



## AGRICULTURE, FOOD, & NATURAL RESOURCES

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.

### Agricultural Technology & Mechanical Systems

The Agricultural Technology & Mechanical Systems program of study focuses on opportunities related to applying engineering technology and biological science to agriculture problems related to power & machinery, electrification, structures, soil & water use, and processing agricultural products. This program of study includes diagnosing, repairing, or overhauling machinery & vehicles, such as tractors, harvesters, dairy equipment, and irrigation systems.

### Agricultural Technology & Mechanical Systems Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of AFNR</li> <li>◆ Agricultural Mechanics &amp; Technologies</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Agricultural Structures Design &amp; Fabrication</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Agricultural Equipment Design &amp; Fabrication</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in AFNR (Agriculture Technology &amp; Mechanical Systems)</li> <li>◆ Career Preparation for Program of Study</li> </ul>



**ALIGNED ENDORSEMENT:** Successful completion of the Agricultural Technology & Mechanical Systems program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Farmers, Ranchers, & Other Agricultural Managers

- ◆ Median Wage: \$65,490
- ◆ Annual Openings: 28,020
- ◆ 10-year Growth: 4%

##### Farm Equipment Mechanics & Service Technicians

- ◆ Median Wage: \$46,582
- ◆ Annual Openings: 326
- ◆ 10-year Growth: 23%

##### Mobil Heavy Equipment Mechanics

- ◆ Median Wage: \$57,943
- ◆ Annual Openings: 2,637
- ◆ 10-year Growth: 31%

#### WORK-BASED LEARNING

- ◆ Apprenticeship at an equipment production company
- ◆ Intern at a manufacturing facility

#### EXPANDED LEARNING

- ◆ FFA career, leadership & speaking events
- ◆ Agricultural and related robotics events

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ AWS D1.1
- ◆ AWS D9.1

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Farm Equipment Mechanic I

##### Associate Degrees

- ◆ Diesel Mechanics Technology
- ◆ Industrial Mechanics & Maintenance Technology

##### Bachelor's Degrees

- ◆ Agricultural Engineering
- ◆ Agricultural Systems Management

##### Master's, Doctoral & Prof. Degrees

- ◆ Agricultural Engineering
- ◆ Industrial Technology

##### Additional Stackable IBCs/License

- ◆ Diesel Equipment Technology-Off Highway Specialization CER 1
- ◆ Accredited Farm Manager

## Agricultural Technology & Mechanical Systems Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of AFNR* (Level 1)	9-12	None	13000200 27241 1 credit		BHS LBHS
Ag Mechanics & Metal Technologies (Level 2)	9-12	None	13002200 27220 1 credit		BHS LBHS
Ag Structures Design & Fabrication (Level 3)	10-12	Ag Mechanics & Metal Technologies	13002300 27221 1 credit	AWS D1.1 AWS D9.1	BHS LBHS
Ag Equipment Design & Fabrication (Level 4)	11-12	Ag Mechanics & Metal Technologies	13002350 27222 1 credit	AWS D1.1 AWS D9.1	BHS LBHS
Practicum in AFNR* (Ag Tech & Mechanical Systems) (Level 4)	12	2+ courses for 2+ credits in Ag Mech POS, including either Ag Structures Design & Fabrication OR Ag Equipment Design & Fabrication	13002500 47230 (1st time taken) 2 credits	AWS D1.1 AWS D9.1	BHS LBHS
			13002510 47233 (2nd time taken) 2 credits		
Career Prep or Ext. Career Prep for POS* (Level 4)  (Related job placement required; 10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
			12701141 27515 3 credits		

\*Course is included in additional programs of study.



# Agricultural Technology & Mechanical Systems Course Descriptions

Principles of Agriculture, Food, & Natural Resources	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. 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 opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.
Agricultural Mechanics & Metal Technologies	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. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings.
Agricultural Structures Design & Fabrication	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. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.
Agricultural Equipment Design & Fabrication	In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.
Practicum in Agricultural, Food, & Natural Resources	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. To prepare for careers in agriculture, food and natural resources, students must attain academic skills and knowledge, acquire technical knowledge and skills related to the workplace, 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 their knowledge and skills and technologies in a variety of settings.
Career Preparation for Programs of Study	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.







## AGRICULTURE, FOOD, & NATURAL RESOURCES

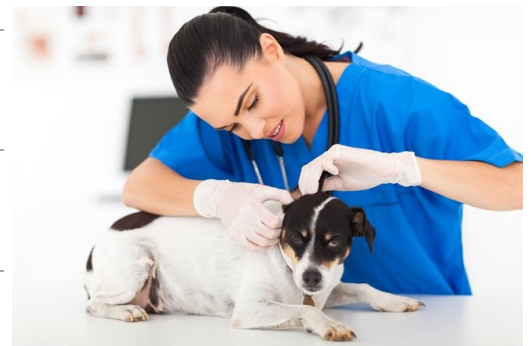
The Agriculture, Food, and Natural Resources (AFNR) Career Cluster focuses on the essential elements of life, food, water, land, and air. This Career Cluster includes a diverse spectrum of occupations, ranging from farmer, rancher, and veterinarian to geologist, land conservationist, and florist.

### Animal Science

The Animal Science program of study focuses on occupational and educational opportunities associated with the science, research, and business of animals and other living organisms. This program of study includes applying 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 will research and analyze the growth and destruction of species and research or diagnose diseases and injuries of animals.

### Animal Science Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of AFNR</li> <li>◆ Small Animal Management</li> <li>◆ Equine Science</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Livestock Production</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Veterinary Medicine Applications</li> <li>◆ Advanced Animal Science</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in AFNR (Animal Science)</li> <li>◆ Career Preparation for Program of Study</li> </ul>



#### Aligned Advanced Placement Courses:

\*This course does not count toward Concentrator/Completer status.

- ◆ AP Biology\*

**ALIGNED ENDORSEMENT:** Successful completion of the Animal Science program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Veterinary Assistant and Laboratory Animal Caretaker

- ◆ Median Wage: \$29,906
- ◆ Annual Openings: 1,348
- ◆ 10-year Growth: 24%

##### Veterinary Technologists and Technicians

- ◆ Median Wage: \$33,679
- ◆ Annual Openings: 1,217
- ◆ 10-year Growth: 24%

##### Veterinarian

- ◆ Median Wage: \$103,160
- ◆ Annual Openings: 347
- ◆ 10-year Growth: 26%

#### WORK-BASED LEARNING

- ◆ Shadow an animal scientist
- ◆ Intern in a veterinary clinic

#### EXPANDED LEARNING

- ◆ FFA career, leadership & speaking events
- ◆ Agriculture industry seminar

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Certified Veterinary Assistant, Level I
- ◆ Elanco Fundamentals of Animal Science
- ◆ Elanco Veterinary Medical Applications

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Reproduction Technician

##### Associate Degrees

- ◆ Biological & Physical Sciences
- ◆ Entomology

##### Bachelor's Degrees

- ◆ Animal Science
- ◆ Zoology/Animal Biology

##### Master's, Doctoral and Professional Degrees

- ◆ Marine Science
- ◆ Biotechnology

##### Stackable IBCs/Licensures

- ◆ Veterinarian
- ◆ Certified Veterinary Technician

## Animal Science Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of AFNR* (Level 1)	9-12	None	13000200 27241 1 credit		BHS LBHS
Small Animal Management (Level 2)	9-12	None	13000400 17220 .5 credit		BHS LBHS
Equine Science (Level 2)	9-12	None	13000500 17230 .5 credit		BHS LBHS
Livestock & Poultry Production (Level 3)	10-12	1+ credits in a level 2 or higher course from the AFNR career cluster	13000300 27242 1 credit		BHS LBHS
Veterinary Medicine (Level 4)	11-12	Small Animal + Equine OR Livestock Production	13000600 27230 1 credit	Elanco Veterinary Medical Applications	BHS LBHS
Advanced Animal Science (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry or IPC Algebra 1 Geometry Either: Small Animal + Equine, or Livestock	13000700 27245 1 credit	Elanco Fundamentals of Animal Science	BHS LBHS
Practicum in AFNR* (Animal Science) (Level 4) (Outside of class clinical hours required)	12	Veterinary Medicine + one additional credit in the Animal Science POS	13002500 47230 (1st time taken) 2 credits  13002510 47246 (2nd time taken) 2 credits	Certified Veterinary Assistant, Level I	BHS LBHS
Career Preparation or Ext. Career Preparation for Program of Study* (Level 4) (Related job placement Required—10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Animal Science Course Descriptions

Principles of Agriculture, Food, & Natural Resources	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. 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 opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.
Small Animal Management	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. To prepare for careers in the field of animal science, students must 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.
Equine Science	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. To prepare for careers in the field of animal science, students must 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 their knowledge and skills in a variety of settings.
Livestock Production	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. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire knowledge and skills related to animal systems and the workplace, 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 their knowledge and skills in a variety of settings.
Veterinary Medicine Applications	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. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings.
Advanced Animal Science	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. To prepare for careers in the field of animal science, students must attain academic skills and knowledge, acquire knowledge and skills related to animal systems, and develop knowledge and skills regarding career opportunities, entry requirements, and industry standards. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.



## Animal Science Course Descriptions (cont.)

Practicum in Agricultural,  
Food, & Natural Resources

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. To prepare for careers in agriculture, food and natural resources, students must attain academic skills and knowledge, acquire technical knowledge and skills related to the workplace, 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 their knowledge and skills and technologies in a variety of settings.

Career Preparation for  
Programs of Study

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.





## AGRICULTURE, FOOD, & NATURAL RESOURCES

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.

### Plant Science

The Plant Science program of study focuses on opportunities associated with the science, research, and business of plants and other living organisms. This program of study includes the application of biology and life science to the real-world life processes of plants and vegetation, either in laboratories or in the field.

### Plant Science Course Pathway

Investigation	◆ Principles of AFNR
Navigation	◆ Greenhouse Operations & Production ◆ Floral Design
Preparation	◆ Advanced Floral Design ◆ Advanced Plant & Soil Science
Application	◆ Practicum in AFNR (Plant Science) ◆ Career Preparation for Program of Study



#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Biology\*
- ◆ AP Environmental Science\*
- ◆ AP Chemistry\*

**ALIGNED ENDORSEMENT:** Successful completion of the Plant Science program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Pesticide Handlers, Sprayers, and Applicators, Vegetation

- ◆ Median Wage: \$46,153
- ◆ Annual Openings: 205
- ◆ 10-year Growth: 17%

##### Biological Technicians

- ◆ Median Wage: \$47,787
- ◆ Annual Openings: 879
- ◆ 10-year Growth: 14%

##### Farmers, Ranchers, Other Ag Mgrs.

- ◆ Median Wage: \$65,490
- ◆ Annual Openings: 28,020
- ◆ 10-year Growth: 4%

#### WORK-BASED LEARNING

- ◆ Internship at a landscaping company
- ◆ Internship with a biological technician at an agricultural research company

#### EXPANDED LEARNING

- ◆ FFA career, leadership & speaking events
- ◆ Industry related competitions
- ◆ Agriculture industry seminar

#### INDUSTRY-BASED CERTIFICATIONS (TBA)

- ◆ TX State Florist's Association Knowledge Based Floral Cert.

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Horticulturist

##### Associate Degrees

- ◆ Biology/Biological Sciences
- ◆ Biological & Physical Sciences

##### Bachelor's Degrees

- ◆ Horticulture
- ◆ Plant Phytopathology

##### Master's, Doctoral and Professional Degrees

- ◆ Plant Breeding
- ◆ Botany/Plant Biology

##### Stackable IBCs/Licensures

- ◆ Nursery Floral License
- ◆ Horticulturist Certification



# Plant Science Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of AFNR* (Level 1)	9-12	None	13000200 27241 1 credit		BHS LBHS
Greenhouse Operations & Prod. (Level 2)	10-12	None	13002050 27267 1 credit		BHS LBHS
Floral Design (Level 3) (Satisfies a Fine Arts requirement)	10-12	None	13001800 27260 1 credit	TX State Florist's Assoc. Knowledge Based Floral Cert.	BHS LBHS
Adv Floral Design (Level 4)	11-12	Floral Design	N1300270 27262 1 credit		BHS LBHS
Adv Plant & Soil (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry or IPC	13002100 27225 1 credit		BHS LBHS
Practicum in AFNR (Plant Science) (Level 4)	12	2+ courses for 2+ credits in Plant Science POS	13002500 47240 (1st time taken) 2 credits		BHS LBHS
			13002510 47245 (2nd time taken) 2 credits		
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Plant Science Course Descriptions

### Principles of Agriculture, Food, & Natural Resources

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. 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 opportunities to learn, reinforce, experience, apply, and transfer their knowledge and skills in a variety of settings.

### Greenhouse Operations & Production

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. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

### Floral Design

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. To prepare for careers in floral design, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural 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 their knowledge and skills and technologies in a variety of settings.

### Advanced Plant & Soil

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, 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 their knowledge and skills and technologies in a variety of settings.

### Practicum in Agricultural, Food, & Natural Resources

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. To prepare for careers in agriculture, food and natural resources, students must attain academic skills and knowledge, acquire technical knowledge and skills related to the workplace, 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 their knowledge and skills and technologies in a variety of settings.

### Career Preparation for Program of Study

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

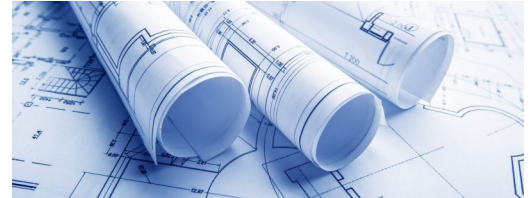
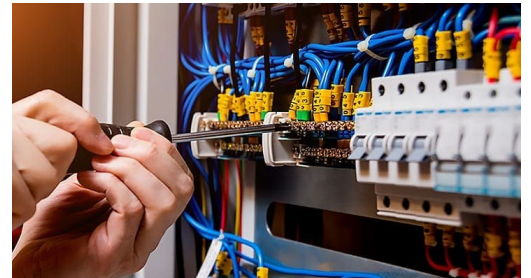
The Architecture & Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment. This Career Cluster provides an overview of the various fields in the construction industry including architecture, interior design, construction management, carpentry, electrical, plumbing, HVAC, and masonry.

## Carpentry

The Carpentry program of study focuses on opportunities related to constructing, installing, and repairing structures and fixtures made of wood including frameworks, partitions, joists, studding, rafters, and stairways. The program of study includes installing, dismantling, or moving machinery and heavy equipment according to layout plans, blueprints, or other drawings.

### Carpentry Course Pathway

Investigation	◆ Principles of Construction
Navigation	◆ Construction Technology I
Preparation	◆ Construction Technology II
Application	◆ Practicum in Construction Technology ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Carpentry program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Carpenters

- ◆ Median Wage: \$46,272
- ◆ Annual Openings: 5,623
- ◆ 10-year Growth: 15%

##### Drywall & Ceiling Tile Installers

- ◆ Median Wage: \$44,699
- ◆ Annual Openings: 758
- ◆ 10-year Growth: 14%

##### Construction Managers

- ◆ Median Wage: \$95,072
- ◆ Annual Openings: 6,325
- ◆ 10-year Growth: 24%

#### WORK-BASED LEARNING

- ◆ Internship with a carpenter
- ◆ Pre-apprenticeship

#### EXPANDED LEARNING

- ◆ Job Shadowing
- ◆ SkillsUSA participation & competition

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ NCCER Core
- ◆ NCCER Carpentry Level 1

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Carpenter

##### Associate Degrees

- ◆ Construction Management
- ◆ Construction Engineering
- ◆ Building Construction Technology

##### Bachelor's Degrees

- ◆ Construction Engineering
- ◆ Construction Science
- ◆ Construction Site Management

##### Master's, Doctoral & Professional Degrees

- ◆ Construction Engineering
- ◆ Construction Management
- ◆ Project Management



## Carpentry Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Construction* (Level 1)	9-12	None	13004220 27601 1 credit	NCCER Core	BHS LBHS
Construction Technology I (Level 2)	10-12	Principles of Construction	13005100 47607 2 credits	NCCER Core NCCER Carpentry Level I	BHS LBHS
Construction Technology II (Level 3)	11-12	Construction Technology I	13005200 47615 2 credits	NCCER Electrical NCCER Plumbing NCCER Masonry	BHS LBHS
Practicum in Construction Technology* (Level 4)	12	Construction Technology II	13005250 47616 2 credits	See above	BHS LBHS
Career Preparation for Program of Study* (Level 4) (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Extended Career Preparation for Program of Study* (Level 4) (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Carpentry Course Descriptions

Principles of Construction	Principles of Construction is intended to provide an introduction and lay a solid foundation for those students entering the construction or craft skilled areas. The course provides a strong knowledge of construction safety, construction mathematics, and common hand and power tools. This course also provides communication and occupation skills to assist the student in obtaining and maintaining employment.
Construction Technology I	In Construction Technology I, students will gain knowledge and skills needed to enter the workforce as carpenters or building maintenance supervisors or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in safety, tool usage, building materials, codes, and framing.
Construction Technology II	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.
Practicum in Construction Technology	In Practicum in Construction Technology, students will be challenged with the application of knowledge and skills gained in previous construction-related coursework. In many cases students will be allowed to work at a job (paid or unpaid) outside of school or be involved in local projects the school has approved for this class.
Career Preparation for Program of Study	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 hanging 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 & COMMUNICATIONS

The Arts, A/V Technology & Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual & performing arts & design, journalism, and entertainment services. Careers in the Arts, A/V Technology & Communications 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

The Digital Communications program of study focuses on opportunities related to the production of audio and visual media formats for various purposes, such as TV broadcasts, advertising, video production, or motion pictures. The program of study includes operating machines and equipment such as microphones, sound speakers, video screens and monitors, projectors, sound and mixing boards, and related electronic equipment to record sound and images.

### Digital Communications Course Pathway

Investigation	◆ Principles of Arts, A/V Technology & Communications
Navigation	◆ A/V Production I
Preparation	◆ A/V Production II + Lab
Application	◆ Practicum in A/V Production ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Digital Communications program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Audio and Video Technicians

- ◆ Median Wage: \$46,319
- ◆ Annual Openings: 626
- ◆ 10-year Growth: 30%

##### Camera Operators, Television, Video and Film

- ◆ Median Wage: \$48,422
- ◆ Annual Openings: 155
- ◆ 10-year Growth: 20%

##### Producers and Directors

- ◆ Median Wage: \$65,029
- ◆ Annual Openings: 522
- ◆ 10-year Growth: 12%

#### WORK-BASED LEARNING

- ◆ Shadow a sound designer or broadcast technician
- ◆ Intern with a technical director

#### EXPANDED LEARNING

- ◆ Student Television Network participation
- ◆ Podcast creation
- ◆ SkillsUSA or TSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Adobe Premiere Pro
- ◆ Adobe Photoshop

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Light Technician

##### Associate Degrees

- ◆ Commercial & Advertising Art
- ◆ Animation, & Special Effects

##### Bachelor's Degrees

- ◆ Cinematography Production
- ◆ Recording Arts Technology

##### Master's, Doctoral & Pro. Degrees

- ◆ Animation, Video Graphics & Special Effects
- ◆ Communications Technology

##### Stackable IBCs/Licensures

- ◆ CompTIA Digital Media Entertainment Professional (DMEP)



## Digital Communications Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Arts, A/V Technology & Communications* (Level 1)	9-12	None	13008200 27349 1 credit		BHS LBHS BNT
A/V Production I (Level 2)	10-12	Recommended pre- or co-requisite: Principles of Arts, A/V Technology & Communications	13008500 27350 1 credit		BHS LBHS
A/V Prod. II + Lab (Level 3) (Outside of class work required) (2 credit course scheduled for 1 period)	11-12	A/V Production I	13008610 27356 2 credits	Adobe Premier Pro	BHS LBHS
Practicum in A/V Production (Level 4)	12	A/V Production II	13008700 47360 2 credits	Adobe Premier Pro Adobe Photoshop	BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



# Digital Communications Course Descriptions

Principles of Arts, A/V  
Technology &  
Communications

Careers in the Arts, Audio/Video Technology, and Communications 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. 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.

A/V Production I

Careers in audio and video technology and film production span all aspects of the audio/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 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.

A/V Production II + Lab

Careers in audio and video technology and film production span all aspects of the audio/video communications industry. 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 post-production products. Through diverse forms of storytelling and production, students will exercise and develop creativity, intellectual curiosity, 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 corequisite for the course affords necessary time devoted specifically to the production and post-production process.

Practicum in A/V  
Production

Careers in audio/video production span all aspects of the audio/video communications industry. 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 Preparation for  
Program of Study

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 hanging 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 & COMMUNICATIONS

The Arts, A/V Technology & Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual & performing arts/design, journalism, and entertainment services. Careers in the Arts, A/V Technology & Communications 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 & Interactive Media

The Graphic Design & Interactive Media program focuses on opportunities related to designing graphics to meet specific commercial photography needs, such as packaging, displays, or logos. The program of study includes designing clothing and accessories, 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.

### Graphic Design & Interactive Media Course Pathway

Investigation	◆ Principles of Arts, A/V Technology & Communications
Navigation	◆ Commercial Photography I ◆ Graphic Design & Illustration I
Preparation	◆ Commercial Photography II + Lab ◆ Graphic Design & Illustration II
Application	◆ Practicum in Commercial Photography ◆ Practicum in Graphic Design ◆ Career Prep for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Graphic Design & Interactive Media program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Graphic Designers

- ◆ Median Wage: \$50,973
- ◆ Annual Openings: 1,766
- ◆ 10-year Growth: 10%

##### Art Directors

- ◆ Median Wage: \$81,926
- ◆ Annual Openings: 619
- ◆ 10-year Growth: 18%

##### Web and Digital Interface Designers

- ◆ Median Wage: \$67,379
- ◆ Annual Openings: 1,119
- ◆ 10-year Growth: 57%

#### WORK-BASED LEARNING

- ◆ Shadow an art director
- ◆ Intern in a marketing & communications department

#### EXPANDED LEARNING

- ◆ Student Television Network participation
- ◆ SkillsUSA or TSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Adobe Photoshop
- ◆ Adobe Illustrator
- ◆ Adobe InDesign

#### POSTSECONDARY LEARNING

##### Apprenticeship

- ◆ Graphic Designer

##### Associate Degrees

- ◆ Graphic Designer/Digital Arts

##### Bachelor's Degrees

- ◆ Web, Digital/Multimedia & Information Resources Design
- ◆ Design & Visual Communications

##### Master's, Doctoral & Prof. Degrees

- ◆ Game & Interactive Media Design
- ◆ Animation Interactive Technology, Video Graphics, & Special Effects

##### Stackable IBCs/Licensures

- ◆ Certified Textile Designer (CTD)



## Graphic Design & Interactive Media Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Arts, A/V Technology & Communications * (Level 1)	9-12	None	13008200 27349 1 credit		BHS LBHS BNT
Commercial Photography I (Level 2)	10-12	Recommended pre- or co-requisite: Principles of Arts, A/V Technology & Communications	13009100 27380 1 credit		BHS LBHS
Graphic Design & Illustration I* (Level 2)	10-12	Recommended pre- or co-requisite: Principles of Arts, A/V Technology & Communications	13008800 27370 1 credit		BHS LBHS BNT
Commercial Photography II + Lab (Level 3) (Outside of class work required) (2 credit course scheduled for 1 period)	11-12	Commercial Photography I	13009210 27382 2 credits	Adobe Photoshop	BHS LBHS
Graphic Design & Illustration II (Level 3)	10-12	Graphic Design & Illustration I	13008900 27375 1 credit	Adobe Photoshop	BHS LBHS BNT
Practicum in Commercial Photography (Level 4)	12	Commercial Photography II	13009250 47385 2 credits	Adobe Photoshop Adobe InDesign	BHS LBHS
Practicum in Graphic Design & Illustration (Level 4)	12	Graphic Design II	13009000 47370 2 credits	Adobe Illustrator Adobe Photoshop	BHS LBHS BNT
Career Preparation for Program of Study* (Level 4) (Related job placement required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS BNT
Extended Career Preparation for Program of Study* (Level 4) (Related job placement required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS BNT

\*Course is included in additional programs of study.



# Graphic Design & Interactive Media Course Descriptions

Principles of Arts, A/V Technology & Communications	Careers in the Arts, Audio/Video Technology, and Communications 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. 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.
Commercial Photography I	Careers in commercial photography require skills that span all aspects of the industry from setting up a shot to delivering products in a competitive market. 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 commercial photography industry with a focus on creating quality photographs.
Graphic Design & Illustration I	Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. 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.
Commercial Photography II + Lab	Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. 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.
Graphic Design & Illustration II	Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, 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 understanding of the industry with a focus on mastery of content knowledge and skills.
Practicum in Commercial Photography	Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. 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.
Career Preparation for Program of Study	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 hanging workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.



# Graphic Design & Interactive Media Course Descriptions

Practicum in Graphic Design & Illustration

Careers in graphic design and illustration span all aspects of the advertising and visual communications industry. 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 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.

Career Preparation for Program of Study

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 hanging workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.



## BUSINESS, MARKETING, & FINANCE

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

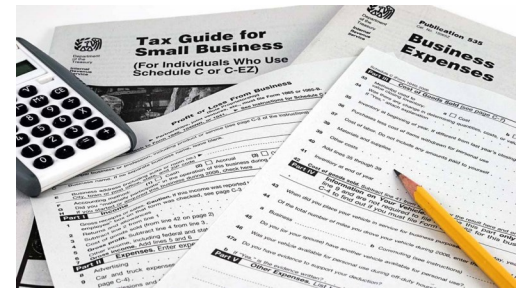
### Accounting & Financial Services

The Accounting & Financial Services program of study focuses on occupational and educational opportunities associated with examining, analyzing, and interpreting financial records. It includes exploration of financial services, preparing financial statements, auditing financial statements prepared by others, and interpreting accounting records. This program of study also introduces students to mathematical modeling tools.



### Accounting & Financial Services Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Business, Marketing &amp; Finance</li> <li>◆ Business Information Management I</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Money Matters</li> <li>◆ Accounting I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Accounting II</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Business Management</li> <li>◆ Career Preparation for Program of Study</li> </ul>



**ALIGNED ENDORSEMENT:** Successful completion of the Accounting & Financial Services program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Tax Preparers

- ◆ Median Wage: \$56,956
- ◆ Annual Openings: 898
- ◆ 10-year Growth: 14%

##### Accountants and Auditors

- ◆ Median Wage: \$78,022
- ◆ Annual Openings: 12,989
- ◆ 10-year Growth: 20%

##### Personal Financial Advisors

- ◆ Median Wage: \$77,605
- ◆ Annual Openings: 1,877
- ◆ 10-year Growth: 21%

#### WORK-BASED LEARNING

- ◆ Internship or job placement with a CPA
- ◆ Shadow a financial advisor

#### EXPANDED LEARNING

- ◆ BPA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Volunteer Income Tax Assistant/ Tax Counseling Certification: Basic (TBA)
- ◆ Intuit Quickbooks (TBA)
- ◆ MB-920: Microsoft Dynamics 365 Fundamentals Finance & Operations Apps (TBA)
- ◆ MOS: Microsoft Excel Expert (Excel 2019)

#### POSTSECONDARY LEARNING

##### Associate Degrees

- ◆ Accounting
- ◆ Bookkeeping

##### Bachelor's Degrees

- ◆ Accounting
- ◆ Banking & Financial Support

##### Master's, Doctoral and Professional Degrees

- ◆ Business Admin. & Mgmt.
- ◆ Finance

##### Stackable IBCs/Licensures

- ◆ Project Mgmt. Professional
- ◆ Property Tax Consultants Service Contract Providers



## Accounting & Financial Services Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Business, Marketing, & Finance* (Level 1)	9-12	None	13011200 27021 1 credit		BHS LBHS
Business Information Mgmt. I* (Level 2)	9-12	None	13011400 27000 1 credit		BHS LBHS
Money Matters (Level 1)	10-12	Recommended pre- or co-requisite: Principles of BM&F OR BIM I	13016200 27025 1 credit		BHS LBHS
Accounting I (Level 2)	10-12	Recommended pre- or co-requisite: Principles of BM&F OR BIM I	13016600 27010 1 credit	Volunteer Income Tax Assistant/Tax Counseling Certification: Basic  MOS: Microsoft Excel Expert (Excel 2019)	BHS LBHS
Accounting II (Level 3) (Satisfies a math requirement)	11-12	Accounting I	13016700 27015 1 credit	See above	BHS LBHS
Practicum in Business Mgmt.* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13012200 47020 2 credits	See above	BHS LBHS
Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Extended Career Prep for Program of Study* (Level 4) (Related job placement required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



# Accounting & Financial Services Course Descriptions

## Principles of Business, Marketing, & Finance

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 I

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.

## Money Matters

In Money Matters, students will investigate money management from a personal financial perspective. Students will apply critical-thinking skills to analyze financial options based on current and projected economic factors. Students will gain knowledge and skills necessary to establish short-term and long-term financial goals. Students will examine various methods of achieving short-term and long-term financial goals through various methods such as investing, tax planning, asset allocating, risk management, retirement planning, and estate planning.

## Accounting I

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 II

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.



## Accounting & Financial Services Course Descriptions (cont.)

### Practicum in Business Management

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 for Program of Study

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.





## BUSINESS, MARKETING, & FINANCE

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

### Business Management

The Business Management program of study focuses on occupational and educational opportunities associated with planning, directing, and coordinating the administrative services and operations of an organization. It includes formulating policies, managing daily operations, and allocating the use of materials and human resources. This program of study also introduces students to mathematical modeling tools and organizational evaluation methods.

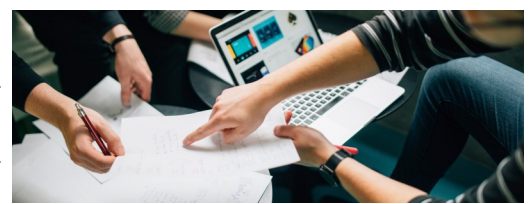
### Business Management Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Business, Marketing &amp; Finance</li> <li>◆ Business Information Management I</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Business Management</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Statistics &amp; Business Decision Making</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Business Management</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Statistics\*
- ◆ AP Microeconomics\*



**ALIGNED ENDORSEMENT:** Successful completion of the Business Management program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### First-Line Office Supervisor and Administrative Support

- ◆ Median Wage: \$59,585
- ◆ Annual Openings: 13,885
- ◆ 10-year Growth: 9%

##### Human Resources Specialists

- ◆ Median Wage: \$61,278
- ◆ Annual Openings: 6,2399
- ◆ 10-year Growth: 23%

##### General & Operations Managers

- ◆ Median Wage: \$83,220
- ◆ Annual Openings: 25,450
- ◆ 10-year Growth: 23%

#### WORK-BASED LEARNING

- ◆ Internship in HR department
- ◆ Job shadow a COO

#### EXPANDED LEARNING

- ◆ BPA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ MB-920: Microsoft Dynamics 365 Fundamentals Finance & Operations Apps (TBA)
- ◆ MOS: Microsoft Word Expert (Word 2019)
- ◆ Student Social Media Mktg.

#### POSTSECONDARY LEARNING

##### Associate Degrees

- ◆ Business Admin. & Management
- ◆ Human Resources Management

##### Bachelor's Degrees

- ◆ Business Analytics
- ◆ Accounting & Business/Mgmt.

##### Master's, Doctoral and Professional Degrees

- ◆ Business Admin. & Management
- ◆ Organizational Leadership

##### Stackable IBCs/Licensures

- ◆ Professional Certificate in Team Leadership
- ◆ Property Tax Professionals

## Business Management Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Business, Mktg, & Finance* (Level 1)	9-12	None	13011200 27021 1 credit		BHS LBHS
Business Info Mgmt. I* (Level 2)	9-12	None	13011400 27000 1 credit		BHS LBHS
Business Management (Level 3)	10-12	Recommended pre- or co- requisite: Principles of Business, Marketing, & Finance or BIM 1	13012100 27032 1 credit	MB-920: Microsoft Dynamics 365 Fundamentals Finance & Operations (TBA) MOS Microsoft Word Expert (Word 2019) Student Social Media Marketing	BHS LBHS
Statistics & Business Decision Making* (Level 4) (Satisfies a math requirement)	11-12	Algebra II	13016900 27031 1 credit	Student Social Media Marketing	BHS LBHS
Practicum in Business Mgmt.* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13012200 47020 2 credit	Student Social Media Marketing	BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Business Management Course Descriptions

### Principles of Business, Marketing & Finance

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 I

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.

### Business Management

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.

### Statistics & Business Decision Making

Statistics and Business Decision Making is an introduction to statistics and the application of statistics to business decision making. Students will use statistics to make business decisions. Students will determine the appropriateness of methods used to collect data to ensure conclusions are valid.

### Practicum in Business Management

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 for Program of Study

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.





## BUSINESS, MARKETING, & FINANCE

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

### Entrepreneurship

The Entrepreneurship program of study focuses on occupational and educational opportunities associated with planning, launching, directing, and coordinating public or private sector ventures. This program of study includes formulating policies, launching businesses or organizations, managing daily operations, analyzing management structures, and planning for the use of materials and human resources.



### Entrepreneurship

#### Lake Belton High School Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Business, Marketing &amp; Finance</li> <li>◆ Business Information Management I</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Entrepreneurship I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Entrepreneurship II</li> <li>◆ Statistics &amp; Business Decision Making</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Business Management</li> <li>◆ CTE Project-Based Capstone</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Statistics\*



**ALIGNED ENDORSEMENT:** Successful completion of the Entrepreneurship program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### General & Operations Managers

- ◆ Median Wage: \$83,220
- ◆ Annual Openings: 25,450
- ◆ 10-year Growth: 23%

##### Management Analysts

- ◆ Median Wage: \$93,983
- ◆ Annual Openings: 6,030
- ◆ 10-year Growth: 25%

##### Chief Executives

- ◆ Median Wage: \$163,567
- ◆ Annual Openings: 648
- ◆ 10-year Growth: 3%

#### WORK-BASED LEARNING

- ◆ Business incubator internship
- ◆ School-based enterprise launch participation

#### EXPANDED LEARNING

- ◆ BPA participation
- ◆ Job shadow an entrepreneur

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Student Social Media Mktg.
- ◆ Customer Service & Sales (TBA)
- ◆ Entrepreneurship & Small Business

#### POSTSECONDARY LEARNING

##### Associate Degrees

- ◆ Operations Mgmt. & Supervision
- ◆ Organizational Leadership

##### Bachelor's Degrees

- ◆ Business Admin. & Management
- ◆ Public Administration

##### Master's, Doctoral and Professional Degrees

- ◆ Business Administration
- ◆ Public Administration

##### Stackable IBCs/Licensures

- ◆ Salesforce
- ◆ Service Contract Provider



## Entrepreneurship Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Business, Marketing, & Finance* (Level 1)	9-12	None	13011200 27021 1 credit		BHS LBHS
Business Information Mgmt. I* (Level 2)	9-12	None	13011400 27000 1 credit		BHS LBHS
Entrepreneurship I* (Level 2)	10-12	None	13011101 27030 1 credit		LBHS
Entrepreneurship II (Level 3)	11-12	Entrepreneurship I	N1303423 27038 1 credit	Stukent Social Media Marketing  Entrepreneurship & Small Business	LBHS
Statistics & Business Decision Making* (Level 4) (Satisfies a math requirement)	11-12	Algebra II	13016900 27031 1 credit	Stukent Social Media Marketing  Entrepreneurship & Small Business	BHS LBHS
CTE Project-Based Capstone*	12	3+ courses for 3+ credits (with level 2 or higher course) in aligned POS (sans Career Prep)	12701101 27044 1 credit	Stukent Social Media Marketing  Entrepreneurship & Small Business	
Practicum in Business Mgmt.* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13012200 47020 2 credits	Stukent Social Media Marketing  Entrepreneurship & Small Business	BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Entrepreneurship Course Descriptions

Principles of Business, Marketing & Finance	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 I	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.
Entrepreneurship I	In Entrepreneurship, students will gain the knowledge and skills needed to become an entrepreneur. Students will learn the principles necessary to begin and operate a business. The primary focus of the course is to help students understand the process of analyzing a business opportunity, preparing a business plan, determining feasibility of an idea using research, and developing a plan to organize and promote the business and its products and services. In addition, students will understand the capital required, the return on investment desired, and the potential for profit.
Entrepreneurship II	Students will work in close cooperation with local industry leaders, community members, and educators to develop ideas and objectives, complete a business model canvas, pitch to potential investors, register with governmental agencies, and develop brand identity. The goal and outcome of the course is to have a business launched by the end of the course or have the tools necessary to launch and operate a business.
Statistics & Business Decision Making	Statistics and Business Decision Making is an introduction to statistics and the application of statistics to business decision making. Students will use statistics to make business decisions. Students will determine the appropriateness of methods used to collect data to ensure conclusions are valid.
CTE Project-Based Capstone	Career and Technical Education Project-Based Capstone is a course designed for students to develop and enhance essential skills while investigating real-world problems, issues, or interests. Students work independently or collaboratively with others within or across career clusters or programs of study. Students partner with mentor(s) or advisor(s) to develop a project. Students conduct research, compile findings, implement project activities appropriate to student contribution, and present their work to a relevant audience that may include industry experts. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings to become productive and contributing members of society.



## Entrepreneurship Course Descriptions (cont.)

### Practicum in Business Management

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 for Program of Study

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.



# BUSINESS, MARKETING, & FINANCE

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

## Marketing & Sales

The Marketing & Sales program of study focuses on occupational and educational opportunities associated with collecting information to estimate potential sales of a product or service and create campaigns to market or distribute goods and services. It includes applying data related to customer demographics, preferences, needs, and buying habits.



### Marketing & Sales Course Pathway

Investigation	◆ Principles of Business, Marketing & Finance
Navigation	◆ Virtual Business ◆ Sports & Entertainment Marketing ◆ Social Media Marketing ◆ Advertising
Preparation	◆ Statistics & Business Decision Making
Application	◆ Advanced Marketing ◆ Career Preparation for Program of Study

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Statistics\*



**ALIGNED ENDORSEMENT:** Successful completion of the Marketing & Sales program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Retail Salespersons

- ◆ Median Wage: \$28,356
- ◆ Annual Openings: 56,132
- ◆ 10-year Growth: 15%

##### Market Research Analysts

- ◆ Median Wage: \$60,926
- ◆ Annual Openings: 5,688
- ◆ 10-year Growth: 35%

##### Sales Managers

- ◆ Median Wage: \$123,729
- ◆ Annual Openings: 3,368
- ◆ 10-year Growth: 21%

#### WORK-BASED LEARNING

- ◆ Internship at a marketing, advertising, sales, or retail company
- ◆ Job shadow a pharmaceutical sales representative

#### EXPANDED LEARNING

- ◆ BPA participation
- ◆ Job shadow an account representative

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Student Social Media Marketing
- ◆ Customer Service & Sales (TBA)

#### POSTSECONDARY LEARNING

##### Associate Degrees

- ◆ Marketing/Marketing Mgmt.
- ◆ Retail Management

##### Bachelor's Degrees

- ◆ Business Administration
- ◆ Marketing Management
- ◆ Fashion Merchandising

##### Master's, Doctoral and Professional Degrees

- ◆ Business Administration
- ◆ Applied Economics
- ◆ Business Analytics

##### Stackable IBCs/Licensures

- ◆ Salesforce
- ◆ Service Contract Provider



## Marketing & Sales Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Business, Marketing, & Finance* (Level 1)	9-12	None	13011200 27021 1 credit		BHS LBHS
Virtual Business* (Level 2)	10-12	None	13012000 17024 .5 credit		BHS LBHS
Sports & Entertainment Mktg. (Level 2)	10-12	Recommended pre-requisite: Prin. of Business, Marketing & Finance OR Digital Media	13034600 17023 .5 credit	Stukent Social Media Marketing	BHS LBHS
Social Media Mktg. (Level 3)	10-12	Recommended pre-requisite: Prin. of Business, Marketing & Finance OR Digital Media	13034650 17025 .5 credit	Stukent Social Media Marketing	BHS LBHS
Advertising* (Level 3)	10-12	Recommended pre-requisite: Prin. of Business, Marketing & Finance OR Digital Media	13034200 17030 .5 credit	Stukent Social Media Marketing	BHS LBHS
Statistics & Business Decision Making* (Level 4) (Satisfies a math requirement)	11-12	Algebra II	13016900 27031 1 credit	Stukent Social Media Marketing	BHS LBHS
Advanced Marketing (Level 4)	11-12	1+course for 1+ credit in the Marketing & Sales program of study	13034700 47030 2 credit	Stukent Social Media Marketing	BHS LBHS
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement required—10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



Belton ISD does not discriminate on the basis of race, color, national origin, sex, or disability in its programs or activities. The following person has been designated to handle inquiries regarding the nondiscrimination policies: Title IX Coordinator | 400 N. Wall Street, Belton, TX 76513 | 254.215.2078 | casandra.spearman@bisd.net



## Marketing & Sales Course Descriptions

Principles of Business, Marketing & Finance	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.
Virtual Business* (Level 2)	Virtual Business is designed for students to start a virtual business by creating a web presence, conducting online and off-line marketing, examining contracts appropriate for an online business, and demonstrating project-management skills. Students will also demonstrate bookkeeping skills for a virtual business, maintain business records, and understand legal issues associated with a virtual business.
Sports & Entertainment Mktg. (Level 2)	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 Mktg. (Level 3)	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 (Level 3)	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.
Statistics & Business Decision Making	Statistics and Business Decision Making is an introduction to statistics and the application of statistics to business decision making. Students will use statistics to make business decisions. Students will determine the appropriateness of methods used to collect data to ensure conclusions are valid.
Advanced Marketing	In Advanced Marketing, students will gain knowledge and skills that help them become proficient in one or more of the marketing functional areas. Students will illustrate appropriate management and research skills to solve problems related to marketing. This course covers technology, communication, and customer-service skills.
Career Preparation for Program of Study	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 hanging workplace. Career preparation is relevant and rigorous, supports student attainment of academic standards, and effectively prepares students for college and career success.







## EDUCATION & TRAINING

The Education & Training Career Cluster focuses on planning, managing, and providing educational 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 & Training Career Cluster.

### Teaching & Training

The Teaching & Learning program of study focuses on opportunities associated with careers related to teaching, instructing, and creating instructional and enrichment materials. The program of study includes recognizing a variety of student groups and their corresponding needs, identifying processes for developing curriculum and coordinating educational content, and coaching groups and individuals.

### Teaching & Training Course Pathway

Investigation	◆ Principles of Human Services
Navigation	◆ Child Development
Preparation	◆ Instructional Practices
Application	◆ Practicum in Education & Training ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Teaching & Training program of study fulfills the requirements of the Public Service endorsement.

#### ALIGNED OCCUPATIONS

##### Teaching Assistants, Except Postsecondary

- ◆ Median Wage: \$28,066
- ◆ Annual Openings: 10,000
- ◆ 10-year Growth: 15%

##### Secondary School Teachers, Except Special Education & CTE

- ◆ Median Wage: \$61,035
- ◆ Annual Openings: 8,288
- ◆ 10-year Growth: 14%

##### Education Administrator, K-12

- ◆ Median Wage: \$81,976
- ◆ Annual Openings: 2,676
- ◆ 10-year Growth: 14%

#### WORK-BASED LEARNING

- ◆ Camp counselor
- ◆ Mentor
- ◆ Tutor

#### EXPANDED LEARNING

- ◆ TAFE or FCCLA participation
- ◆ Job shadow

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Educational Aide I

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Teacher Apprentice

##### Associate Degrees

- ◆ Adult & Continuing Education
- ◆ Educational/Instructional Tech

##### Bachelor's Degrees

- ◆ Elementary Education
- ◆ Secondary Education

##### Master's, Doctoral and Professional Degrees

- ◆ Education Leadership & Administration
- ◆ Curriculum & Instruction

##### Stackable IBCs/Licensures

- ◆ Generalists, Grades EC—4



## Teaching & Training Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Human Services* (Level 1)	9-12	None	13024200 27501 1 credit		BHS LBHS
Child Development* (Level 2)	10-12	Recommend pre- or co- requisite: Principles of Education & Training OR Principles of Human Services	13024700 27570 1 credit		BHS LBHS
Instructional Practices (Level 3)	11-12	Child Development	13014400 47560 2 credits	Educational Aide I	BHS LBHS
Practicum in Education & Training (Level 4)	12	Instructional Practices	13014500 47565 2 credits	Educational Aide I	BHS LBHS
Career Prep for Program of Study* (Level 4) (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Ext. Career Prep for Program of Study* (Level 4) (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.

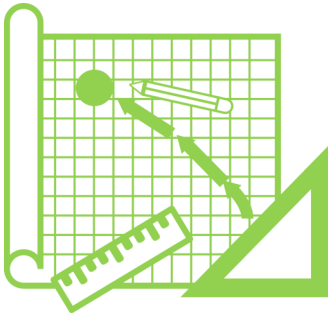


## Teaching & Training Course Descriptions

Principles of Human Services	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	Child Development is a course that addresses knowledge and skills related to child growth and development from prenatal through school-age children. 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	Instructional Practices is a field-based (practicum) course 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 perform other duties of teachers, trainers, paraprofessionals, or other educational personnel.
Practicum in Education & Training	Practicum in Education and Training is a field-based course that provides students with 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 perform other duties of classroom teachers, trainers, paraprofessionals, or other educational personnel.
Career Preparation for Program of Study	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.







## ENGINEERING

The Engineering Career Cluster focuses on the planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles.

### Drone (Unmanned Vehicle)

The Drone (Unmanned Vehicle) regional program of study focuses on opportunities related to operating or designing an unmanned aircraft using a ground-based controller. This program of study includes understanding and designing systems of communications between the controller and the aircraft to ensure compliance with federal aviation safety regulations.

## Drone (Unmanned Vehicle) Belton New Tech High School Course Pathway

Investigation	◆ Robotics I
Navigation	◆ Robotics II
Preparation	◆ Introduction to Unmanned Aerial Vehicles (UAV)
Application	◆ Scientific Research & Design ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Drone (Unmanned Vehicle) regional program of study fulfills the requirements of the Business & Industry endorsement.

### ALIGNED OCCUPATIONS

#### Aerospace Engineering & Operations Technicians

- ◆ Median Wage: \$48,204
- ◆ Annual Openings: 192
- ◆ 10-year Growth: 21%

#### Avionics Technicians

- ◆ Median Wage: \$72,461
- ◆ Annual Openings: 255
- ◆ 10-year Growth: 16%

### WORK-BASED LEARNING

- ◆ Internship at public service, engineering, construction, or transportation firm
- ◆ Drone operations at a work site

### EXPANDED LEARNING

- ◆ SkillsUSA participation
- ◆ Aerial drone competition participation

### INDUSTRY-BASED CERTIFICATIONS

- ◆ FAA Part 107 Remote Drone Pilot

### POSTSECONDARY LEARNING

#### Associate Degrees

- ◆ Airline/Commercial/Prof. Pilot and Flight Crew
- ◆ Manu. Engineering Technology/Technician

#### Bachelor's Degrees

- ◆ Aviation Science
- ◆ Aeronautical/Aerospace Engineering Technology

#### Master's, Doctoral, & Professional Degrees

- ◆ Aerospace, Aeronautical, and Astronautical Engineering, General

#### Stackable IBCs/Licensures

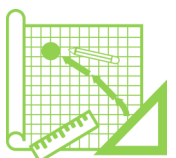
- ◆ Aerial Mapping & 3D Modeling Certification



## Drone (Unmanned Vehicle) Course Details

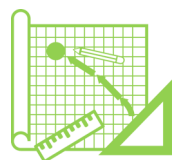
COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Robotics I* (Level 2)	10-12		13037000 27769 1 credit		BNT
Robotics II* (Level 3) (Satisfies a math requirement)	11-12	Robotics I	13037050 27779 1 credit	FAA Part 107 Remote Drone Pilot	BNT
Introduction to Unmanned Aerial Vehicles (UAV) (Level 2)	11-12	None	N1304670 27728 1 credit	FAA Part 107 Remote Drone Pilot	BNT
Scientific Research & Design* (Level 4) (Satisfies a science requirement)	12	Biology Chemistry IPC or Physics 2+ courses for 2+ credits in Engineering career cluster	13037200 27735 1 credits	FAA Part 107 Remote Drone Pilot (BNT)	BHS LBHS BNT
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement Required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS BNT

\*Course is included in additional programs of study.

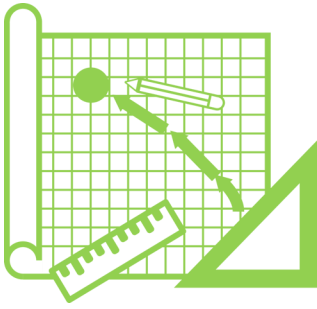


## Drone (Unmanned Vehicle) Course Descriptions

Robotics I	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	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.
Introduction to Unmanned Aerial Vehicles (UAV)	The Introduction to Unmanned Aerial Vehicles (UAV) Flight course is designed to prepare students for entry-level employment or continuing degrees in piloting UAV operations. This course is designed to instruct students in UAV flight navigation, industry laws and regulations, and safety regulations.
Scientific Research & Design	Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions. All of these components are integrated with the career and technical education emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.
Career Preparation for Program of Study	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.







# ENGINEERING

The Engineering Career Cluster focuses on the planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles.

## Engineering Foundations

The Engineering Foundations program of study focuses on opportunities associated with a wide range of skills applied in the Engineering industry. Students will design, test, and evaluate projects related to engines, machines, and structures. This program includes applying scientific, mathematical, and empirical evidence to solve problems through innovation, design, construction, operation, and maintenance of different engineering systems.

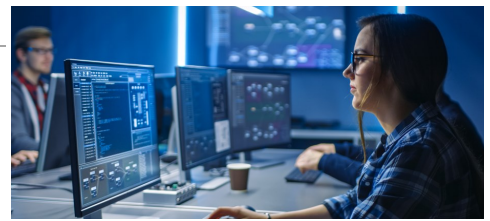
### Engineering Foundations Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Gateway I (PLTW)</li> <li>◆ Principles of Applied Engineering</li> <li>◆ Introduction to Engineering Design (PLTW)</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Engineering Science</li> <li>◆ Civil Engineering &amp; Architecture</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Aerospace Engineering (PLTW) (Sunset 2026-2027SY)</li> <li>◆ Digital Electronics</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Scientific Research &amp; Design</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Calculus AB\*
- ◆ AP Computer Science A\*
- ◆ AP Physics I\*
- ◆ AP Physics II\*



**ALIGNED ENDORSEMENT:** Successful completion of the Engineering Foundations program of study fulfills the requirements of the Business & Industry endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Civil Engineering Technologists & Technicians

- ◆ Median Wage: \$61,138
- ◆ Annual Openings: 765
- ◆ 10-year Growth: 11%

##### Mechanical Engineers

- ◆ Median Wage: \$99,937
- ◆ Annual Openings: 483
- ◆ 10-year Growth: 18%

##### Aerospace Engineers

- ◆ Median Wage: \$115,694
- ◆ Annual Openings: 1,132
- ◆ 10-year Growth: 20%

#### WORK-BASED LEARNING

- ◆ Internship at an engineering, robotics, or aerospace company
- ◆ Job shadow an engineer

#### EXPANDED LEARNING

- ◆ TSA or SkillsUSA participation
- ◆ Participate in an engineering association

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Autodesk Associate Fusion 360
- ◆ Autodesk Associate Inventor for Mechanical Design
- ◆ Autodesk Associate Revit for Architecture

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Industrial Engineering Technology

##### Associate Degrees

- ◆ Manu. Engineering Technology
- ◆ Robotics Technology/Technician

##### Bachelor's, Master's, Doctoral, & Professional Degrees

- ◆ Electrical & Electronics Engineering
- ◆ Engineering, General

##### Stackable IBCs/Licensures

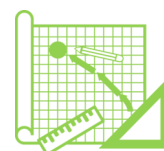
- ◆ Professional Engineer (PE License)
- ◆ Engineer in Training Cert (EIT)



## Engineering Foundations Course Details

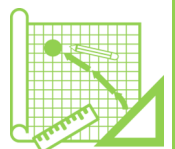
COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Gateway I (PLTW) <sup>^</sup> <sup>^</sup> Does NOT count toward POS concentrator or completer status	7	None	—		BMS LBMS NBMS SBMS
Principles of Applied Engineering* (Level 1)	7-8	None	13036200 27705 1 credit		BMS LBMS NBMS SBMS
Introduction to Engineering Design (PLTW)* (Level 1)	9-12	None	N1303742 27710 1 credit	Autodesk Associate Certified User Inventor for Mechanical Design	BHS LBHS
Engineering Science* (Level 3)  (Satisfies a science requirement)	10-12	Algebra I Biology 1+ course for 1+ credit in Engineering career cluster	13037500 27715 1 credit	Autodesk Associate Certified User Inventor for Mechanical Design	BHS LBHS
Civil Engineering & Architecture (PLTW)* (Level 3)	11-12	Recommended pre- or co- requisite: Introduction to Engineering Design	N1303747 27725 1 credit	Autodesk Associate Certified User Revit Architecture	BHS LBHS
Aerospace Engineering (PLTW)* (Level 3) (Sunset 2026-2027 SY)	11-12	Engineering Science, Civil Engineering & Architecture OR Digital Electronics	N1303745 27726 1 credit		BHS LBHS BNT
Digital Electronics* (Level 3)  (Satisfies a math requirement)	10-12	Algebra I Geometry	13037600 27727 1 credit		BHS LBHS
Scientific Research & Design* (Level 4)  (Satisfies a science requirement)	12	Biology Chemistry IPC or Physics 2+ courses for 2+ credits in Engineering career cluster	13037200 27735 1 credits		BHS LBHS BNT
Career Prep or Ext. Career Prep for POS* (Level 4)  (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Engineering Foundations Course Descriptions

Gateway I (PLTW Design & Modeling + Automation & Robotics)	Students trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics platform to design, build, and program real-world objects such as traffic lights, toll booths, and robotic arms.
Principles of Applied Engineering (PLTW Flight & Space + App Creators)	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 have an understanding of 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.
Introduction to Engineering Design (PLTW)	Project Lead the Way (PLTW) Introduction to Engineering Design (IED) is an Activity-Project-Problem-Based course designed to build on foundational engineering concepts with an emphasis on the application of modeling in the engineering design process to develop solutions. Students will work both individually and in teams with an engineering design process, applying math, science, and engineering standards to hands-on projects.
Engineering Science	Engineering Science is an engineering course designed to expose students to some of the major concepts and technologies that they will encounter in a postsecondary program of study in any engineering domain. Students will have an opportunity to investigate engineering and high-tech careers. In Engineering Science, students will employ science, technology, engineering, and mathematical concepts in the solution of real-world challenge situations. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges. Students will also learn how to document their work and communicate their solutions to their peers and members of the professional community.
Civil Engineering & Architecture (PLTW)	Civil Engineering and Architecture (CEA) is a course in the PLTW Engineering Program. In CEA students are introduced to important aspects of building and site design and development. They apply math, science, and standard engineering practices to design both residential and commercial projects and document their work using 3D architectural design software.
Aerospace Engineering (PLTW)	In Project Lead the Way (PLTW) Aerospace Engineering, students explore the fundamentals of flight in air and space as they bring the concepts to life by designing and testing components, such as an airfoil, propulsion system, and a rocket. This course prepares students for college, a career, or the military by deepening their knowledge of aerospace concepts, developing students' problem-solving skills, transportable skills (such as communication and ethical reasoning), and exposing them to a variety of careers.



## Engineering Foundations Course Descriptions

### Digital Electronics

Digital Electronics is the study of electronic circuits that are used to process and control digital signals. In contrast to analog electronics, where information is represented by a continuously varying voltage, digital signals are represented by two discrete voltages or logic levels. This distinction allows for greater signal speed and storage capabilities and has revolutionized the world of electronics. Digital electronics is the foundation of modern electronic devices such as cellular phones, digital audio players, laptop computers, digital cameras, and high-definition televisions. The primary focus of Digital Electronics is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation.

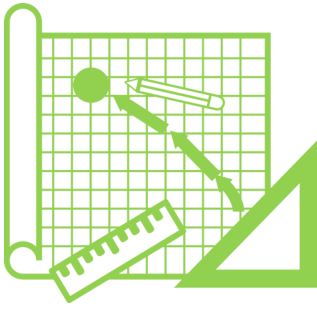
### Scientific Research & Design

Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions. All of these components are integrated with the career and technical education emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.

### Career Preparation for Program of Study

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.





# ENGINEERING

The Engineering Career Cluster focuses on the planning, designing, testing, building, and maintaining of machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles.

## Mechanical and Aerospace Engineering

The Mechanical and Aerospace Engineering program focuses on occupational and educational opportunities associated with the design, development, maintenance, and testing of engines, machines, and structures related to aircraft and spacecraft. Students will design, test, and evaluate projects related to aerodynamics, structural, and mechanical design. Students will apply scientific, mathematical, and empirical evidence to solve problems related to navigation, mechanics, robotics, propulsion, and combustion.

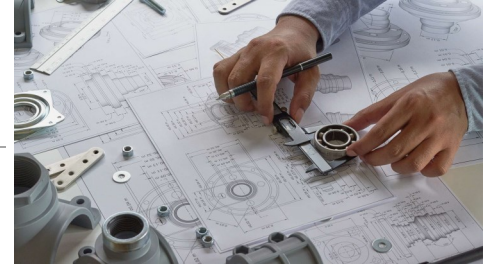
### Mechanical and Aerospace Engineering Belton New Tech High School Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Gateway I (PLTW)*</li> <li>◆ Principles of Applied Engineering</li> <li>◆ Introduction to Aerospace &amp; Aviation</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Engineering Design &amp; Presentation I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Aerospace Engineering (PLTW)</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in STEM</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Calculus AB\*
- ◆ AP Calculus BC\*
- ◆ AP Physics I\*
- ◆ AP Physics II\*
- ◆ AP Statistics\*



**ALIGNED ENDORSEMENT:** Successful completion of the Engineering Foundations program of study fulfills the requirements of the Business & Industry endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Aerospace Engineering & Operations Technicians

- ◆ Median Wage: \$48,204
- ◆ Annual Openings: 192
- ◆ 10-year Growth: 21%

##### Mechanical Engineers

- ◆ Median Wage: \$99,937
- ◆ Annual Openings: 1,755
- ◆ 10-year Growth: 18%

##### Aerospace Engineers

- ◆ Median Wage: \$115,694
- ◆ Annual Openings: 483
- ◆ 10-year Growth: 18%

#### WORK-BASED LEARNING

- ◆ Internship at an aviation, or aerospace company
- ◆ Job shadow an engineer

#### EXPANDED LEARNING

- ◆ TSA or SkillsUSA participation
- ◆ Participate in an engineering association

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Autodesk Associate Fusion 360
- ◆ Autodesk Associate AutoCAD
- ◆ Autodesk Associate Revit for Architecture

#### Stackable IBCs/Licensures

- ◆ Professional Engineer (PE License)
- ◆ Aerospace Engineering Cert.

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Mechanical Engineering Technician

##### Associate Degrees

- ◆ Mechanical Engineering
- ◆ Aeronautics/Aviation/Aerospace Science & Technology, General

##### Bachelor's, Master's, Doctoral, & Professional Degrees

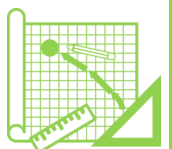
- ◆ Aeronautical/Aerospace Engineering
- ◆ Aeronautics/Aviation Science
- ◆ Electrical & Electronics Engineering



## Mechanical and Aerospace Engineering Course Details

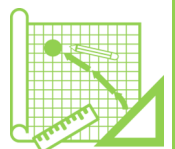
COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Gateway I (PLTW) <sup>^</sup> <sup>^</sup> Does NOT count toward POS concentrator or completer status	7	None	—		BMS LBMS NBMS SBMS
Principles of Applied Engineering* (Level 1)	7-8	None	13036200 27705 1 credit		BMS LBMS NBMS SBMS
Introduction to Aerospace & Aviation* (Level 1)	9-12	None	1304672 27724 1 credit	Autodesk Associate Certified User Inventor for Mechanical Design	BHS LBHS BNT
Engineering Design & Presentation I* (Level 3)	10-12	Algebra I Recommended: Principles of Applied Engineering	13036500 27711 1 credit		BNT
Aerospace Engineering* (PLTW)	11-12	One or more credits in a level 2 or higher Mechanical & Aerospace Engineering course	N1303745 27727 1 credit	Autodesk Associate Certified User Inventor for Mechanical Design	BNT
Practicum in STEM*	12	2+ courses for 2+ credits in Mechanical & Aerospace Engineering program of study	1st Time Taken: 13037400 47760 (2 credits)		BNT
Scientific Research & Design (Level 4) (Satisfies a science requirement)	12	Biology Chemistry IPC or Physics 2+ courses for 2+ credits in Engineering career cluster	13037200 27735 1 credit		BHS LBHS BNT
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS BNT

\*Course is included in additional programs of study.



# Mechanical & Aerospace Engineering Course Descriptions

Gateway I (PLTW Design & Modeling + Automation & Robotics)	Students trace the history, development, and influence of automation and robotics as they learn about mechanical systems, energy transfer, machine automation, and computer control systems. Students use the VEX Robotics platform to design, build, and program real-world objects such as traffic lights, toll booths, and robotic arms.
Principles of Applied Engineering (PLTW Flight & Space + App Creators)	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 have an understanding of 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.
Introduction to Aerospace & Aviation	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 Davinci'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.
Engineering Design & Presentation I	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.
Aerospace Engineering (PLTW)	In Project Lead the Way (PLTW) Aerospace Engineering, students explore the fundamentals of flight in air and space as they bring the concepts to life by designing and testing components, such as an airfoil, propulsion system, and a rocket. This course prepares students for college, a career, or the military by deepening their knowledge of aerospace concepts, developing students' problem-solving skills, transportable skills (such as communication and ethical reasoning), and exposing them to a variety of careers.
Practicum in STEM	Practicum in STEM 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.



## Mechanical & Aerospace Engineering Course Descriptions (cont.)

### Scientific Research & Design

Scientific Research and Design is a broad-based course designed to allow districts and schools considerable flexibility to develop local curriculum to supplement any program of study or coherent sequence. The course has the components of any rigorous scientific or engineering program of study from the problem identification, investigation design, data collection, data analysis, formulation, and presentation of the conclusions. All of these components are integrated with the career and technical education emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.

### Career Preparation for Program of Study

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.





## HEALTH SCIENCE

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic 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.

### Biomedical Science

The Biomedical Science program of study focuses on occupational and educational opportunities associated with the study of biology and medicine. This program of study includes researching and diagnosing diseases, pre-existing conditions, and other determinants of health. Students will also practice patient care and communication.

### Biomedical Science Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Health Science</li> <li>◆ Principles of Biomedical Science (PLTW)</li> <li>◆ Medical Terminology</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Biotechnology I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Anatomy &amp; Physiology</li> <li>◆ Medical Microbiology</li> <li>◆ Pathophysiology</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Health Science</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

These courses do not count toward Concentrator/Completer status.

- ◆ AP Biology\*
- ◆ AP Chemistry\*



**ALIGNED ENDORSEMENT:** Successful completion of the Biomedical Science program of study fulfills the requirements of the Public Services endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Medical Equipment Preparers

- ◆ Median Wage: \$38,827
- ◆ Annual Openings: 519
- ◆ 10-year Growth: 18%

##### Forensic Science Technicians

- ◆ Median Wage: \$56,971
- ◆ Annual Openings: 249
- ◆ 10-year Growth: 22%

##### Biological Technicians

- ◆ Median Wage: \$45,787
- ◆ Annual Openings: 879
- ◆ 10-year Growth: 14%

#### WORK-BASED LEARNING

- ◆ Internship with a biological or medical scientist
- ◆ Job shadow in a clinical lab

#### EXPANDED LEARNING

- ◆ HOSA participation
- ◆ Job shadow in a hospital or clinic

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Biotechnical Assistant Credentialing Exam (BACE) (TBA)

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Medical Laboratory Technician

##### Associate Degrees

- ◆ Biotechnology
- ◆ Biological Sciences

##### Bachelor's Degrees

- ◆ Biology
- ◆ Cellular & Molecular Biology

##### Master's, Doctoral and Professional Degrees

- ◆ Forensic Science & Technology
- ◆ Biomedical Sciences

##### Stackable IBCs/Licensures

- ◆ Cytotechnologist



## Biomedical Science Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Health Science* (Level 1)	7* 8-12	None	13020200 27100 1 credit		BMS, LBMS NBMS, SBMS* BHS, LBHS
Principles of Biomedical Science (PLTW) (Level 1)	8	None	N1302092 27108 1 credit		SBMS
Medical Terminology* (Level 2)	9-12	None	13020300 27102 1 credit		BHS LBHS
Biotechnology I (Level 2) (Satisfies a science requirement)	10-12	Biology Recommended pre- or co- requisite: Chemistry, Prin. of Biomedical Science or Prin. of Health Science	13036400 27708 1 credit		BHS LBHS
Anatomy & Physiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry, IPC, or Physics	13020600 27115 1 credit		BHS LBHS
Medical Microbiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit(s) from the Health Science cluster	13020700 27116 1 credit	Biotechnical Assistant Credentialing Exam (BACE) (TBA)	BHS LBHS
Pathophysiology* (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit(s) from the Health Science cluster	13020800 27125 1 credit	Biotechnical Assistant Credentialing Exam (BACE) (TBA)	BHS LBHS
Practicum in Health Science* (Level 4)	12	Anatomy & Physiology AND 1+ course for 1+ credit (level 2 or higher) in Biomedical program of study	13020500 47115 2 credits 13020510 47219 2 credits		BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits 12701141 27415 3 credits		BHS LBHS

\*Course is included in additional programs of study.



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## Biomedical Science Course Descriptions

Principles of Health Science	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 health care industry.
Principles of Biomedical Sciences (PLTW)	The Principles of Biomedical Science (PBS)- PLTW course provides an introduction to biomedical science through hands-on projects and problems. Students investigate concepts of biology and medicine as they explore health conditions including heart disease, diabetes, sickle-cell disease, hypercholesterolemia, and infectious diseases. They will determine the factors that led to the death of a fictional woman as they sequentially piece together evidence found in her medical history and her autopsy report. Students will investigate lifestyle choices and medical treatments that might have prolonged the woman's life and demonstrate how the development of disease is related to changes in human body systems. The activities, projects and problems in PBS-PLTW introduce students to human physiology, basic biology, medicine, and research processes and allows students to design experiments to solve problems. Key biological concepts, including maintenance of homeostasis in the body, metabolism, inheritance of traits, and defense against disease are embedded in the curriculum.
Medical Terminology	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.
Biotechnology I	In Biotechnology I, students will apply advanced academic knowledge and skills to the emerging fields of biotechnology such as agricultural, medical, regulatory, and forensics. Students will have the opportunity to use sophisticated laboratory equipment, perform statistical analysis, and practice quality-control techniques. Students will conduct laboratory and field investigations and make informed decisions using critical thinking, scientific problem solving, and the engineering design process. Students will study a variety of topics that include structures and functions of cells, nucleic acids, proteins, and genetics.
Anatomy & Physiology	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	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.
Pathophysiology	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.



## Biomedical Science Course Descriptions

### Practicum in Health Science

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 Prep or Ext. Career Prep for Program of Study\* (Level 4)

(Related job placement required—10 hrs/wk; 15 hrs/wk)

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.





## HEALTH SCIENCE

The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic 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.

### Diagnostic & Therapeutic Services

The Diagnostic & Therapeutic Services program of study focuses on opportunities related to diagnosing and treating acute, episodic, or chronic illness independently or as part of a healthcare team. This program of study includes exploration of patient treatment and rehabilitative programs that help build or restore daily living skills to persons with disabilities or developmental delays.

### Diagnostic & Therapeutic Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Health Science</li> <li>◆ Medical Terminology</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Disaster Response</li> <li>◆ Health Science Theory</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Anatomy &amp; Physiology</li> <li>◆ Medical Microbiology</li> <li>◆ Pathophysiology</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Health Science (Phlebotomy, CCMA, CPhT, CPCT)</li> <li>◆ Emergency Medical Technician—Basic</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Biology\*
- ◆ AP Chemistry\*



**ALIGNED ENDORSEMENT:** Successful completion of the Biomedical Science program of study fulfills the requirements of the Public Services endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Emergency Medical Technicians

- ◆ Median Wage: \$34,169
- ◆ Annual Openings: 1,590
- ◆ 10-year Growth: 19%

##### Medical Assistants

- ◆ Median Wage: \$36,821
- ◆ Annual Openings: 13,191
- ◆ 10-year Growth: 25%

##### Physician Assistant

- ◆ Median Wage: \$120,841
- ◆ Annual Openings: 1,022
- ◆ 10-year Growth: 40%

#### WORK-BASED LEARNING

- ◆ Internship at a community clinic
- ◆ Job shadow in a hospital
- ◆ EMS ride along/job shadow

#### EXPANDED LEARNING

- ◆ HOSA and/or SkillsUSA participation
- ◆ Community Emergency Response Team (CERT)

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Clinical Medical Assistant (CCMA)
- ◆ Certified EKG Technician
- ◆ Patient Care Technician (CPCT)
- ◆ EMT—Basic
- ◆ Pharmacy Technician (CPhT)
- ◆ Phlebotomy Technician
- ◆ Emergency Medical Responder

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Medical Assistant
- ◆ Firefighter Apprentice

##### Associate Degrees

- ◆ Emergency Medical Technology
- ◆ Radiologic Technology/Science

##### Bachelor's Degrees

- ◆ Emergency Medical Technology
- ◆ Fire Science

##### Master's, Doctoral and Professional Degrees

- ◆ Medicine
- ◆ Occupational Therapy

##### Stackable IBCs/Licensures

- ◆ Registered Diagnostic Medical Sonographer



## Diagnostic & Therapeutic Services Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Health Science* (Level 1)	8-12	None	13020200 27100 1 credit		BMS LBMS NBM SBMS BHS LBHS
Medical Terminology* (Level 2)	9-12	None	13020300 27102 1 credit		BHS LBHS
Disaster Response* (Level 2)	10-12	None	N1303011 27445 1 credit	Emergency Medical Responder	BHS LBHS
Health Science Theory* (Level 3)	10-12	Biology	13020400 27103 1 credit		BHS LBHS
Anatomy & Physiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry, IPC, or Physics	13020600 27115 1 credit		BHS LBHS
Medical Microbiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit(s) from the Health Science cluster	13020700 27116 1 credit		BHS LBHS
Pathophysiology* (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit from the Health Science cluster	13020800 27125 1 credit		BHS LBHS
Practicum in Health Science* (Level 4)  CCMA 47111 / 47216 CPCT 47112 / 47217 CPHT 47110 / 47218 Phleb Tech. 47115 / 47219	12	Health Science Theory Anatomy & Physiology	13020500 see codes on right (1st time taken)  13020510 see codes on right (2nd time taken) 2 credits	Certified EKG Clinical Medical Assistant Patient Care Technician Pharmacy Technician Phlebotomy Technician	BHS LBHS
Emergency Medical Technician—Basic* (Level 3) (Student is responsible for dual credit cost)		Disaster Response Anatomy & Physiology	N1303015 47104 2 credits	EMT—Basic	BHS LBHS
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS

\*Course is included in additional programs of study.



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## Diagnostic & Therapeutic Services Course Descriptions

Principles of Health Science	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 health care industry.
Medical Terminology	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.
Disaster Response	Disaster Response includes basic training of students in disaster survival and rescue skills that improve the ability of citizens to survive until responders arrive. Students will learn how to make communities safer, stronger, and better prepared to respond to the threats of terrorism, crime, public health issues, and disasters of all kinds.
Health Science Theory	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 & Physiology	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	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.
Pathophysiology	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.
Practicum in Health Science	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.
Emergency Medical Technician—Basic	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.
Career Preparation	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.







## HEALTH SCIENCE

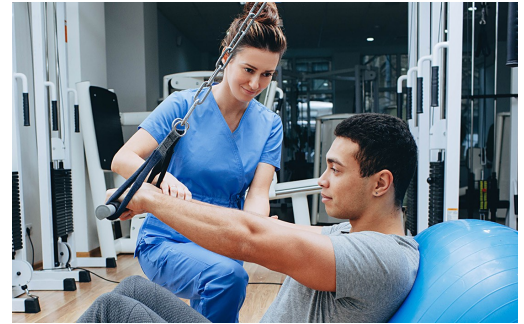
The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development. To pursue a career in the health science industry, students should learn to reason, think critically,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

## Exercise Science, Wellness, & Restoration

The Exercise Science, Wellness, & Restoration program of study focuses on opportunities associated with assisting patients with maintaining physical, mental, and emotional health. This program of study includes researching diet and exercise needed to maintain a healthy, balanced lifestyle and exploring techniques to help patients recover from injury, illness, or disease.

### Exercise Science, Wellness, & Restoration Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Health Science</li> <li>◆ Medical Terminology</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Health Science Theory</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Anatomy &amp; Physiology</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Health Science (CCMA)</li> <li>◆ Career Preparation for Program of Study</li> </ul>



#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Biology\*

**ALIGNED ENDORSEMENT:** Successful completion of the Exercise Science, Wellness & Restoration program of study fulfills the requirements of the Public Services endorsement.

#### ALIGNED OCCUPATIONS

##### Exercise Trainers & Group Fitness Instructors

- ◆ Median Wage: \$44,916
- ◆ Annual Openings: 5,022
- ◆ 10-year Growth: 41%

##### Athletic Trainers

- ◆ Median Wage: \$54,866
- ◆ Annual Openings: 1,218
- ◆ 10-year Growth: 44%

##### Physical Therapist Assistants

- ◆ Median Wage: \$74,866
- ◆ Annual Openings: 1,218
- ◆ 10-year Growth: 44%

#### WORK-BASED LEARNING

- ◆ Internship with a physical therapist, occupational therapist, or speech therapist
- ◆ Job shadow an athletic trainer

#### EXPANDED LEARNING

- ◆ HOSA or SkillsUSA participation
- ◆ Texas State Athletic Trainers Association participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Clinical Medical Assistant (CCMA)
- ◆ Emergency Medical Technician—Basic

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Medical Assistant

##### Associate Degrees

- ◆ Associates of Applied Science

##### Bachelor's Degrees

- ◆ Nutrition Sciences
- ◆ Exercise Science & Kinesiology

##### Master's, Doctoral and Professional Degrees

- ◆ Exercise Science & Kinesiology
- ◆ Physical Therapy

##### Stackable IBCs/Licensures

- ◆ Physical Therapy Technician/Aide Certification



## Exercise Science, Wellness, and Restoration

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Health Science* (Level 1)	8-12	None	13020200 27100 1 credit		BMS LBMS NBM SBMS BHS LBHS
Medical Terminology* (Level 2)	9-12	None	13020300 27102 1 credit		BHS LBHS
Health Science Theory* (Level 3)	10-12	Biology	13020400 27103 1 credit		BHS LBHS
Anatomy & Physiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry, IPC, or Physics	13020600 27115 1 credit		BHS LBHS
Practicum in Health Science* (Level 4)  CCMA 47111 / 47216	12	Health Science Theory Anatomy & Physiology	13020500 see codes on right (1st time taken)  13020510 see codes on right (2nd time taken) 2 credits	Clinical Medical Assistant	BHS LBHS
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS



## Exercise Science, Wellness, & Restoration Course Descriptions

Principles of Health Science	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 health care industry.
Medical Terminology	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	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 & Physiology	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.
Practicum in Health Science	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 Preparation	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.







## HEALTH SCIENCE

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

## Nursing Science

The Nursing Science program of study focuses on occupational and educational opportunities associated with patient care. This program of study includes the practice of caring for patients, performing routine procedures such as monitoring vital signs, developing and implementing care plans, maintaining medical records, and managing disease or pain.

### Nursing Science Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Principles of Health Science</li> <li>◆ Medical Terminology</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Health Science Theory</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Anatomy &amp; Physiology</li> <li>◆ Medical Microbiology</li> <li>◆ Pathophysiology</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Health Science (CCMA, CPCT, Phlebotomy)</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Biology\*
- ◆ AP Chemistry\*



**ALIGNED ENDORSEMENT:** Successful completion of the Nursing Science program of study fulfills the requirements of the Public Services endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Nursing Assistants

- ◆ Median Wage: \$30,856
- ◆ Annual Openings: 10,936
- ◆ 10-year Growth: 15%

##### Licensed Practical & Vocational Nurses

- ◆ Median Wage: \$50,913
- ◆ Annual Openings: 6,865
- ◆ 10-year Growth: 17%

##### Registered Nurses

- ◆ Median Wage: \$79,831
- ◆ Annual Openings: 16,207
- ◆ 10-year Growth: 17%

#### WORK-BASED LEARNING

- ◆ Internship at a community clinic, hospital, assisted living and/or long term care facility
- ◆ Job shadow in a clinic or hospital

#### EXPANDED LEARNING

- ◆ HOSA participation
- ◆ Volunteer at a community clinic, hospital, assisted living and/or long term care facility

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Clinical Medical Assistant (CCMA)
- ◆ Patient Care Technician (CPCT)
- ◆ Phlebotomy Technician

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Registered Nurse Resident

##### Associate Degrees

- ◆ Medical Assistant
- ◆ Vocational Nursing

##### Bachelor's Degrees

- ◆ Registered Nursing
- ◆ Nursing Administration

##### Master's, Doctoral and Professional Degrees

- ◆ Nursing Administration
- ◆ Nursing Science

##### Stackable IBCs/Licensures

- ◆ Certified Emergency Nurse



## Nursing Science Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Health Science* (Level 1)	8-12	None	13020200 27100 1 credit		BMS LBMS NBM SBMS BHS LBHS
Medical Terminology* (Level 2)	9-12	None	13020300 27102 1 credit		BHS LBHS
Health Science Theory* (Level 3)	10-12	Biology	13020400 27103 1 credit		BHS LBHS
Anatomy & Physiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry, IPC or Physics	13020600 27115 1 credit		BHS LBHS
Medical Microbiology* (Level 3) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit(s) from the Health Science cluster	13020700 27116 1 credit		BHS LBHS
Pathophysiology* (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry 1+ credit from the Health Science cluster	13020800 27125 1 credit		BHS LBHS
Practicum in Health Science* CCMA 47111 / 47216 CPCT 47112 / 47217 Phleb Tech. 47115 / 47219 (Level 4)	12	Health Science Theory Anatomy & Physiology	13020500 see codes on right (1st time taken)  13020510 see codes on right (2nd time taken) 2 credits	Clinical Medical Assistant Patient Care Technician Phlebotomy Technician	BHS LBHS
Career Prep or Ext. Career Prep for POS* (Level 4) (Related job placement Required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27415 3 credits		BHS LBHS

\*Course is included in additional programs of study.



# Nursing Science Course Descriptions

Principles of Health Science	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 health care industry.
Medical Terminology	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	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 & Physiology	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	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.
Pathophysiology	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.
Practicum in Health Science	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 Preparation	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.







## HOSPITALITY AND TOURISM

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

### Culinary Arts

The Culinary Arts program of study focuses on opportunities related to the planning, directing, or coordinating activities of a food and beverage organization or department. This program of study includes opportunities involving directing and participating in the preparation of food.

### Culinary Arts Course Pathway

Investigation	◆ Culinary Arts
Navigation	◆ Advanced Culinary Arts
Preparation	◆ Food Science ◆ Practicum in Culinary Arts (1st time taken)
Application	◆ Practicum in Culinary Arts (2nd time taken) ◆ Career Preparation for Program of Study



#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Chemistry\*

**ALIGNED ENDORSEMENT:** Successful completion of the Culinary Arts program of study fulfills the requirements of the Business & Industry endorsement.

#### ALIGNED OCCUPATIONS

##### Bakers

- ◆ Median Wage: \$29,466
- ◆ Annual Openings: 2,942
- ◆ 10-year Growth: 26%

##### Chefs and Head Cooks

- ◆ Median Wage: \$44,761
- ◆ Annual Openings: 950
- ◆ 10-year Growth: 37%

##### General and Operational Managers

- ◆ Median Wage: \$83,220
- ◆ Annual Openings: 25,450
- ◆ 10-year Growth: 23%

#### WORK-BASED LEARNING

- ◆ Intern at a catering company
- ◆ Job shadow a non-profit food director
- ◆ Part-time restaurant work

#### EXPANDED LEARNING

- ◆ FCCLA or SkillsUSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ ServSafe Manager

#### POSTSECONDARY LEARNING

##### Associate Degrees

- ◆ Culinary Arts
- ◆ Baking and Pastry Arts

##### Bachelor's Degrees

- ◆ Hotel/Motel Administration/Mgmt.
- ◆ Culinary Science

##### Master's, Doctoral and Professional Degrees

- ◆ Organizational Leadership
- ◆ Foodservice Systems Admin./Management

##### Stackable IBCs/Licensures

- ◆ Food Manager Licensing



## Culinary Arts Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Culinary Arts (Level 2) (Outside of class work required) (2 credit course scheduled for 1 period)	9-12	None	13022600 47525 2 credits		BHS LBHS
Advanced Culinary Arts (Level 3)	10-12	Culinary Arts	13022650 47530 2 credits	ServSafe Manager	BHS LBHS
Food Science* (Level 4) (Satisfies a science requirement)	11-12	Biology Chemistry	13001400 27590 1 credit	Food Safety & Science Certification, American Meat Science Association	BHS LBHS
Practicum in Culinary Arts (Level 4)	11-12	Advanced Culinary Arts	1st time taken 13022700 47535 2 credits 2nd time taken 13022710 47537 2 credits	ServSafe Manager	BHS LBHS
Career Prep for Program of Study* (Level 4) (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Ext. Career Prep for Program of Study* (Level 4) (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Culinary Arts Course Descriptions

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	Advanced Culinary Arts will extend content and enhance skills introduced in Culinary Arts by in-depth instruction of industry-driven standards in order to prepare students for success in higher education, certifications, and/or immediate employment.
Food Science	In Food Science, students examine the nature and properties of foods, food microbiology, and the principles of science in food production, processing, preparation, and preservation; use scientific methods to conduct laboratory and field investigations; and make informed decisions using critical thinking and scientific problem solving. This course provides students a foundation for further study that leads to occupations in food and beverage services; the health sciences; agriculture, food, and natural resources; and human services.
Practicum in 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 workplace.
Career Preparation	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.







## HUMAN SERVICES

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

### Health & Wellness

The Health & Wellness program of study focuses on opportunities associated with promoting physical, emotional, and mental health and wellness. This program of study includes assisting patients in planning for their health and wellness, responding to crisis, providing education or counseling, making referrals, and addressing barriers to accessing health and wellness services.

## Health & Wellness Course Pathway

Investigation	◆ Principles of Human Services
Navigation	◆ Child Development
Preparation	◆ Counseling & Mental Health
Application	◆ Food Science ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Health & Wellness program of study fulfills the requirements of the Public Services endorsement.

### ALIGNED OCCUPATIONS

#### Dietetic Technician

- ◆ Median Wage: \$28,919
- ◆ Annual Openings: 160
- ◆ 10-year Growth: 18%

#### Community Health Workers

- ◆ Median Wage: \$39,520
- ◆ Annual Openings: 501
- ◆ 10-year Growth: 25%

#### Dietitians & Nutritionists

- ◆ Median Wage: \$63,687
- ◆ Annual Openings: 475
- ◆ 10-year Growth: 21%

### WORK-BASED LEARNING

- ◆ Intern as a peer counselor or at a non-profit organization
- ◆ Job shadow a dietician

### EXPANDED LEARNING

- ◆ FCCLA participation

### INDUSTRY-BASED CERTIFICATIONS

- ◆ Food Safety & Science Certification

### POSTSECONDARY LEARNING

#### Apprenticeships

- ◆ Community Health Worker

#### Associate Degrees

- ◆ Social Work
- ◆ Community Health Services Counseling

#### Bachelor's Degrees

- ◆ Social Work
- ◆ Mental Health Counseling

#### Master's, Doctoral and Professional Degrees

- ◆ Nutrition Sciences
- ◆ Dietetics

#### Stackable IBCs/Licensures

- ◆ Dietician



## Health & Wellness Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Principles of Human Services* (Level 1)	9-12	None	13024200 27501 1 credit		BHS LBHS
Child Development* (Level 2)	10-12	Recommended pre- or co- requisite: Prin. of Human Services	13024700 27570 1 credit		BHS LBHS
Counseling & Mental Health* (Level 3)	11-12	Recommended pre-requisite: Prin. of Human Services or Prin. of Law, Public Safety, Corrections, and Security	13024600 27580 1 credit		BHS LBHS
Food Science* (Level 4)  (Satisfies a science requirement)	11-12	Biology Chemistry	13001400 27590 1 credits	Food Safety & Science Certification, American Meat Science Association	BHS LBHS
Career Prep for Program of Study* (Level 4)  (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Ext. Career Prep for Program of Study* (Level 4)  (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Health & Wellness Course Descriptions

Principles of Human Services	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	Child Development is a course that addresses knowledge and skills related to child growth and development from prenatal through school-age children. 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 & Mental Health	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, and the implications of their actions. Professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.
Food Science	In Food Science, students examine the nature and properties of foods, food microbiology, and the principles of science in food production, processing, preparation, and preservation; use scientific methods to conduct laboratory and field investigations; and make informed decisions using critical thinking and scientific problem solving. This course provides students a foundation for further study that leads to occupations in food and beverage services; the health sciences; agriculture, food, and natural resources; and human services.
Career Preparation	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.





# INFORMATION TECHNOLOGY

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

## Cybersecurity

The Cybersecurity program of study focuses on opportunities associated with planning, implementing, upgrading, or monitoring security measures for the protection of computer networks and information. This program of study includes responding to computer security breaches and viruses and administering network security measures.



### Cybersecurity Course Pathway

Investigation	<ul style="list-style-type: none"> <li>Fundamentals of Computer Science</li> <li>AP Computer Science Principles</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>Computer Science I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>AP Computer Science A</li> <li>Cybersecurity Capstone</li> </ul>
Application	<ul style="list-style-type: none"> <li>Practicum in Information Technology</li> <li>Career Preparation for Program of Study</li> </ul>

**Aligned Advanced Placement Courses:**

- AP Computer Science A
- AP Computer Science Principles



**ALIGNED ENDORSEMENT:** Successful completion of the Cybersecurity program of study fulfills the requirements of the Business & Industry endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Computer User Support Specialists

- Median Wage: \$51,411
- Annual Openings: 5,757
- 10-year Growth: 21%

##### Information Security Analysts

- Median Wage: \$110,268
- Annual Openings: 1,719
- 10-year Growth: 49%

##### Software Developers

- Median Wage: \$111,705
- Annual Openings: 15,324
- 10-year Growth: 36%

#### WORK-BASED LEARNING

- Internship at a bank, hospital, government office
- Interview an information security analyst to learn how they plan for, monitor, & upgrade security measures

#### EXPANDED LEARNING

- Participate in a Hackathon
- TSA or SkillsUSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- CodeHS Cybersecurity Level 1
- Oracle Certified Associate, Java SE 8 Programmer
- IT Specialist: Java
- CompTIA A+, Network +, Security+

#### POSTSECONDARY LEARNING

##### Associate Degrees

- Computer & Info. Systems Security
- Computer Programming

##### Bachelor's Degrees

- Computer Science
- Computer Software Engineering

##### Master's, Doctoral and Professional Degrees

- Computer and Info. Systems Security/Auditing/Info. Assurance
- Computer Software Engineering

##### Stackable IBCs/Licensures

- Certified Ethical Hacker (CEH)



## Cybersecurity Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Fundamentals of Computer Science* (Level 1)	9-12	None	03580140 27756 1 credit		BHS LBHS
AP Computer Science Principles* (Level 2) (Satisfies a LOTE credit)	9-12	Pre- or Co- requisite: Algebra I	A3580300 27765 1 credit		BHS LBHS
Computer Science I* (Level 2) (Satisfies a LOTE requirement)	9-12	Pre- or Co- requisite: Algebra I	03580200 27330 1 credit		BHS LBHS
AP Computer Science A* (Level 3) (Satisfies a math & LOTE requirement)	10-12	Algebra I	A3580120 (LOTE) A3580110 (MATH) 27767 (LOTE) 27766 (Math) 1 credit	Oracle Certified Associate Java SE 8 Programmer	BHS LBHS
Cybersecurity Capstone	11-12	3+ courses for 3+ credits (with level 2 or higher course) in Cybersecurity program of study (sans Career Preparation)	03580855 27768 1 credit	CodeHS Cybersecurity CompTIA Security+	BHS LBHS
Practicum in Information Technology* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13028000 47762 2 credits	CodeHS Cybersecurity Level 1 CompTIA A+, Security+, Network+ IT Specialist: Java	BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk; 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits  12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Cybersecurity Course Descriptions

### Fundamentals of Computer Science

Fundamentals of Computer Science is intended as a first course for those students just beginning the study of computer science. Students will learn about the computing tools that are used every day. Students will foster their creativity and innovation through opportunities to design, implement, and present solutions to real-world problems. Students will collaborate and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will learn computational thinking, problem-solving, and reasoning skills that are the foundation of computer science. 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, regulations, and best practices and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations and concepts.

### AP Computer Science Principles

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 to 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 internet—work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.

### Computer Science 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 computational thinking and 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, regulations, and best practices 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

AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.

### Cybersecurity Capstone

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.



## Cybersecurity Course Descriptions (cont.)

### Practicum in Information Technology

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 Preparation

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.



# INFORMATION TECHNOLOGY

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

## Programming & Software Development

The Programming & Software Development program of study focuses on occupational and educational opportunities associated with researching, designing, developing, testing, and operating systems-level software, compilers, and network distribution software for medical, industrial, military, codes, forms, and script that allow computer applications to run.



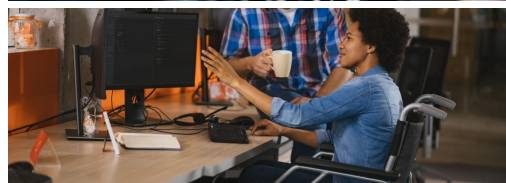
### Programming & Software Development Course Pathway

Investigation	<ul style="list-style-type: none"> <li>◆ Fundamentals of Computer Science</li> <li>◆ AP Computer Science Principles</li> </ul>
Navigation	<ul style="list-style-type: none"> <li>◆ Computer Science I</li> </ul>
Preparation	<ul style="list-style-type: none"> <li>◆ Computer Science II</li> <li>◆ AP Computer Science A</li> </ul>
Application	<ul style="list-style-type: none"> <li>◆ Practicum in Information Technology</li> <li>◆ Career Preparation for Program of Study</li> </ul>

#### Aligned Advanced Placement Courses:

\*These courses do not count toward Concentrator/Completer status.

- ◆ AP Calculus AB\*
- ◆ AP Statistics\*



**ALIGNED ENDORSEMENT:** Successful completion of the Programming & Software Development program of study fulfills the requirements of the Business & Industry endorsement. A STEM endorsement is also fulfilled with the required math and science credits.

#### ALIGNED OCCUPATIONS

##### Computer User Support Specialists

- ◆ Median Wage: \$51,411
- ◆ Annual Openings: 5,757
- ◆ 10-year Growth: 21%

##### Computer Programmers

- ◆ Median Wage: \$87,997
- ◆ Annual Openings: 1,176
- ◆ 10-year Growth: 4%

##### Software Developers

- ◆ Median Wage: \$111,705
- ◆ Annual Openings: 15,324
- ◆ 10-year Growth: 36%

#### WORK-BASED LEARNING

- ◆ Intern at an IT company
- ◆ Shadow a software developer

#### EXPANDED LEARNING

- ◆ Program and create a game
- ◆ TSA or SkillsUSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Oracle Certified Associate Java SE 8 Programmer
- ◆ CodeHS Python Level 1
- ◆ Certified Entry-Level Python Programmer (PCEP)
- ◆ CompTIA A+
- ◆ IT Specialist: Java

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Computer Programmer

##### Associate Degrees

- ◆ Computer Programming
- ◆ Web Page, Digital/Multimedia & Information Resources Design

##### Bachelor's Degrees

- ◆ Data Science
- ◆ Computer Engineering

##### Master's, Doctoral and Professional Degrees

- ◆ Management Science
- ◆ Computer Software Engineering

##### Stackable IBCs/Licensures

- ◆ AWS Certified Developer Assoc.



## Programming & Software Development Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Fundamentals of Computer Science* (Level 1)	9-12	None	03580140 27756 1 credit		BHS LBHS
Computer Science I* (Level 2) (Satisfies a LOTE requirement)	9-12	Pre- or Co- requisite: Algebra I	03580200 27330 1 credit		BHS LBHS
AP Computer Science Principles* (Level 2) (Satisfies a LOTE requirement)	9-12	Pre- or Co- requisite: Algebra I	A3580300 27765 1 credit		BHS LBHS
Computer Science II (Level 3) (Satisfies LOTE requirement)	10-12	Computer Science I	03580300 27331 1 credit	Oracle Certified Associate Java SE 8 Programmer	LBHS
AP Computer Science A* (Level 3) (Satisfies math and LOTE requirement)	10-12	Algebra I	A3580120 (LOTE) 27767 (LOTE) A3580110 (MATH) 27766 (MATH) 1 Credit	Oracle Certified Associate Java SE 8 Programmer	BHS LBHS
Practicum in Info. Technology* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13028000 47762 2 credits	CodeHS Python Level 1 Certified Entry-Level Python Programmer (PCEP) CompTIA A+ IT Specialist: Java	BHS LBHS
Career Prep or Ext. Career Prep for Program of Study* (Level 4) (Related job placement Required—10 hrs/wk; or 15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits 12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



# Programming & Software Development Course Descriptions

## Fundamentals of Computer Science

Fundamentals of Computer Science is intended as a first course for those students just beginning the study of computer science. Students will learn about the computing tools that are used every day. Students will foster their creativity and innovation through opportunities to design, implement, and present solutions to real-world problems. Students will collaborate and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will learn computational thinking, problem-solving, and reasoning skills that are the foundation of computer science. 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, regulations, and best practices and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations and concepts.

## Computer Science 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 computational thinking and 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, regulations, and best practices 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 Principles

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 to 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 internet—work, explore their potential impacts, and contribute to a computing culture that is collaborative and ethical.

## Computer Science II

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 computational thinking and 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 gain an understanding of computer science through the study of technology operations, systems, and concepts.

## AP Computer Science A

AP Computer Science A is an introductory college-level computer science course. Students cultivate their understanding of coding through analyzing, writing, and testing code as they explore concepts like modularity, variables, and control structures.



## Programming & Software Development Course Descriptions (cont.)

Practicum in Information Technology	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 Preparation	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.





## LAW & PUBLIC SERVICE

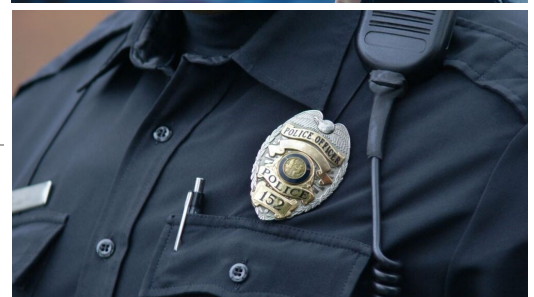
The Law & Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services. Students will examine the roles and responsibilities of police, courts, corrections, private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

### Law Enforcement

The Law Enforcement program of study focuses on occupational and educational opportunities associated with the development and enforcement of laws by various branches of law enforcement. This program of study includes understanding the appropriate and legal responses to breaches in the law according to statutory rules and regulations as well as the investigation of how and why the breaches occurred.

### Law Enforcement Course Pathway

Investigation	◆ Law Enforcement I
Navigation	◆ Law Enforcement II
Preparation	◆ Forensic Science ◆ Counseling & Mental Health
Application	◆ Criminal Investigation ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Law Enforcement program of study fulfills the requirements of the Public Services endorsement.

#### ALIGNED OCCUPATIONS

##### Police & Sheriff's Patrol Officers

- ◆ Median Wage: \$64,373
- ◆ Annual Openings: 5,424
- ◆ 10-year Growth: 13%

##### Detectives & Criminal Investigators

- ◆ Median Wage: \$82,090
- ◆ Annual Openings: 1,536
- ◆ 10-year Growth: 8%

##### Front Line Supervisors of Police & Detectives

- ◆ Median Wage: \$97,571
- ◆ Annual Openings: 5,461
- ◆ 10-year Growth: 12%

#### WORK-BASED LEARNING

- ◆ Intern in a dispatch department
- ◆ Shadow a detective

#### EXPANDED LEARNING

- ◆ Visit a police department
- ◆ SkillsUSA or TSA participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ Non-Commissioned Security Officer Level II License

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Security Specialist

##### Associate Degrees

- ◆ Criminal Justice/Police Science
- ◆ Criminalistics & Criminal Science

##### Bachelor's Degrees

- ◆ Forensic Science & Technology
- ◆ Criminalistics & Criminal Science

##### Master's, Doctoral, & Prof. Degrees

- ◆ Criminal Justice
- ◆ Law Enforcement Admin.
- ◆ Securities Services Admin./Mgmt.

##### Stackable IBCs/Licensures

- ◆ County Jailer
- ◆ Telecommunicator



## Law Enforcement Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Law Enforcement I (Level 2)	9-12	None	13029300 27425 1 credit		BHS LBHS
Law Enforcement II (Level 3)	10-12	Law Enforcement I	13029400 27430 1 credit	Non-Commissioned Security Officer Level II	BHS LBHS
Counseling & Mental Health* (Level 3)	11-12	Recommended pre- requisite: Principles of Human Services or Principles of Law, Public Safety, Corrections & Security	13024600 27580 1 credit		BHS LBHS
Forensic Science (Level 4)  (Satisfies a science requirement)	11-12	Biology Chemistry, IPC, or Physics	13029500 27415 1 credit		BHS LBHS
Criminal Investigation (Level 2)	12	Forensic Science Recommended pre- requisite: Law 1	13029550 27440 1 credit	Non-Commissioned Security Officer Level II	BHS LBHS
Career Prep for Program of Study* (Level 4)  (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS
Ext. Career Prep for Program of Study* (Level 4)  (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS

\*Course is included in additional programs of study.



## Law Enforcement Course Descriptions

Law Enforcement I	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	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.
Counseling & Mental Health	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, and the implications of their actions. Professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.
Forensic Science	Forensic Science is a survey course that introduces students to the application of science to law. Students learn terminology and procedures related to the collection and examination of physical evidence using scientific processes performed in a field or laboratory setting. Students also learn the history and the legal aspects of forensic science.
Criminal Investigations	Criminal Investigation is a course that introduces students to the profession of criminal investigations. Students will understand basic functions of criminal investigations and procedures and will learn how to investigate or follow up during investigations. Students will learn terminology and investigative procedures related to criminal investigation, crime scene processing, evidence collection, fingerprinting, and courtroom presentation. Through case studies and simulated crime scenes, students will collect and analyze evidence such as fingerprint analysis, bodily fluids, hairs, fibers, shoe and tire impressions, bite marks, drugs, tool marks, firearms and ammunition, blood spatter, digital evidence, and other types of evidence.
Career Preparation	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.







## LAW & PUBLIC SERVICE

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

### Legal Studies

The Legal Studies program of study focuses on topics such as legal research, legal writing, rules of procedures, case management, law office technology, and legal ethics. Areas of legal system studied include aspects of family law, criminal law, and contract law.

### Legal Studies

#### Belton New Tech High School Course Pathway

Investigation	◆ Court Systems & Practices
Navigation	◆ Legal Research Systems & Writing
Preparation	◆ Advanced Legal Systems & Professions ◆ Forensic Science
Application	◆ Practicum in Law (TBA) ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Law Enforcement program of study fulfills the requirements of the Public Services endorsement.

#### ALIGNED OCCUPATIONS

##### Court Reports

- ◆ Median Wage: \$51,117
- ◆ Annual Openings: 174
- ◆ 10-year Growth: 11%

##### Paralegals & Legal Assistants

- ◆ Median Wage: \$56,310
- ◆ Annual Openings: 4,046
- ◆ 10-year Growth: 23%

##### Lawyers

- ◆ Median Wage: \$134,158
- ◆ Annual Openings: 3,915
- ◆ 10-year Growth: 19%

#### WORK-BASED LEARNING

- ◆ Courthouse clerk shadowing
- ◆ Law firm intern
- ◆ Legal Administrative Assistant

#### EXPANDED LEARNING

- ◆ SkillsUSA participation
- ◆ Mock Trial participation

#### INDUSTRY-BASED CERTIFICATIONS

- ◆ General Management
- ◆ Administrative Assisting

#### POSTSECONDARY LEARNING

##### Apprenticeships

- ◆ Law Apprenticeship

##### Associate Degrees

- ◆ Paralegal Studies
- ◆ Court Reporting & Captioning

##### Bachelor's Degrees

- ◆ Legal Research
- ◆ Legal Studies

##### Master's, Doctoral, & Prof. Degrees

- ◆ Juris Doctorate
- ◆ International & Comparative Law

##### Stackable IBCs/Licensures

- ◆ Paralegal



## Legal Studies Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Court Systems & Practices (Level 2)	9-12	None	13029600 27435 1 credit		BNT
Legal Research & Writing (Level 3)	10-12	Recommend pre- or co- requisite: Court Systems & Practices	N1303014 27106 1 credit		BNT
Advanced Legal Systems & Professions (Level 3)	11-12	Court Systems & Practices	N1303016 27111 1 credit	General Management	BNT
Forensic Science* (Level 4)  (Satisfies a science requirement)	11-12	Biology Chemistry, IPC, or Physics	13029500 27415 1 credit		BHS LBHS BNT
Practicum in Law* (Level 4)	12	2+ courses for 2+ credits in aligned POS	13030100 TBA 2 credits	General Management	BNT
Career Prep for Program of Study* (Level 4)  (Related job placement Required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS BNT
Ext. Career Prep for Program of Study* (Level 4)  (Related job placement Required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS BNT

\*Course is included in additional programs of study.



## Legal Studies Course Descriptions

Court Systems & Practices	Court Systems and Practices is an overview of the federal and state court systems. The course identifies the roles of judicial officers and the trial processes from pretrial to sentencing and examines the types and rules of evidence. Emphasis is placed on constitutional laws for criminal procedures such as search and seizure, stop and frisk, and interrogation.
Legal Research & Writing	Legal Research and Writing provides an introduction to the study and practice of legal writing and research. This course is designed to introduce students to the methods and tools used to conduct legal research, develop and frame legal arguments, produce legal writings such as briefs, memorandums, and other legal documents, study U.S. Constitutional law, and prepare for appellate argument(s).
Advanced Legal Systems & Professions	Advanced Legal Skills and Professions provides students with a foundation to understand the basic mechanics of the U.S. legal system. Building on prior instruction in constitutional issues, this course provides insight into the practical application of the law, as well as civil and criminal procedure, giving students a hands-on opportunity to experience a variety of legal professions. Students will gain an understanding of the attorney-client relationship and the importance of confidentiality, discovery, pretrial motions, jury selection, opening statements, direct and cross examinations, proper use of objections and the rules of evidence, and closing arguments. By actually conducting elements of a full trial, students will also increase their ability to extemporize appropriately by thinking on their feet. Students will learn how to evaluate a set of facts and mold it into a coherent trial strategy, learning trial practice from the ground floor.
Forensic Science	Forensic Science is a survey course that introduces students to the application of science to law. Students learn terminology and procedures related to the collection and examination of physical evidence using scientific processes performed in a field or laboratory setting. Students also learn the history and the legal aspects of forensic science.
Practicum in Law	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.
Career Preparation	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.







## TRANSPORTATION, DISTRIBUTION & LOGISTICS

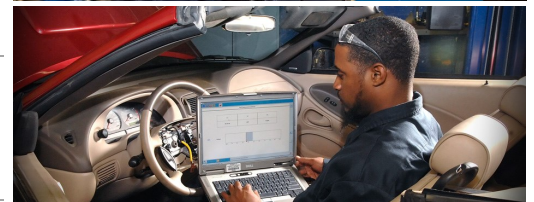
The Transportation, Distribution, and Logistics Career Cluster focuses on careers in planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water. It also includes related professional support services such as transportation infrastructure planning and management,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

### Automotive & Collision Repair

The Automotive and Collision Repair program of study focuses on opportunities associated with the servicing, repairing, and refinishing of various types of vehicles. This program of study includes diagnosing and servicing vehicles and learning about processes, technologies, and materials used in reconstructing vehicles.

## Automotive & Collision Repair Course Pathway

Investigation	◆ Automotive Basics
Navigation	◆ Automotive Technology I: Maintenance & Light Repair
Preparation	◆ Automotive Technology II: Automotive Services
Application	◆ Practicum Transportation Systems ◆ Career Preparation for Program of Study



**ALIGNED ENDORSEMENT:** Successful completion of the Automotive & Collision Repair program of study fulfills the requirements of the Business & Industry endorsement.

### ALIGNED OCCUPATIONS

#### Automotive Services Tech.

- ◆ Median Wage: \$44,809
- ◆ Annual Openings: 6,285
- ◆ 10-year Growth: 10%

#### Bus & Truck Mechanics and Diesel Engine Specialists

- ◆ Median Wage: \$50,967
- ◆ Annual Openings: 3,096
- ◆ 10-year Growth: 19%

#### First-Line Supervisors of Mechanics/Installers/Repairers

- ◆ Median Wage: \$66,535
- ◆ Annual Openings: 5,019
- ◆ 10-year Growth: 19%

### WORK-BASED LEARNING

- ◆ Work at a local auto repair shop doing auto repair and customer service duties
- ◆ Shadow an auto technician
- ◆ Intern at a rental car company

### EXPANDED LEARNING

- ◆ SkillsUSA participation
- ◆ Automotive association participation

### INDUSTRY-BASED CERTIFICATIONS

- ◆ Up to 15 ASE Entry-Level Certifications

### POSTSECONDARY LEARNING

#### Apprenticeships

- ◆ Auto Technician Apprentice

#### Associate Degrees

- ◆ Automobile/Automotive Mechanics Technology
- ◆ Autobody/Collision & Repair Technology

#### Bachelor's Degrees

- ◆ Autobody/Collision & Repair Technology
- ◆ Heavy Equipment Maintenance Technology

#### Stackable IBCs/Licensures

- ◆ Auto & Light Truck Cert (A1-A9)



## Automotive & Collision Repair Course Details

COURSE	GRADE LEVEL	PRE- and CO-REQUISITES	COURSE CODE BISD CODE COURSE CREDIT	ALIGNED IBC	CAMPUS
Automotive Basics (Level 2)	9-12	None	13039550 27656 1 credit		BHS LBHS
Automotive Technology I: Automotive Maintenance & Light Repair (Level 3)	10-12	Automotive Basics	13039600 47655 2 credits	Up to 15 ASE Entry-Level Certifications	BHS LBHS
Automotive Technology II: Automotive Services (Level 4)	11-12	Automotive I	13039700 47660 2 credits	Up to 15 ASE Entry-Level Certifications	BHS LBHS
Practicum in Transportation* Systems (Level 4)	12	Automotive II	13040450 47665 2 credits	Up to 15 ASE Entry-Level Certifications	BHS LBHS
Career Prep for Program of Study* (Level 4) (Related job placement required—10 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701121 27505 2 credits		BHS LBHS BNT
Ext. Career Prep for Program of Study* (Level 4) (Related job placement required—15 hrs/wk)	12	2+ courses for 2+ credits (with level 2 or higher course) in aligned POS	12701141 27515 3 credits		BHS LBHS BNT

\*Course is included in additional programs of study.



# Automotive & Collision Repair Course Descriptions

Automotive Basics	Automotive Basics includes knowledge of the basic automotive systems and the theory and principles of the components that make up each system and how to service these systems. Automotive Basics includes applicable safety and environmental rules and regulations. In Automotive Basics, students will gain knowledge and skills in the repair, maintenance, and servicing of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.
Automotive I: Maintenance & Light Repair	Automotive Technology I: Maintenance and Light Repair includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. This course includes applicable safety and environmental rules and regulations. In Automotive Technology I: Maintenance and Light Repair, students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.
Automotive II: Automotive Services	Automotive Technology II: Automotive Service includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology II: Automotive Service includes applicable safety and environmental rules and regulations. In this course, students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.
Practicum in Transportation Systems	Practicum in Transportation Systems 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 experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or worked based.
Career Preparation	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.



