparation I provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

Career and Technical Education

Business & Industry Endorsement

Level 1	1909- Introduction to Culinary Arts
Level 2	1774- Culinary Arts
Level 3	1775- Advanced Culinary Arts
Level 4	1906- Food Science 1789- Practicum in Culinary Arts

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

INTRODUCTION TO CULINARY ARTS (1909)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Hospitality and Tourism.
Introduction to Culinary Arts will emphasize the principles of planning, organizing, staffing, directing, and controlling the management of a variety of food service operations. The course will provide insight into the operation of a well-run restaurant. Introduction to Culinary Arts will provide insight into food production skills, various levels of industry management, and hospitality skills. This is an entry level course for students interested in pursuing a career in the food service industry. This course is offered as a classroom and laboratory-based course.

CULINARY ARTS (1774)
Grade Placement: 10–12
Credit: 2
Prerequisite: None.
Recommended Prerequisites: Principles of Hospitality and Tourism and Introduction to Culinary Arts.
Culinary Arts begins with the fundamentals and principles of the art of cooking and the science of baking and includes management and production skills and techniques. Students can pursue a national sanitation certification or other appropriate industry certifications. This course is offered as a laboratory-based course.

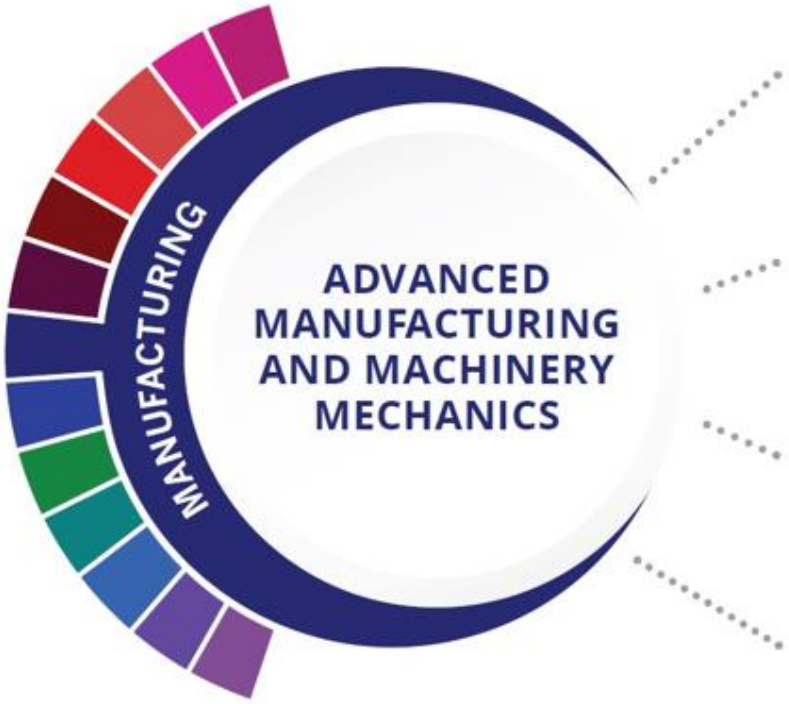
ADVANCED CULINARY ARTS (1775)
Grade Placement: 10–12
Credit: 2
Prerequisite: Culinary Arts.
Advanced Culinary Arts will extend content and enhance skills introduced in Culinary Arts by in-depth instruction of industry-driven standards to prepare students for success in higher education, certifications, and/or immediate employment.

FOOD SCIENCE (1906)
Grade Placement: 11–12
Credit: 1
Prerequisites: Three units of science, including Chemistry and Biology.
Recommended Prerequisite: Principles of Hospitality and Tourism.
In Food Science students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Food Science is the study of the nature of foods, the causes of deterioration in food products, the principles underlying food processing, and the improvement of foods for the consuming public.
Note: This course satisfies a science credit requirement for students on the Foundation High School Program.

PRACTICUM IN CULINARY ARTS (1789)
Grade Placement: 11–12
Credit: 2
Prerequisite: Culinary Arts.
Practicum in Culinary Arts is a unique practicum that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Practicum in Culinary Arts integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing culinary art based workplace.

Career and Technical Education

Business & Industry Endorsement



Level 1	1788- Principles of Applied Engineering
Level 2	1907- Robotics I
Level 3	1929- Robotics II
Level 4	1933- Practicum in Manufacturing 1752/1753- Career Preparation I/II

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

FIRST

VEX ROBOTICS COMPETITION
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BOOSTING ENGINEERING SCIENCE & TECHNOLOGY

PRINCIPLES OF APPLIED ENGINEERING (1788)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.

ROBOTICS I (1907)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Applied Engineering.
In Robotics I, students will transfer academic skills to component designs in a project based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

ROBOTICS II (1929)
Grade Placement: 10–12
Credit: 1
Prerequisite: Robotics l.
In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.

PRACTICUM IN MANUFACTURING (1933)
Grade Placement: 12
Credit: 2
Prerequisite: None.
The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

CAREER PREPARATION 1 (1752)
Grade Placement: 11-12
Credit: 2-3
Career Preparation I provides opportunities for students to participate in a work-based learning experience that combines classroom instruction with business and industry employment experiences. The goal is to prepare students with a variety of skills for a changing workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.

Career and Technical Education

Business & Industry Endorsement

Level 1	1743- Principles of Information
Level 2	1740- Computer Maintenance/Lab
Level 3	1741- Computer Technician Practicum
Level 4	1719- Practicum of Information Technology 1726- Project-Based Research 1752/1753- Career Preparation I/II

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

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF INFORMATION TECHNOLOGY (1743)
Grade Placement: 9–10
Credit: 1
Prerequisites: None
In Principles of Information Technology, students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

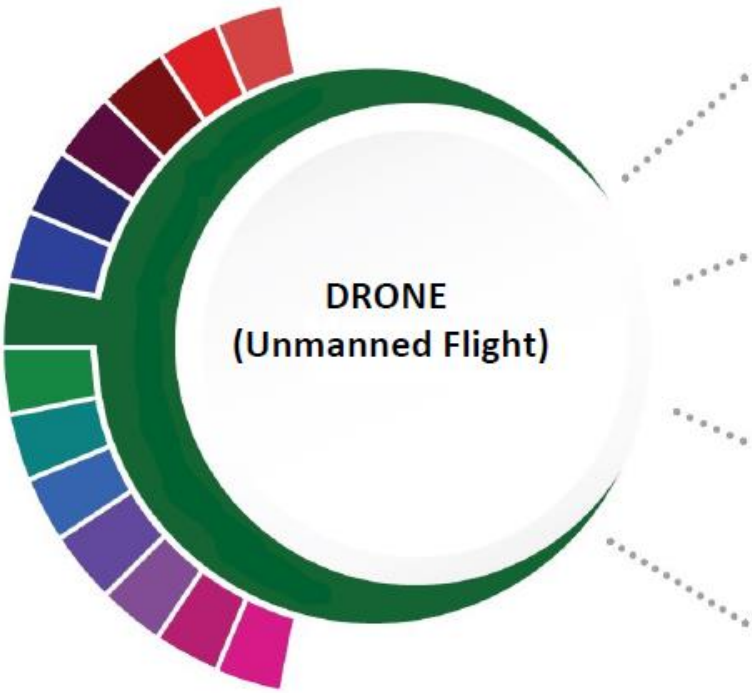
COMPUTER MAINTENANCE w/Lab (1740 & 1923)
Grade Placement: 10–12
Credit: 2
Prerequisite: None.
Recommended Prerequisite: Principles of Information Technology.
Corequisite: Computer Maintenance.
In Computer Maintenance Lab, students will acquire knowledge of computer maintenance and creating appropriate documentation. Students will analyze the social responsibility of business and industry regarding the significant issues relating to the environment, ethics, health, safety, and diversity in society and in the workplace as related to computer maintenance. Students will apply technical skills to address the IT industry and emerging technologies. Districts are encouraged to offer this course in a consecutive block with Computer Maintenance to allow students sufficient time to master the content of both courses.

COMPUTER TECHNICIAN PRACTICUM (1741)
Grade Placement: 10–12
Credit: 2
Prerequisite: None.
Recommended Prerequisites: Principles of Information Technologies, Computer Maintenance, and Computer Maintenance Lab.
In the Computer Technician Practicum, students will gain knowledge and skills in computer technologies, including advanced knowledge of electrical and electronic theory, computer principles, and components related to the installation, diagnosis, service, and repair of computer-based technology systems. Students will reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an instructor, with an industry mentor, or both.

PRACTICUM IN INFORMATION TECHNOLOGY (1719)
Grade Placement: 12
Credit: 2
Prerequisite: A minimum of two high school information technology (IT) courses.
In the Practicum in Information Technology, students will gain advanced knowledge and skills in the application, design, production, implementation, maintenance, evaluation, and assessment of products, services, and systems. Knowledge and skills in the proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an industry mentor, as an unpaid or paid internship, as part of a capstone project, or as career preparation.

Career and Technical Education

Business & Industry Endorsement



Level 1 1910 Introduction to Aerospace and Aviation

Level 2 1907 Robotics I

Level 3 1929 Robotics II

Level 4 1912 Practicum in Drones Aviation

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

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

INTRODUCTION TO AEROSPACE AMD AVIATION (1910)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
The Introduction to Aerospace and Aviation course will provide the foundation for advanced exploration in the areas of professional pilot, aerospace engineering, and unmanned aircraft systems. Students will learn about the history of aviation, from Leonardo da Vinci's ideas about flight to the Wright brothers and the space race. Along the way students will learn about the innovations and technological developments that have made today's aviation and aerospace industries possible. The course includes engineering practices, the design process, aircraft structure, space vehicles past and present, and a look toward future space exploration. Students will also learn about the wide variety of exciting and rewarding careers available to them. The Introduction to Aerospace and Aviation course will inspire students to consider aviation and other aerospace careers while laying the foundation for continued study in grades 10-12.

ROBOTICS I (1907)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Applied Engineering.
In Robotics I, students will transfer academic skills to component designs in a project based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

ROBOTICS II (1929)
Grade Placement: 10–12
Credit: 1
Prerequisite: Robotics I.
In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.

PRACTICUM IN DRONE AVIATION (1912)
Grade Placement: 12
Credit: 2
Prerequisite: None.
The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

Career and Technical Education

Public Service Endorsement

Level 1	1768- Principles of Human Services
Level 2	1779- Child Development
Level 3	1771- Instructional Practices
Level 4	1772- Practicum in Education and Training

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

TAFE
Texas Association of Future Educators

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PRINCIPLES OF HUMAN SERVICES (1768)

Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Principles of Human Services is a laboratory course that will enable students to investigate careers in the Human Services Career Cluster, including counseling and mental health, early childhood development, family and community, personal care, and consumer services. Each student is expected to complete the knowledge and skills essential for success in high-skill, high-wage, or high-demand human services careers.

CHILD DEVELOPMENT (1779)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Human Services.
Child Development is a technical laboratory course that addresses knowledge and skills related to child growth and development from prenatal through school-age children, equipping students with child development skills. Students use these skills to promote the well-being and healthy development of children and investigate careers related to the care and education of children.

INSTRUCTIONAL PRACTICES (1771 – Ready, Set, Teach I)
Grade Placement: 11–12
Credit: 2
Prerequisite: None.
Recommended Prerequisites: Principles of Education and Training and Human Growth and Development.
Instructional Practices is a field-based (practicum) internship that provides students with background knowledge of child and adolescent development as well as principles of effective teaching and training practices. Students work under the joint direction and supervision of both a teacher with knowledge of early childhood, middle childhood, and adolescence education and exemplary educators or trainers in direct instructional roles with elementary-, middle school-, and high school-aged students.
Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, develop materials for educational environments, assist with record keeping, and complete other responsibilities of teachers, trainers, paraprofessionals, or other educational personnel.

PRACTICUM IN EDUCATION AND TRAINING (1772 – Ready, Set, Teach II)
Grade Placement: 12
Credit: 2
Prerequisite: Instructional Practices.
Recommended Prerequisites: Principles of Education and Training and Human Growth and Development.
Practicum in Education and Training is a field-based internship that provides students background knowledge of child and adolescent development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher with knowledge of early childhood, middle childhood, and adolescence education and exemplary educators in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of classroom teachers, trainers, paraprofessionals, or other educational personnel.

Career and Technical Education

Public Service Endorsement

Level 1	1768- Principles of Human Services
Level 2	1779- Child Development
Level 3	1757- Counseling and Mental Health 1781- Practicum in Human Services I
Level 4	1786- Practicum in Human Services II Project-Based Research

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

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

TAFE Texas Association of Future Educators

FCCLA Family, Career and Community Leaders of America The Ultimate Leadership Experience

PRINCIPLES OF HUMAN SERVICES (1768)

Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Principles of Human Services is a laboratory course that will enable students to investigate careers in the Human Services Career Cluster, including counseling and mental health, early childhood development, family and community, personal care, and consumer services. Each student is expected to complete the knowledge and skills essential for success in high-skill, high-wage, or high-demand human services careers.

CHILD DEVELOPMENT (1779)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Human Services.
Child Development is a technical laboratory course that addresses knowledge and skills related to child growth and development from prenatal through school-age children, equipping students with child development skills. Students use these skills to promote the well-being and healthy development of children and investigate careers related to the care and education of children.

COUNSELING AND MENTAL HEALTH (1757)
Grade Placement: 11–12
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Human Services.
In Counseling and Mental Health, students model the knowledge and skills necessary to pursue a counseling and mental health career through simulated environments. Students are expected to apply knowledge of ethical and legal responsibilities, limitations on their actions and responsibilities, and the implications of their actions. Students understand how professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.

PRACTICUM IN HUMAN SERVICES I AND II (1781/1786) – PALS I and PALS II)
Grade Placement: 11–12
Credit: 2
Prerequisite: None.
Practicum in Human Services provides background knowledge and occupation-specific training that focuses on the development of consumer services, early childhood development and services, counseling and mental health services, and family and community-services careers. Content for Practicum in Human Services is designed to meet the occupational preparation needs and interests of students and should be based upon the knowledge and skills selected from two or more courses in a coherent sequence in the human services cluster. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.
Certification Opportunity:

PROJECT-BASED RESEARCH (1726)
Grade: 11 – 12
Credit: 1
Project-Based Research is a course for students to research a real-world problem. Students are matched with a mentor from the business or professional community to develop an original project on a topic related to career interests. Students use scientific methods of investigation to conduct in-depth research, compile findings, and present their findings to an audience that includes experts in the field. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

Career and Technical Education

Public Service Endorsement

Level 1	1754- Principles of Health Science
Level 2	1755- Medical Terminology
Level 3	1756- Health Science Theory (Required for Practicum)
Level 4	1760- Pathophysiology 1790- Anatomy and Physiology 1759-Medical Microbiology PRACTICUM IN HEALTH SCIENCE (1931/1935) Certified Clinical Medical Assistant (1995/1996) Dental Assistants (1770) Patient Care Technician (1937) Pharmacy Tech (CLEMENS ONLY)

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

hosa
future health professionals

PRINCIPLES OF HEALTH SCIENCE (1754)
Grade Placement: 9–10
Credit: 1
Prerequisite: None.
The Principles of Health Science course is designed to provide an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the healthcare industry.

MEDICAL TERMINOLOGY (1755)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
The Medical Terminology course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, singular and plural forms, and medical abbreviations. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology.

HEALTH SCIENCE THEORY (1756)
Grade Placement: 10–12
Credit: 1
Prerequisites: Biology.
Recommended Corequisite: Health Science Clinical.
The Health Science Theory course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will employ hands-on experiences for continued knowledge and skill development.

ANATOMY AND PHYSIOLOGY (1790)
Grade Placement: 10–12
Credit: 1
Prerequisite: Biology and a second science credit.
Recommended Prerequisite: A course from the Health and Science Career Cluster.
The Anatomy and Physiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology will study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.

MEDICAL MICROBIOLOGY (1759)
Grade Placement: 10–12
Credit: 1
Prerequisites: Biology and Chemistry.
Recommended Prerequisites: A course from the Health Science Career Cluster.
The Medical Microbiology course is designed to explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug resistant organisms, and emerging diseases. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement.
Note: This course satisfies a science credit requirement for students on the Foundation High School Program.

MEDICAL MICROBIOLOGY DUAL CREDIT (1761)
Grade Placement: 10-12
Credit: 1
Prerequisite: successful completion of Biology AND Chemistry.
Recommended: Successful completion of another Health Science course
The Medical Microbiology course is designed to explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug resistant organisms, and emerging diseases. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement.
*Please see the information about Dual Credit at the end of the Course Description section to learn about college application and testing requirements.

PATHOPHYSIOLOGY (1760)
Grade Placement: 11–12
Credit: 1
Prerequisites: Biology and Chemistry.
Recommended Prerequisite: A course from the Health and Science Career Cluster.
The Pathophysiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Pathophysiology will study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of disease. Students will differentiate between normal and abnormal physiology.
Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable. Note: This course satisfies a science credit requirement for students on the Foundation
High School Program.

PRACTICUM IN HEALTH SCIENCE (1931/1935) Certified Clinical Medical Assistant (Course location – Steele and Clemens)
PRACTICUM IN HEALTH SCIENCE (1995/1996) Dental Assistance (Course location – Steele and Clemens)
PRACTICUM IN HEALTH SCIENCE (1770) Patient Care Technician (Course location – Steele)
PRACTICUM IN HEALTH SCIENCE (1770) Pharmacy Technician (Course location – Clemens)

Grade Placement: 11–12
Credit: 2
Prerequisites: Health Science Theory and Biology.
The Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

Career and Technical Education

Public Service Endorsement

Level 1	1762- Principles of Law, Public Safety, Corrections, and Security
Level 2	1763- Law Enforcement I
Level 3	1764- Law Enforcement II
Level 4	1765- Forensic Science 1940- Practicum in Law, Public Safety Corrections, and Security

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.

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF LAW, PUBLIC SAFETY, CORRECTIONS AND SECURITY (1762)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Principles of Law, Public Safety, Corrections, and Security introduces students to professions in law enforcement, protective services, corrections, firefighting, and emergency management services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of fire and emergency services. The course provides students with an overview of the skills necessary for careers in law enforcement, fire service, protective services, and corrections.
Certification Opportunity: CPR & First AID (Local)

LAW ENFORCEMENT I (1763)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Principles of Law, Public Safety, Corrections, and Security.
Law Enforcement I is an overview of the history, organization, and functions of local, state, and federal law enforcement. Students will understand the role of constitutional law at local, state, and federal levels; the U.S. legal system; criminal law; and law enforcement terminology and the classification and elements of crime.

LAW ENFORCEMENT II (1764)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisite: Law Enforcement l.
Law Enforcement II provides the knowledge and skills necessary to prepare for a career in law enforcement. Students will understand ethical and legal responsibilities, patrol procedures, first responder roles, telecommunications, emergency equipment operations, and courtroom testimony.

FORENSIC SCIENCE (1765)
Grade Placement: 11–12
Credit: 1
Prerequisites: Biology and Chemistry.
Recommended Prerequisite or Corequisite: Any Law, Public Safety, Corrections, and Security Career Cluster course.
Forensic Science is a course that introduces students to the application of science to connect a violation of law to a specific criminal, criminal act, or behavior and victim. Students will learn terminology and procedures related to the search and examination of physical evidence in criminal cases as they are performed in a typical crime laboratory. Using scientific methods, students will collect and analyze evidence such as fingerprints, bodily fluids, hairs, fibers, paint, glass, and cartridge cases. Students will also learn the history and the legal aspects as they relate to each discipline of forensic science. Scientific methods of investigation can be experimental, descriptive, or comparative. The method chosen should be appropriate to the question being asked.

PRACTICUM IN LAW (1940)
Grade Placement: 11–12
Credit: 2
Prerequisite: None.
The practicum course is designed to give students supervised practical application of previously studied knowledge and skills in law, public safety, corrections, and security. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations.

Career and Technical Education

Public Service Endorsement

Level 1	1762- Principles of Law, Public Safety, Corrections, and Security
Level 2	1985- Disaster Response
Level 3	1986- Firefighter I (starting 2024-2025)
Level 4	1987- Firefighter II (starting 2025-2026) 1988- Emergency Medical Tech (starting 2025-2026)

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.

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF LAW, PUBLIC SAFETY, CORRECTIONS AND SECURITY (1762)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
Principles of Law, Public Safety, Corrections, and Security introduces students to professions in law enforcement, protective services, corrections, firefighting, and emergency management services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of fire and emergency services. The course provides students with an overview of the skills necessary for careers in law enforcement, fire service, protective services, and corrections.

DISASTER RESPONSE (1985)
Grade Placement: 9–10
Credits: 1
Prerequisite: None.
Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Disaster Response includes basic training of students in disaster survival and rescue skills that would improve the ability of citizens to survive until responders or other assistance could arrive. Students will receive education, training, and volunteer service to make communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues and disasters of all kinds.

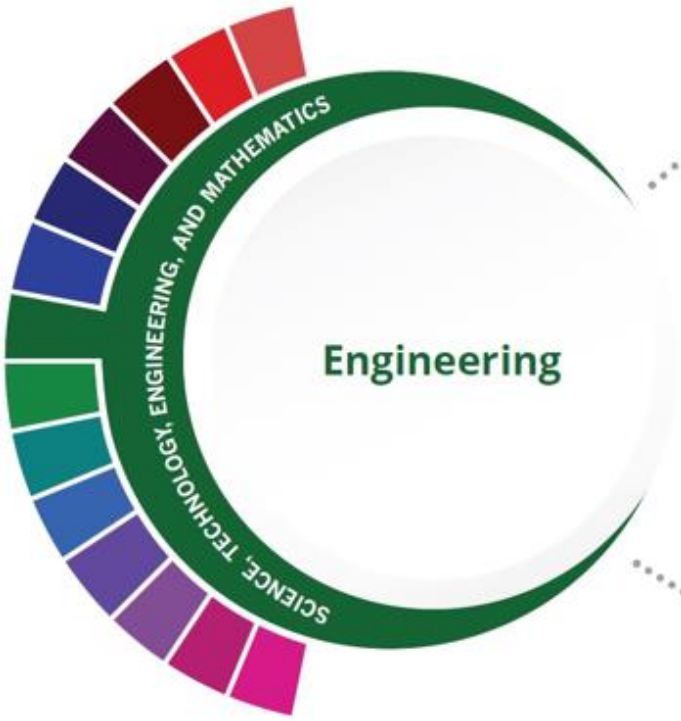
FIREFIGHTER I (1986)
Grade Placement: 10–12
Credit: 2
Prerequisite: Disaster Response
Recommended Prerequisite: Principles of Law, Public Safety, Corrections, and Security. Firefighter I introduces students to firefighter safety and development. Students will analyze Texas Commission on Fire Protection rules and regulations, proper incident reporting and records, proper use of personal protective equipment, and the principles of fire safety.

FIREFIGHTER II (1987)
Grade Placement: 11–12
Credit: 3
Prerequisite: Firefighter I
Recommended Prerequisite: Principles of Law, Public Safety, Corrections, and Security.
Firefighter II is the second course in a series for students studying firefighter safety and development. Students will understand Texas Commission on Fire Protection rules and regulations, proper incident reporting and records, proper use of personal protective equipment, and the principles of fire safety. Students will demonstrate proper use of fire extinguishers, ground ladders, fire hoses, and water supply apparatus systems.

EMERGENCY MEDICAL TECHNICIAN BASIC (1988)
Grade Placement: 11–12
Credit: 2
Prerequisite: Firefighter I
Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security; and Anatomy and Physiology.
Emergency Medical Technician (EMT)—Basic instructs students to meet and exceed standard knowledge needed to be a valid Emergency Medical Technician. The curriculum includes skills necessary for a student to provide entry level emergency medical care, life support, and ambulance service. The EMT—Basic course is an introductory course to concepts, knowledge, and skills needed by EMTs in the areas of communications, transportation, and recordkeeping. Students interested in working in public safety, including fire, police, and ambulance operators will be capable of performing the job expectations of an EMT safely and effectively after the completion of this course.

Career and Technical Education

STEM Endorsement



Level 1	1788- Principles of Applied Engineering
Level 2	1785- Engineering Design and Presentation I
Level 3	1744- Engineering Design and Presentation II
Level 4	1745- Engineering Design and Problem Solving

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.

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

SkillsUSA

PRINCIPLES OF APPLIED ENGINEERING (1788)

Grade Placement: 9–10
Credit: 1
Prerequisite: None.
Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.

ENGINEERING DESIGN AND PRESENTATION I (1785)

Grade Placement: 10–12
Credit: 1
Prerequisite: Algebra l.
Recommended Prerequisite: Principles of Applied Engineering.
Engineering Design and Presentation I is a continuation of knowledge and skills learned in
Principles of Applied Engineering. Students enrolled in this course will demonstrate knowledge and skills of the design process as it applies to engineering fields using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students will use a variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and what is required to gain and maintain employment in these areas.
Certification Opportunity: Autodesk Certified User: Auto CAD and Inventor (Local)

ENGINEERING DESIGN AND PRESENTATION II (1744)

Grade Placement: 11–12
Credit: 2
Prerequisites: Algebra l and Geometry.
Recommended Prerequisite: Principles of Applied Engineering or Engineering Design and Presentation l.
Engineering Design and Presentation II is a continuation of knowledge and skills learned in Engineering Design and Presentation I. Students enrolled in this course will demonstrate knowledge and skills of the design process as it applies to engineering fields using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students will use a variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Emphasis will be placed on using skills from ideation through prototyping.
Certification Opportunity: Autodesk Certified User: Auto CAD and Inventor (Local)

ENGINEERING DESIGN AND PROBLEM SOLVING (1745)

Grade Placement: 11–12
Credit: 1
Prerequisites: Algebra l and Geometry.
Recommended Prerequisites: two Science, Technology, Engineering, and Mathematics Career Cluster credits.
The Engineering Design and Problem-Solving course is the creative process of solving problems by identifying needs and then devising solutions. The solution may be a product, technique, structure, or process depending on the problem. Science aims to understand the natural world, while engineering seeks to shape this world to meet human needs and wants. Engineering design takes into consideration limiting factors or "design under constraint." Various engineering disciplines address a broad spectrum of design problems using specific concepts from the sciences and mathematics to derive a solution. The design process and problem solving are inherent to all engineering disciplines. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

Career and Technical Education

STEM Endorsement

Level 1	1282- Computer Science I
Level 2	1992- Computer Science II
Level 3	1997- Computer Science III 1283 (Math)/1284(LOFE)- AP Computer Science A
Level 4	1741- Practicum in Information Technology

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.

SkillsUSA

Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

CYBER PATRIOT
NATIONAL HIGH SCHOOL CYBER DEFENSE COMPETITION

COMPUTER SCIENCE I (1282)
Grade Placement: 9–12
Credit: 1
Prerequisite: Algebra I
Computer Science I will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations, systems, and concepts.

AP COMPUTER SCIENCE A (1283 Math/1284 LOTE)
Grade Placement: 9-12
Credit: 2
Prerequisites: Algebra l and Geometry.
As introductory course to computer science, students will learn the basic structure and theories of computer programming to solve problems and create software. The course focuses on the AP Java subset (standard Java) programing language and no previous computer knowledge is required. This course counts as a fourth year math course and is recommended for any student pursuing a STEM career.

COMPUTER SCIENCE II (1992)
Grade Placement: 11–12
Credit: 1
Prerequisite: Algebra I and either Computer Science I or Fundamentals of Computer Science
Computer Science II will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of computer science through the study of technology operations, systems, and concepts.

COMPUTER SCIENCE III (1997)
Grade Placement: 11–12
Credit: 1
Prerequisite: Algebra I and either Computer Science I or Fundamentals of Computer Science
Computer Science III will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of advanced computer science data structures through the study of technology operations, systems, and concepts. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem-solving, and decision-making; digital citizenship; and technology operations and concepts.

PRACTICUM IN INFORMATION TECHNOLOGY (1719)
Grade Placement: 12
Credit: 2
Prerequisite: A minimum of two high school information technology (IT) courses.
In the Practicum in Information Technology, students will gain advanced knowledge and skills in the application, design, production, implementation, maintenance, evaluation, and assessment of products, services, and systems. Knowledge and skills in the proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an industry mentor, as an unpaid or paid internship, as part of a capstone project, or as career preparation.

Career and Technical Education

STEM Endorsement

Level 1	1743- Principles of Information Technology
Level 2	1913- Foundations of Cybersecurity
Level 3	1918- Networking
Level 4	1934- Cybersecurity Capstone

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.

SkillsUSA

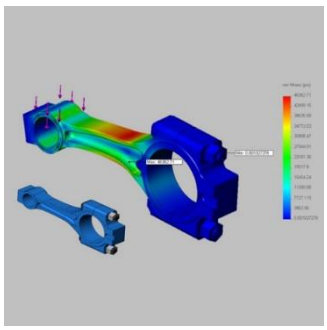
Participation in career and technical student organizations and other leadership or extracurricular organizations is encouraged.

PRINCIPLES OF INFORMATION TECHNOLOGY (1743)
Grade Placement: 9–10
Credit: 1
Prerequisites: None
In Principles of Information Technology, students will develop computer literacy skills to adapt to emerging technologies used in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

FOUNDATIONS OF CYBERSECURITY (1913)
Grade Placement: 9–12
Credit: 1
Prerequisite: None.
This course develops the knowledge and skills needed to master fundamental concepts of cybersecurity. Students in the course will develop a basic foundation for continuing their cybersecurity education and choosing a career in the cybersecurity field. Students will explore the challenges facing information security professionals related to ethics, system security, network security, and application security. Students will conduct risk assessments and develop and implement security policies to mitigate those risks. Students will examine trends in cyberattacks, common vulnerabilities, and the emergence of cyber terrorism.

NETWORKING (1918)
Grade Placement: 10–12
Credit: 1
Prerequisite: None.
Recommended Prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab.
Corequisite: Networking.
In Networking Lab, students will develop knowledge of the concepts and skills related to telecommunications and data networking technologies and practices to apply them to personal or career development. To prepare for success, students must have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. This course must be taken concurrently with Networking and may not be taken as a stand-alone course. Districts are encouraged to offer this course in a consecutive block with Networking to allow students sufficient time to master the content of both courses.
Certification Opportunity: CompTIA Security+ (IBC)

CYBERSECUIRTY CAPSTONE (1934)
Grade Placement: 11–12
Credit: 1
Prerequisite: Foundations of Cyber Security
Recommended Prerequisites:
In the Cybersecurity Capstone course, students will develop the knowledge and skills needed to explore advanced concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyberattacks, threats, and vulnerabilities. Students will develop security policies to mitigate risks. The skills obtained in this course prepare students for additional study toward industry certification. A variety of courses are available to students interested in the cybersecurity field. Cybersecurity Capstone may serve as a culminating course in this field of study.
Certification Opportunity: Cisco Certified Network Associate (CCNA 1 Credit and CCNA 2 Credits) (Local)



For School Year 2023-2024
Last 11-8-22