

Science, Technology, Engineering, & Mathematics

Programs of Study

- Engineering
- Programming & Software Development

Agriculture, Food & Natural Resources

Programs of Study

- Animal Science
- Applied Agricultural Engineering
- Food Science & Technology
- Plant Science

Education & Training

Program of Study

- Teaching & Training

Career & Technology Education
Course Information



Health Science

Program of Study

- Health Care Therapeutic

Arts, A/V Technology & Communication

Program of Study

- Digital Communication
- Graphic Design and Multimedia Arts

Architecture & Construction

Program of Study

- Carpentry

Business, Marketing & Finance

Program of Study

- Business Management

Public Notification of Nondiscrimination

Barbers Hill ISD offers career and technical education programs in Agriculture, Food, and Natural Resources; Arts, A/V Technology, and Communications; Architecture and Construction; Business Marketing and Finance; Education and Training; Health Science; Science, Technology, Engineering, and Math (STEM); Human Services, Manufacturing. Admission to these programs is based on open enrollment.

It is the policy of Barbers Hill ISD not to discriminate on the basis of race, color, national origin, sex or handicap in its vocational programs, services or activities and provides equal access to the boy scouts and other designated youth groups 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 Barbers Hill ISD 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.

BHISD will take steps to assure that lack of English language skills will not be a barrier to admission and participation in all educational and vocational programs.

For information regarding employee rights or grievance procedures regarding discrimination based on sex, including sexual harassment, contact Barbara Ponder, Title IX Coordinator at **barbara.ponder@bhisd.net**, (281)576-2221 during normal business hours.

For information regarding student rights or grievance procedures regarding discrimination based on sex, including sexual harassment, sexual assault, dating violence, domestic violence, stalking, or gender-based harassment, contact Mandy Malone, Title IX Coordinator at **mandy.malone@bhisd.net**, (281)576-2221 during normal business hours.

For information regarding discrimination based on disability, contact Jessica Ackerman, Section 504 Coordinator **jessica.ackerman@bhisd.net**, (281)576-2221 during normal business hours.

For information relating to discrimination for any other reason, contact the Superintendent's office, (281)576-2221 during normal business hours.

Educación Técnica y Profesional

Notificación Publica de No Discriminación

Barbers Hill ISD ofrece programas de educación técnica y profesional en agricultura, alimentos y recursos naturales; Artes, Tecnología audiovisual y Comunicaciones; Arquitectura y Construcción; Mercadotecnia y Finanzas Empresariales; Educación y entrenamiento; Ciencia de la salud; Ciencia, Tecnología, Ingeniería y Matemáticas (STEM); Servicios humanos, fabricación. La admisión a estos programas se basa en la inscripción abierta.

Es política de Barbers Hill ISD no discriminar en sus programas, servicios o actividades vocacionales y brinda igualdad de acceso a los Boy Scouts y otros grupos juveniles designados por motivos de raza, color, origen nacional, sexo o impedimento, tal como lo requieren el Título VI de la Ley de Derechos Civiles de 1964, según enmienda; Título IX de las Enmiendas en la Educación de 1972, y la Sección 504 de la Ley de Rehabilitación de 1973, según enmienda. BHISD tomará medidas para asegurar que la falta de habilidades en el idioma inglés no sea una barrera para la admisión y participación en todos los programas educativos y vocacionales.

Para obtener información sobre los derechos de los empleados o los procedimientos de quejas con respecto a la discriminación basada en el sexo, incluido el acoso sexual, comuníquese con Barbara Ponder, Coordinadora del Título IX en **barbara.ponder@bhisd.net**, (281)576-2221 durante el horario laboral normal.

Para obtener información sobre los derechos de los estudiantes o los procedimientos de quejas con respecto a la discriminación basada en el sexo, incluido el acoso sexual, la agresión sexual, la violencia en el noviazgo, la violencia doméstica, el acecho o el acoso por motivos de género, comuníquese con Mandy Malone, Coordinadora del Título IX en **mandy.malone@bhisd.net**, (281)576-2221 durante el horario laboral normal.

Para obtener información sobre la discriminación basada en la discapacidad, comuníquese con Jessica Ackerman, Coordinadora de la Sección 504 **jessica.ackerman@bhisd.net**, (281)576-2221 durante el horario laboral normal.

Para obtener información relacionada con la discriminación por cualquier otro motivo, comuníquese con la oficina del Superintendente al (281)576-2221 durante el horario laboral normal.

Agriculture, Food, and Natural Resources Career Cluster

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

Animal Science Statewide Program of Study



The Animal Science program of study focuses on the science, research, and business of animals and other living organisms. It teaches CTE learners how to apply biology and life science to real-world life processes of animals and wildlife, either in laboratories or in the field, which could include a veterinary office, a farm or ranch, or any outdoor area harboring animal life. Students may also research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Small Animal Management
- Equine Science

Level 3

- Livestock Production/Lab

Level 4

- Advanced Animal Science
- Veterinary Medical Applications/Lab
- Practicum in Agriculture, Food, and Natural Resources

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Texas FFA

Work Based Learning Activities

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

Industry-Based Certifications

- Elanco Fundamentals of Animal Science Certification
- Elanco Veterinary Medical Applications Certification
- Equine Management & Evaluation Certification



Aligned Occupations

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

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

Animal Science

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	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.		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Small Animal Management	13000400 (0.5 credit)	Principles of Agriculture, Food, and Natural Resources
To be prepared for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings. Suggested small animals which may be included in the course of study include, but are not limited to small mammals, amphibians, reptiles, dogs, and cats.		
Equine Science	13000500 (0.5 credit)	Principles of Agriculture, Food, and Natural Resources
To be prepared for careers in the field of animal science, students need to enhance academic knowledge and skills, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings. Suggested small animals which may be included in the course of study include, but are not limited to horses, donkeys, and mules.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Livestock Production/Lab	13000300 (1 credit)	Principles of Agriculture, Food, and Natural Resources
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.		

See next page for Level 4 courses

Animal Science

Course Information

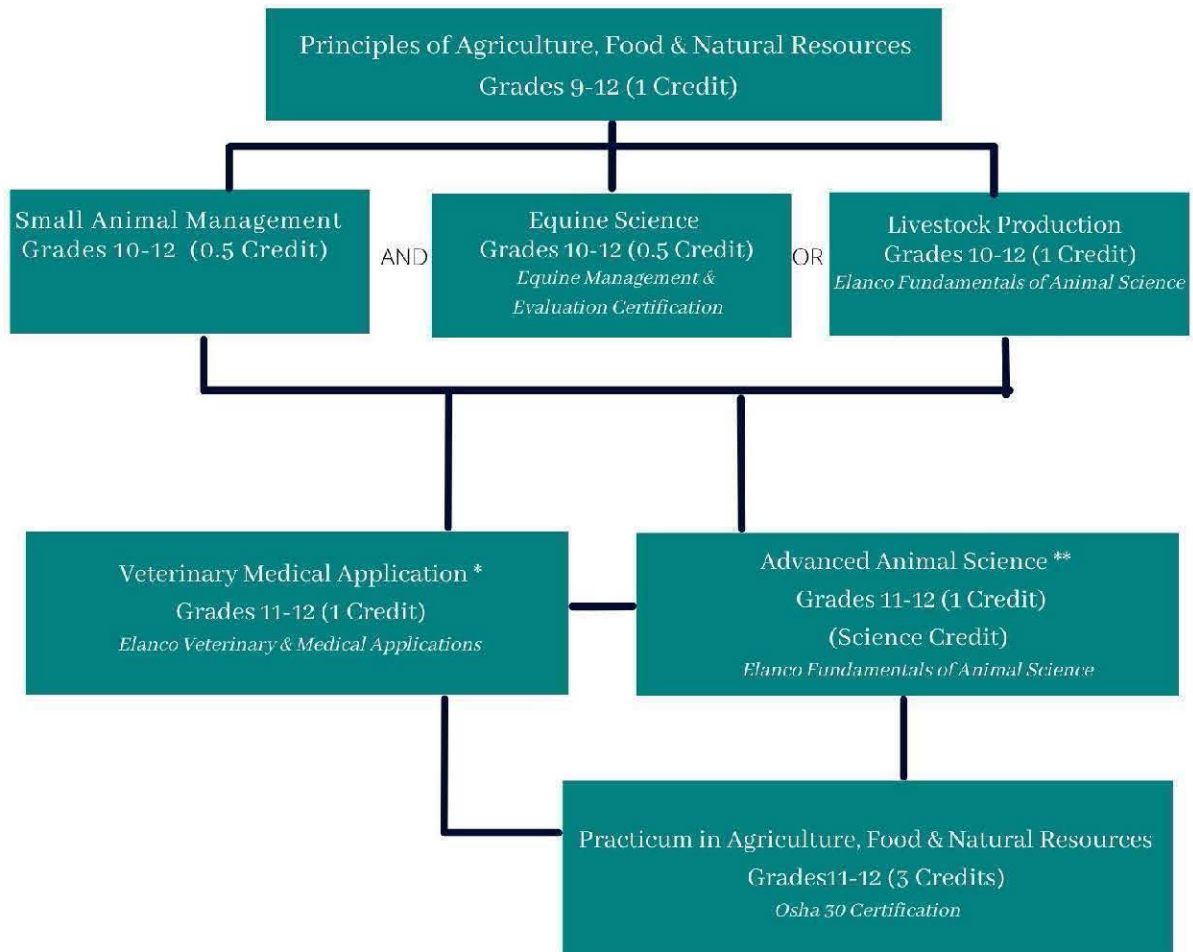
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Advanced Animal Science	13000700 (1 credit)	Biology and Chemistry or Integrated Physics and Chemistry (IPC); Algebra I and Geometry; and either Small Animal Management, Equine Science, or Livestock Production
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.		
Veterinary Medical Applications/Lab	13000600 (1 credit))	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. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire technical knowledge and skills related to animal systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations.		
Practicum in Agriculture, Food, and Natural Resources	13002505 (3 credits)	Principles of Agriculture, Food, and Natural Resources
To be prepared for careers in natural resource systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings.		

Animal Science Course Sequence

Agriculture, Food and Natural Resources

Program of Study: Animal Science



* PREQ: Equine Science, Small Animal Management, or Livestock Production

PREQ: Biology **and Chemistry or Integrated Physics **and** Chemistry (IPC); Algebra I **and** Geometry; **and** either Small Animal Management, Equine Science, or Livestock Production

Graduation Endorsement: Business & Industry

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Agriculture, Food, and Natural Resources Career Cluster

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

Food Science and Technology Statewide Program of Study



The Food Science and Technology program of study explores the occupations and educational opportunities associated with working with agricultural and food scientists in food, fiber, and animal research, production, and processing. This program of study may also include assisting with animal breeding, nutrition, and conducting tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Food Technology and Safety/Lab

Level 3

- Food Processing/Lab

Level 4

- Practicum in Agriculture, Food, and Natural Resources

Postsecondary Opportunities

Associates Degrees

- Food Science

Bachelor's Degrees

- Agricultural and Food Products Processing
- Food Science and Nutrition
- Food Science and Technology

Master's, Doctoral, and Professional Degrees

- Food Science and Technology

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Tour a food products processing facility
- Participate in Texas FFA

Work Based Learning Activities

- Intern at a food products processing facility
- Participate in an FFA supervised agriculture experience

Industry-Based Certifications

- Culinary Meat Selection & Cookery Certification
- Food Safety & Science Certification



Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Agricultural and Food Science Technicians	\$34,382	236	11%
Supervisors of Production and Operating	\$62,171	5,094	9%
Inspectors, Testers, Sorters, Samplers, and Weighers	\$37,689	6,653	%%

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

Food Science and Technology

Course information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	None
To be prepared for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. This course allows students to develop knowledge and skills regarding career opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. To prepare for success, students need to have opportunities to learn, reinforce the experience, apply, and transfer their knowledge and skills in a variety of settings		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Food Technology and Safety	13001300 (1 credit)	Principles of Agriculture, Food, and Natural Resources
A course teaching the importance of concerned with world food production; the processing, preparing, and packaging of foods; government regulations regarding foods; exploring career opportunities; and leadership development.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Food Processing/Lab	13001400 (1 credit)	Principles of Agriculture, Food, and Natural Resources
A laboratory-oriented course designed to develop skills in the processing of meat. The course emphasizes equipment care and sanitation, meat quality, identification, grading, fabrication, preparation and preservation, and merchandising and consumer trends. Instruction will include information on career opportunities, leadership activities, and record-keeping practices related to the industry.		

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Practicum in Agriculture, Food, and Natural Resources	13002505 (3 credits)	Principles of Agriculture, Food, and Natural Resources
To be prepared for careers in natural resource systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings.		

Food Science and Technology Course Sequence

Agriculture, Food & Natural Resources

Program of Study: Food Science and Technology

Principles Principles of Agriculture, Food & Natural Resources
Grades 9-12 (1 Credit)

Food Technology & Safety
Grades 10-12 (1 Credit)
Food Safety and Science Certification

Food Processing
Grades 10-12 (1 Credit)
Culinary Meat Selection & Cookery Certification

Practicum of Agriculture, Food & Natural Resources
Grades 11-12
(3 Credit Class)
Osha 30 Certification

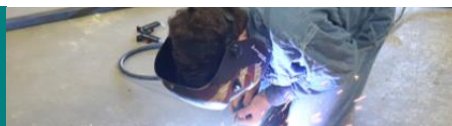
Graduation Endorsement: Business & Industry

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Agriculture, Food, and Natural Resources Career Cluster

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Applied Agricultural Engineering Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

- Agricultural Mechanics and Metal Technologies/Lab

Level 3

- Agricultural Structures Design and Fabrications/Lab

Level 4

- Agricultural Equipment Design and Fabrication/Lab
- Practicum in Agriculture, Food, and Natural Resources

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

- Agricultural Engineering
- Agricultural Mechanization, General

Master's, Doctoral, and Professional Degrees

- Agricultural Engineering
- Agricultural Mechanization, General

Work-Based Learning and Expanded Learning Opportunities

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

Industry-Based Certifications

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

- OSHA General 30*

*IBC sunseting 8/31/24

Aligned Occupations

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

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

Applied Agricultural Engineering

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	None

To be prepared for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. This course allows students to develop knowledge and skills regarding career opportunities, personal development, globalization, industry standards, details, practices, and expectations. To prepare for careers in agriculture, food, and natural resources, students must attain academic skills and knowledge in agriculture. To prepare for success, students need to have opportunities to learn, reinforce the experience, apply, and transfer their knowledge and skills in a variety of settings

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Agricultural Mechanics and Metal Technologies	13002200 (1 credit)	Principles of Agriculture, Food, and Natural Resources

To be prepared for careers in agricultural power, structural, and technical systems, students need to 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. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge skills and technologies in a variety of settings. This course 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 metalworking techniques.

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Agricultural Structures Design and Fabrications	13002300 (1 credit)	Principles of Agriculture, Food, and Natural Resources

To be prepared for careers in mechanized agriculture and technical systems, students attain knowledge and skills related to agricultural facilities design and fabrication. Students explore career opportunities, entry requirements, and industry expectations. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

See next page for Level 4 courses

Applied Agricultural Engineering

Course Information

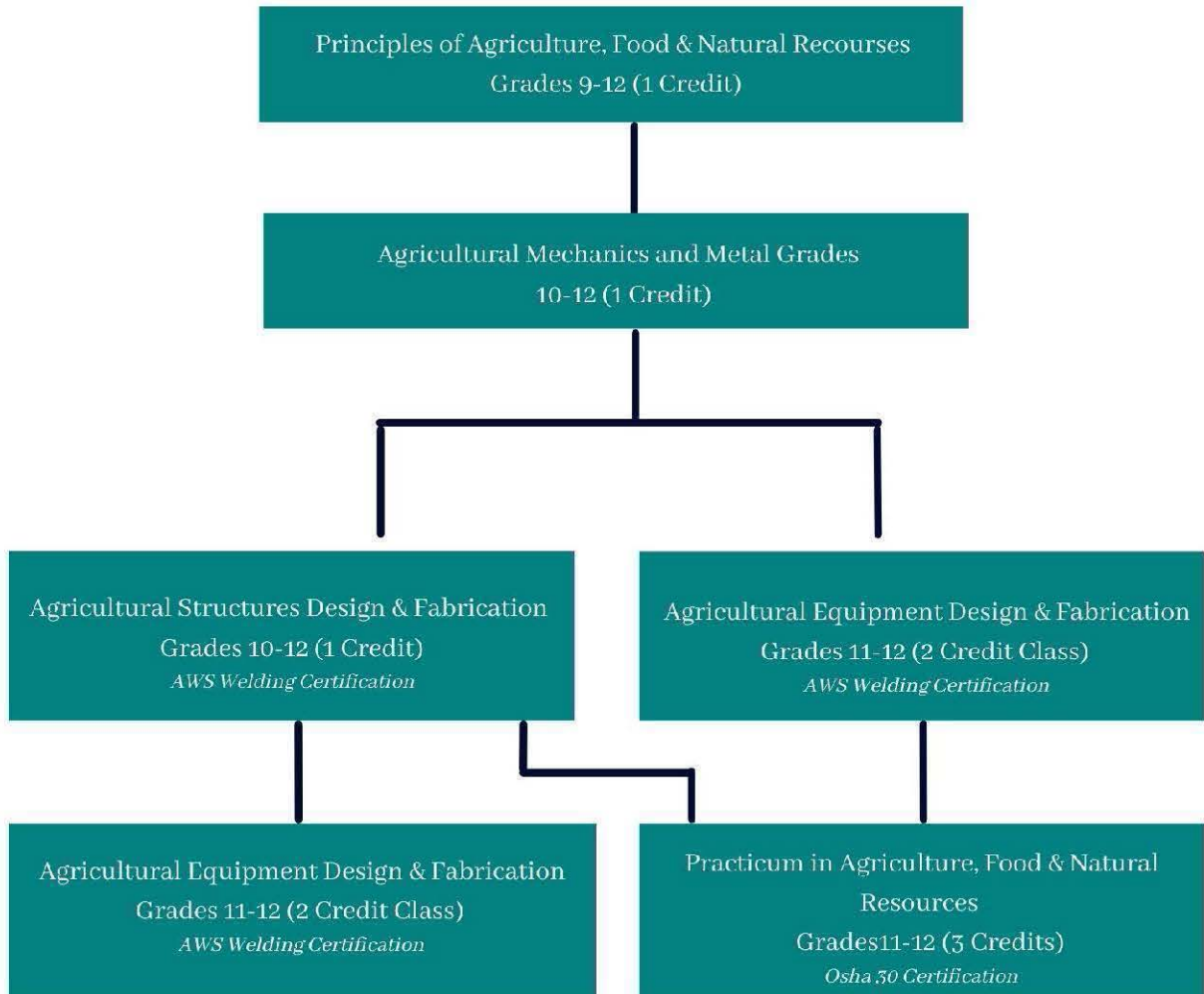
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Agricultural Equipment Design and Fabrication/Lab	13002350 (2 credits)	Principles of Agriculture, Food, and Natural Resources
In the Agricultural Equipment Design & Fabrication course, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication.		
Practicum in Agriculture, Food, and Natural Resources	13002505 (3 credits)	Principles of Agriculture, Food, and Natural Resources
To be prepared for careers in natural resource systems, students need to attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings.		

Applied Agricultural Engineering Course Sequence

Agriculture, Food & Natural Resources

Program of Study: Applied Agricultural Engineering



Graduation Endorsement: Business & Industry

Agriculture, Food, and Natural Resources Career Cluster

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

Plant Science Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Principles of Agriculture, Food, and Natural Resources

Level 2

Level 3

- Floral Design/Lab

Level 4

- Practicum in Agriculture, Food, and Natural Resources
- Advanced Floral Design

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Texas FFA

Work Based Learning Activities

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

Industry-Based Certifications

- Texas State Florist's Association Knowledge Based Floral Certification
- Texas State Florist's Association Level I Floral Certification



Aligned Occupations

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

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

Plant Science

Course information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Agriculture, Food, and Natural Resources	13000200 (1 credit)	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.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Floral Design	13001800 (1 credit)	Principles of Agriculture, Food, and Natural Resources
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.		

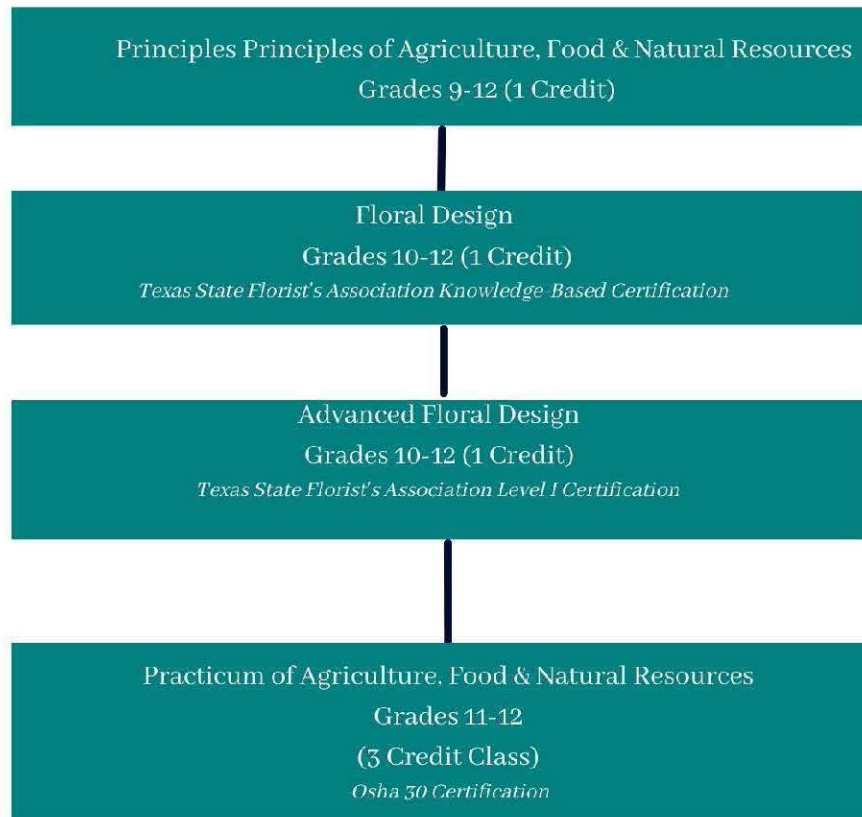
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Advanced Floral Design	N1300270 (1 credit)	Floral Design
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®.		
Practicum in Agriculture, Food, and Natural Resources	13002505 (3 credits))	Principles of Agriculture, Food, and Natural Resources
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.		
Career Preparation I	12701305 (3 credits)	Principles of Agriculture, Food, and Natural Resources
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.		

Plant Science Course Sequence

Agriculture, Food & Natural Resources

Program of Study: Plant Science



Graduation Endorsement: Business & Industry

Architecture and Construction Career Cluster

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

Carpentry Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Principles of Construction

Level 2

- Construction Technology I

Level 3

- Construction Technology II

Level 4

- Career Preparation I

Postsecondary Opportunities

Associates Degrees

- Carpentry/Carpenter
- Industrial Mechanics and Maintenance Technology

Bachelor's Degrees

- Construction Science

Master's, Doctoral, and Professional Degrees

- Construction Management

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Shadow a carpenter or millwright

Work Based Learning Activities

- Obtain an NCCER certification in

Industry-Based Certifications

- NCCER Core
- OSHA 30 Construction

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

*IBC sunseting 8/31/24



Aligned Occupations

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

Carpentry

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Construction	13004220 (1 credit)	None
The Carpentry program of study explores the occupations and educational opportunities related to constructing, installing, or repairing structures and fixtures made of wood, such as concrete forms (including frameworks, partitions, joists, studding, rafters, and stairways). This program of study may also include exploration into installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Construction Technology I	13005100 (2 credits)	Principles of Construction
In Construction Technology, students gain knowledge and skills specific to those needed to enter the workforce as carpenters or building maintenance supervisors or prepare for a postsecondary degree in construction management, architecture, or engineering. Students acquire knowledge and skills in safety, tool usage, building materials, codes, and framing.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Construction Technology II	13005200 (2 credits)	Construction Technology I
In Construction Technology II, students will gain advanced knowledge and skills needed to enter the workforce as carpenters, building maintenance technicians, or supervisors or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will build on the knowledge base from Construction Technology I and are introduced to exterior and interior finish out skills.		

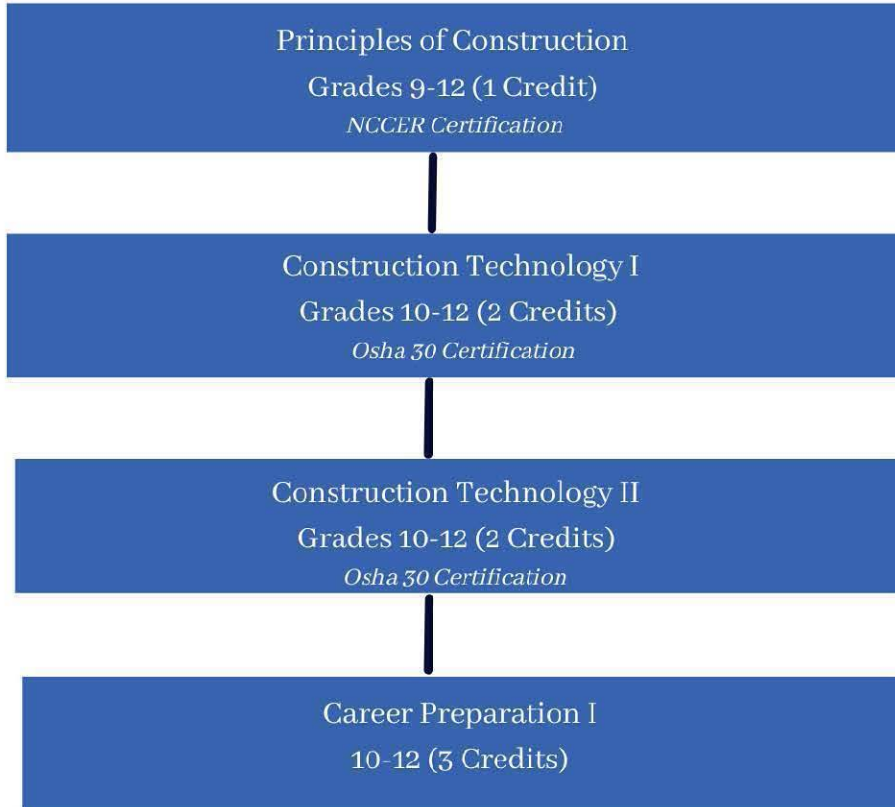
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Career Preparation I	12701305 (3 credits)	None
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.		

Architecture & Construction

Program of Study: Carpentry

prerequisite



Arts, Audio/Video Technology, and Communications Career Cluster

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

Digital Communications Statewide Program of Study



The Digital Communications program of study explores the occupations and educational opportunities associated with the production of audio and visual media formats for various purposes, such as TV broadcasts, advertising, video production, or motion pictures. This program of study may also include exploration into operating machines and equipment to record sound and images, such as microphones, sound speakers, video screens, projectors, video monitors, sound and mixing boards, and related electronic equipment.

Secondary Courses for High School Credit

Level 1

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

Level 2

- Audio/Video Production I/Lab

Level 3

- Audio/Video Production II/Lab

Level 4

- Practicum of Audio/Video Production
- Career Preparation

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Shadow a production team

Work Based Learning Activities

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

Industry-Based Certifications

- Adobe Certified Professional in Print and Digital Media Publication Using Adobe InDesign

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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



Aligned Occupations

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

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

Digital Communications

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Arts, A/V Technology, and Communications	13008200 (1 credit)	None

Careers in Arts, Audio Video Technology and Communications career cluster require, in addition to creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication. 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.

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Audio/Video Production I	13008500 (1 credit)	None

Careers in audio and video technology and film production span all aspects of the audio and video communications industry. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio-Video Technology, and Communications careers 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 activities.

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Audio/Video Production II	13008600 (1 credits)	Audio/Video Production I

Students study the role of media as a tool within the academic, social, and demographic processes as they influence tastes, behavior, purchasing, and voting decisions. 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 post-production activities with an opportunity to be a part of the Eagle Eye Production Team which helps run the district's video scoreboard.

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Practicum in Audio/Video Production	13008700 (2 credits)	Audio/Video Production II

Building upon the concepts taught in Audio/Video Production II and its co-requisite 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 Preparation I	12701305 (3 credits)	None
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The Career Preparation I course 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.

Arts, A/V Technology & Communication

Program of Study: Digital Communication

Principles of AV Technology & Communication
Grades 9-12 (1 Credit)

Audio/Video Production I
Grades 10-12 (1 Credit)

Audio/Video Production II
Grades 10-12 (1 Credits)
Adobe Certified Associate Certification

Practicum of Audio/Video Production
Grades 11-12 (2 Credits)

Graduation Endorsement: Business & Industry

Arts, Audio/Video Technology, and Communications Career Cluster

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

Graphic Design & Multimedia Arts *Statewide Program of Study*



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

Secondary Courses for High School Credit

Level 1

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

Level 2

- Graphic Design and Illustration I/Lab

Level 3

- Graphic Design and Illustration II/Lab

Level 4

- Practicum in Graphic Design and Illustration

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Work-Based Learning and Expanded Learning Opportunities

Work Based Learning Activities

- Intern with a multimedia or animation studio

Industry-Based Certifications

- Adobe Certified Professional in Digital Video Using Adobe Premiere Pro

- Adobe Certified Professional Animate*

*IBC Sunsetting 8/31/24

Aligned Occupations

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

Graphic Design & Multimedia Arts

Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Arts, A/V Technology, & Communications	13008200 (1 credit)	None

Careers in Arts, Audio Video Technology and Communications career cluster require, in addition to creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication. 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.

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Graphic Design and Illustration I /Lab	13008800 (1 credit)	None

Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio-Video Technology, and Communications careers cluster, students will be expected to develop an understanding of the print industry with a focus on fundamental elements and principles of visual art and design. Through project-based learning, the students will develop various graphic design materials including the Barbers Hill High School Yearbook.

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Graphic Design and Illustration II/Lab	13008900 (1 credit)	Graphic Design and Illustration I

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 advanced technical understanding of the commercial photography industry with a focus on producing, promoting, and presenting professional quality photographs.

Level 4

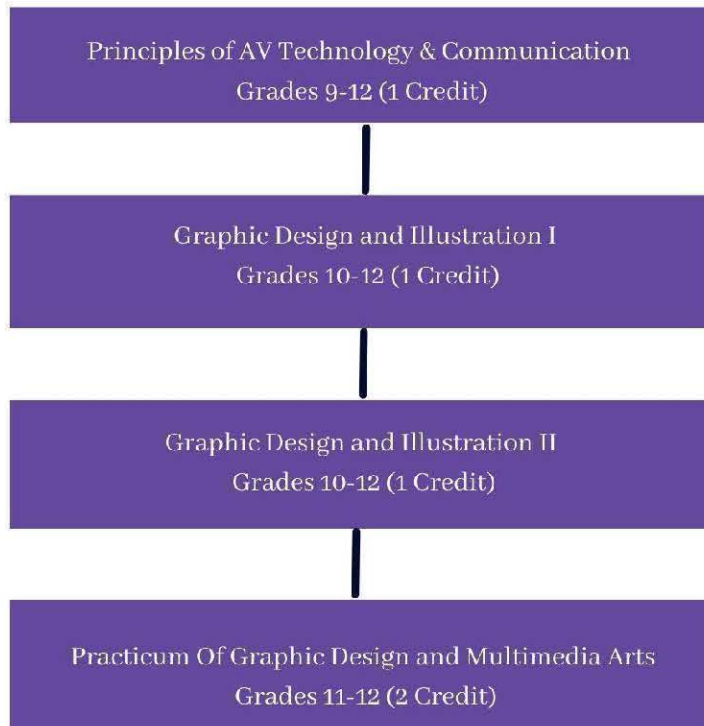
COURSE NAME	SERVICE ID	PREREQUISITES (PREQ)
Practicum in Graphic Design and Illustration	13009000 (2 credits)	Graphic Design and Illustration II

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.

Graphic Design & Multimedia Arts Course Sequence

Arts, A/V Technology & Communication

Program of Study: Graphic Design and Multimedia Arts



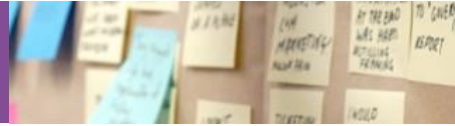
Graduation Endorsement: Business & Industry

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Business, Marketing, and Finance Career Cluster

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

Business Management Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Business Information Management I/Lab

Level 2

- Business Information Management II/Lab

Level 3

- Business Management

Level 4

- Practicum in Business Management

Work-Based Learning and Expanded Learning Opportunities

Work Based Learning Activities

- Intern with a local business or chamber of commerce

Industry-Based Certifications

- Microsoft Office Specialist 2016 Master
- Microsoft Office Specialist: Microsoft Access Expert (Access and Access 2019)
- Microsoft Office Specialist: Microsoft Excel Expert (Excel and Excel 2019)
- Microsoft Office Specialist: Microsoft Word Expert (Word and Word 2019)

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

*IBC sunseting 8/31/24

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Aligned Occupations

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

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

Business Management Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Business Information Management I	13011400 (1 credit)	None
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.		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Business Information Management II	13011500 (1 credit)	Business Information Management I
In Business Information Management II, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies, create complex word-processing documents, develop sophisticated spreadsheets using charts and graphs, and make an electronic presentation using appropriate multimedia software.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Business Management	13012100 (1 credit)	Business Information Management II
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.		

Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Practicum in Business Management	13012200 (2 credits)	Business Information Management I
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.		

Business Management Course Sequence

Business, Marketing, & Finance

Program of Study: Business Management

prerequisite



Graduation Endorsement: Business & Industry

Education and Training Career Cluster

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

Teaching and Training Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Principles of Education and Training

Level 2

- Child Development

Level 3

- Instructional Practices

Level 4

- Practicum in Education and Training

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in the Texas Association of Future Educators

Work Based Learning Activities

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

Industry-Based Certifications

- Educational Aide I



Aligned Occupations

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

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

Teaching and Training Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Education and Training	13014200 (1 credit)	None
<p>This course is designed to introduce learners to the various careers available within the education and training career cluster. Students will use self-knowledge and educational information to analyze various careers within the education and training career cluster. Students will gain an understanding of the basic knowledge and skills essential to careers within the education and training career cluster.</p>		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Child Development	13024700 (1 credit)	None
<p>Child Guidance is a technical laboratory course that addresses the knowledge and skills related to child growth and guidance equipping students to develop positive relationships with children and effective caregiver skills. Students use these skills to promote the well-being and healthy development of children, strengthen a culturally diverse society, and pursue careers related to the care, guidance, and education of children, including those with special needs.</p>		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Instructional Practices	13014400 (2 credits)	1 credit from Education and Training Career Cluster
<p>Instructional Practices in Education and Training is a field-based internship that provides students with background knowledge of child and adolescent development as well as principles of effective teaching and training practices. Students work under the joint direction and supervision of both a teacher with knowledge of early childhood education and exemplary educators or trainers in direct instructional roles with elementary, middle school and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, develop materials for educational environments, assist with record keeping, and complete other responsibilities of teachers, trainers, paraprofessionals, or other educational personnel. A student must have an excellent discipline record to participate in this course.</p>		

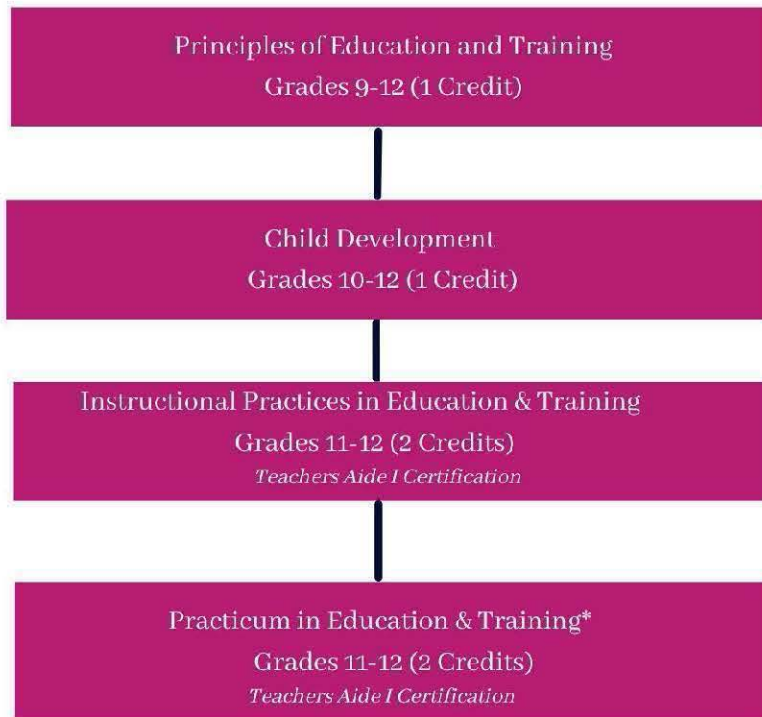
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Practicum in Education and Training	13014500 (2 credits)	Instructional Practices
<p>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.</p>		

Teaching and Training Course Sequence

Education & Training

Program of Study: Teaching & Training



*PREQ: Instructional Practices

Graduation Endorsement: Public Service

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Health Science Career Cluster

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

Healthcare Therapeutic Statewide Program of Study



The Healthcare Therapeutic program of study introduces students to occupations and educational opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study also includes an introduction to the opportunities associated with providing treatment and counsel to patients as well as rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.

Secondary Courses for High School Credit

Level 1

- Principles of Health Science

Level 2

- Medical Terminology

Level 3

- Anatomy and Physiology
- Health Science Theory/Health Science Clinical

Level 4

- Practicum in Health Science/Extended Practicum in Health Science

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Participate in Health Occupation Students of America

Work Based Learning Activities

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



Industry-Based Certifications

- Certified EKG Technician
- Certified Patient Care Technician (CPCT)



Postsecondary Opportunities

Associates Degrees

- Dental Hygienist
- Medical/Clinical Assistant

Bachelor's Degrees

- Dental Hygienist

Master's, Doctoral, and Professional Degrees

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

Aligned Occupations

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

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

Healthcare Therapeutic Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Health Science	13020200 (1 credit)	None
The Principles of Health Science provides an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the healthcare industry. Students will learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students will be expected to work well with others.		

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
Medical Terminology	13020300 (1 credit)	Principles of Health Science
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.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Anatomy and Physiology	13020600 (1 credit)	One credit in Biology, one credit in Chemistry, Integrated Physics and Chemistry, or Physics.
Dual Credit Human Anatomy and Physiology (Lee College) BIOL 2401 – Human Anatomy and Physiology I This course consists of the fundamentals of human anatomy and physiology with an emphasis on the etiology and functions of anatomical systems. Laboratory includes dissection of a mammal, the study of selected mammalian organs, histological studies, and physiological experiments. BIOL 2402 – Human Anatomy and Physiology II This course is a continuation of the fundamentals of human anatomy and physiology with an emphasis on the etiology and functions of anatomical systems. Laboratory includes dissection of a mammal, the study of selected mammalian organs, histological studies, and physiological experiment.		
Health Science Theory	13020400 (1 credit)	Biology
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.		

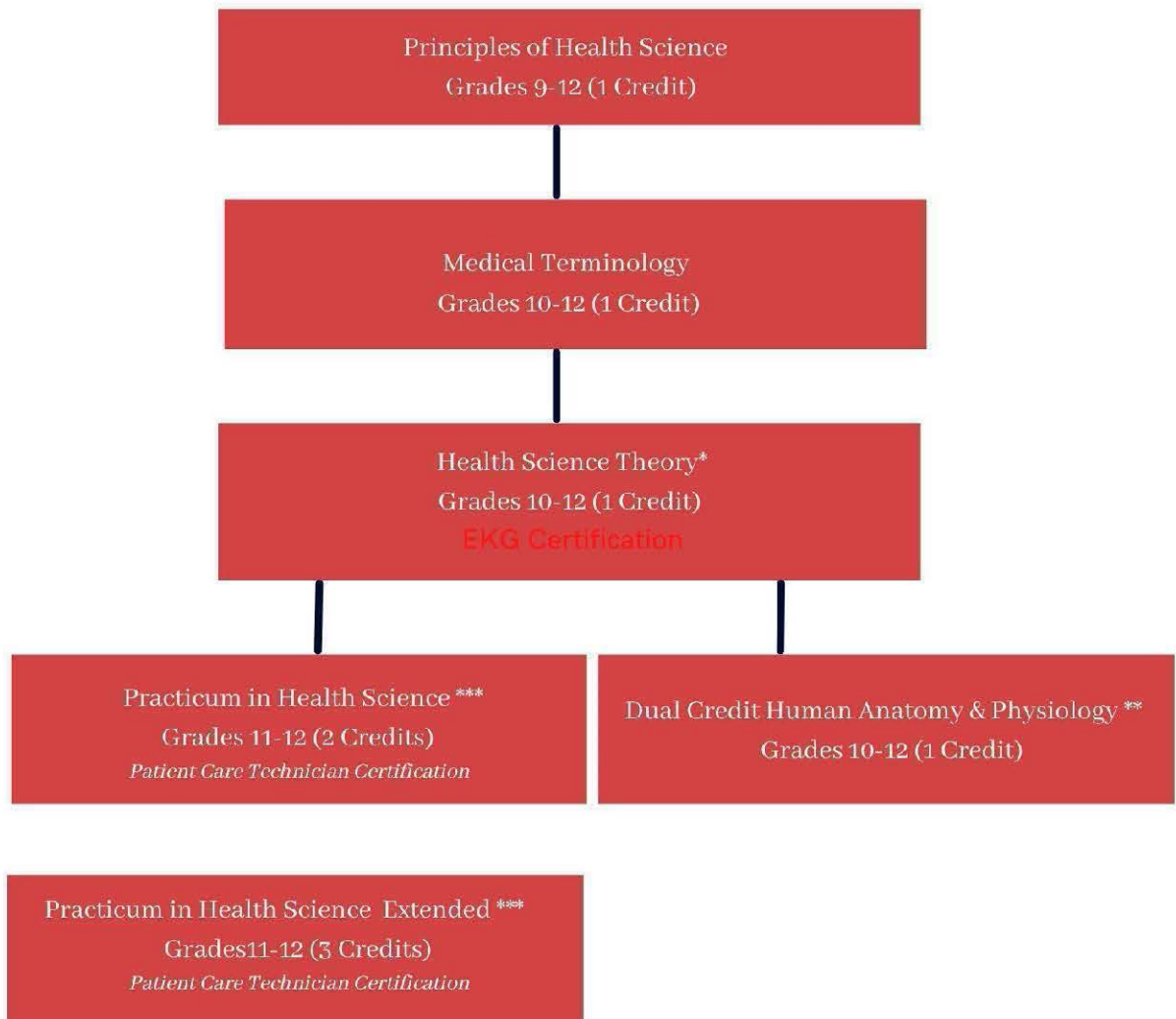
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Practicum in Health Science/ Extended Practicum in Health Science	13020500 (2 credits) 13020505 (3 credits)	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.		

Healthcare Therapeutic Course Sequence

Health Science

Program of Study: Healthcare Therapeutic



* PREQ: Biology

** PREQ: Biology **and** a second science credit

***PREQ: Health Science Theory **and** Biology

Graduation Endorsement: Public Service

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Science, Technology, Engineering, and Mathematics Career Cluster

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

Engineering Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

- Principles of Applied Engineering
- Introduction to Engineering Design (PLTW)

Level 2

Level 3

- Engineering and Design and Development (PLTW)

Level 4

- Engineering Design and Problem Solving

Work-Based Learning and Expanded Learning Opportunities

Work Based Learning Activities

- Intern at an engineering firm
- Shadow a machinist

Industry-Based Certifications

- Autodesk Certified Professional Fusion 360
- Engineering Technology Foundations
- Pre-Engineering/Engineering Technology - Job Ready



- Certified SOLIDWORKS Associate*
*IBC sunseting 8/31/24

Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Aligned Occupations

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,107	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	105

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

Engineering Course Information

Level 1

COURSE NAME	SERVICE ID	PREREQUISITES
Principles of Applied Engineering	13036200 (1 credit)	None
Principles of Applied Engineering is the foundation high-school STEM course. In this course, students are introduced to the engineering profession and the engineering design process. Through both individual and collaborative team activities, students will solve problems using common engineering design and development protocols such as project management and peer review. Skills in technical representation and documentation of design solutions, according to accepted technical standards, and use of current 3D design and modeling software to represent and communicate solutions will be developed		
Introduction to Engineering Design (PLTW)	N1303742 (1 credit)	None
Introduction to Engineering Design (IED) is a high school level course that is for students who are interested in design and engineering. The major focus of the IED course is to expose students to design process, research and analysis, teamwork, communication methods, global and human impacts, engineering standards, and technical documentation. IED gives students the opportunity to develop skills and understanding of course concepts through activities, project, and problem-based (APPB) learning. Used in combination with a teaming approach, APPB-learning challenges students to continually hone their interpersonal skills, creative abilities, and understanding of the design process. It also allows students to develop strategies to enable and direct their own learning, which is the ultimate goal of education.		

Level 3

COURSE NAME	SERVICE ID	PREREQUISITES
Engineering Design and Development (PLTW)	N1303749 (1 credit)	None
Students enrolled in Engineering Design & Development will demonstrate knowledge and skills of the process of design 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 the 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.		

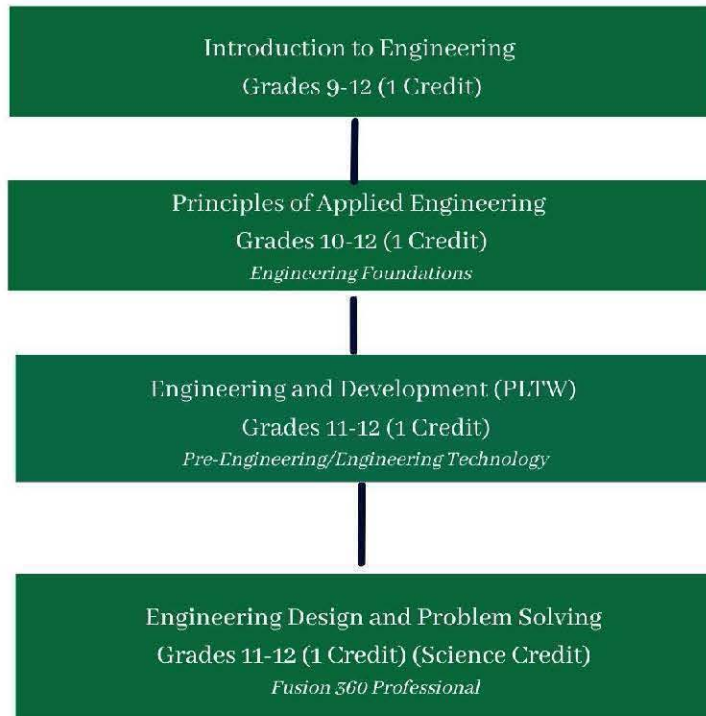
Level 4

COURSE NAME	SERVICE ID	PREREQUISITES
Engineering Design and Problem Solving	13037300 (1 credit)	Algebra I and Geometry
Students enrolled in this course will demonstrate the knowledge and skills necessary for the robotic and automation industry. Through the implementation of the design process, students will transfer advanced academic skills to component designs in a project-based environment. Students will build prototypes or use simulation software to test their designs. Additionally, students explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.		

Engineering Course Sequence

Science, Technology, Engineering, & Mathematics

Program of Study: Engineering



Graduation Endorsement: S.T.E.M

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Science, Technology, Engineering, and Mathematics Career Cluster

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Programming and Software Development Statewide Program of Study



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

Secondary Courses for High School Credit

Level 1

Level 2

- AP Computer Science Principles
- Honors Computer Science I

Level 3

- AP Computer Science A, MATH
- AP Computer Science A, LOTE
- Honors Computer Science II

Level 4

- Honors Computer Science III

Work-Based Learning and Expanded Learning Opportunities

Exploration Activities

- Join TSA
- Participate in a coding club at school

Work Based Learning Activities

- Obtain a programming IBC

Industry-Based Certifications

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



Postsecondary Opportunities

Associates Degrees

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

Bachelor's Degrees

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

Master's, Doctoral, and Professional Degrees

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

Aligned Occupations

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

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

Programming and Software Development Course Information

Level 2

COURSE NAME	SERVICE ID	PREREQUISITES
AP Computer Science Principles	A3580300 (1 credit)	None
AP Computer Science Principles is an introductory college-level computing course that introduces students to the breadth of the field of computer science. Students learn to design and evaluate solutions and apply computer science to solve problems through the development of algorithms and programs. They incorporate abstraction into programs and use data to discover new knowledge. Students also explain how computing innovations and computing systems—including the internetwork, explore their potential impacts and contribute to a computing culture that is collaborative and ethical. (cannot count as a world language/LOTE credit)		
Honors Computer Science I	03580200 (1 credit)	Algebra I
Computer Science is an introduction to the automated processing of information, including computer programming. This course gives students the conceptual background necessary to understand and construct programs, including the ability to specify computations, understand evaluation models, and utilize major constructs such as functions and procedures, data storage, conditionals, recursion, and looping. At the end of this course, students should be able to read and write small programs in the language of Java in response to a given problem or scenario, preparing them to continue on to Computer Science II or AP Computer Science A. This course may count as a world language (cannot count as technology credit AND world language credit). Students should also be aware of university admission requirements when making the decision to forgo LOTE courses, as many universities require foreign language credit.		

Level 3

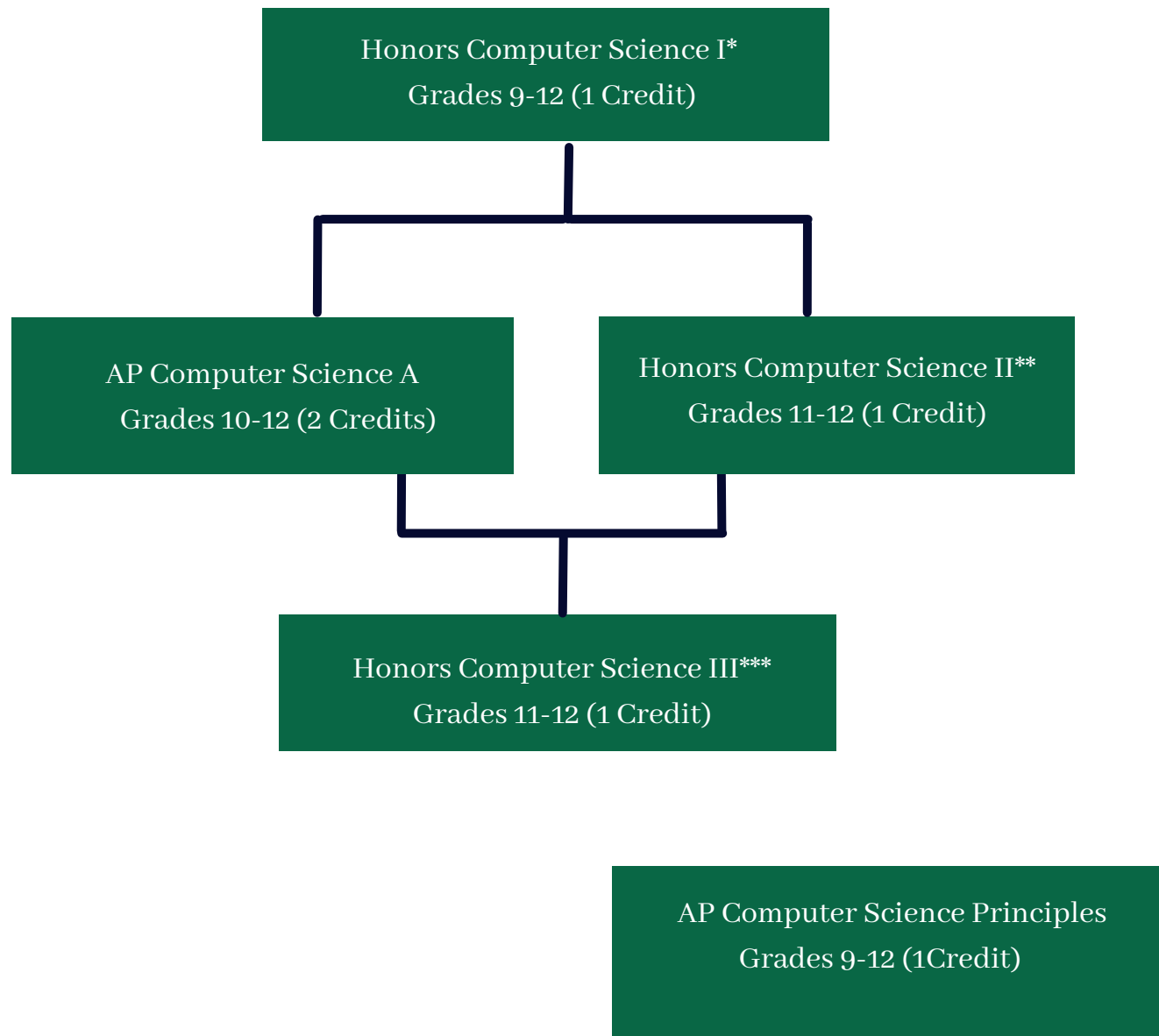
COURSE NAME	SERVICE ID	PREREQUISITES
AP Computer Science A, MATH, LOTE	A3580110 (1 credit) A3580120 (1 credit)	None
AP Computer Science A is a programming course designed to cover the Advance Placement (AP) Computer Science AP Exam topics. The curriculum will build upon the topics addressed in Computer Programming I. Object-oriented components in the language of Java will be stressed. Other topics include decision-making, looping, arrays, inheritance, interfaces, abstract classes, Java collections, sorting, searching, and the AP Case Study. This course qualifies as a math credit in the first semester and a world language credit in the second semester. Students should also be aware of university admission requirements when making the decision to forgo LOTE courses, as many universities require foreign language credit.		
Honors Computer Science II	03580300 (1 credit)	Algebra I, Computer Science I, or Fundamentals of Computer Science
Computer Science II teaches college-level computer science concepts. The curriculum will build upon the topics addressed in Computer Science I. Object-oriented components in the language of Java will be stressed. Other topics include decision-making, looping, arrays, inheritance, interfaces, abstract classes, Java collections, sorting, and searching. This course may count as a world language (Cannot count as technology credit AND world language credit). Students should also be aware of university admission requirements when making the decision to forgo LOTE courses, as many universities require foreign language credit.		

Level 4

Course Name	Service ID	PREREQUISITES
Honors Computer Science III	03580350 (1 credit)	Computer Science II, AP Computer Science A
Advanced Computer Science is a continuation of Computer Science AP and builds upon such topics as object-oriented programming, inheritance, and classes. Students go on to address advanced topics such as stacks, queues, advanced recursion, linked lists, binary trees, advanced sorting, and searching topics in preparation for and alignment with college-level computer science. This course may count as a foreign language (cannot count as technology credit AND world language credit). Students should also be aware of university admission requirements when making the decision to forgo LOTE courses, as many universities require foreign language credit.		

Science, Technology, Engineering, & Mathematics

Program of Study: Programming & Software Development



**REQ: Algebra I

**PREQ: Algebra I, Computer Science I, or Fundamentals of Computer Science

***PREQ: Computer Science II, AP Computer Science A