



BHS CTE Course Guide

Career and Technical Education

2024-2025

BHS CTE COURSE GUIDE

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Architecture & Construction

Principles of Architecture

Grade Placement: 9–12 **Credit:** 1

Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, education, and career information to set and achieve realistic career and educational goals. Jobspecific training can be provided through training modules that identify career goals in trade and industry areas. Classroom studies include topics such as safety, work ethics, communication, information technology applications, systems, health, environment, leadership, teamwork, ethical and legal responsibility, employability, and career development and include skills such as problem solving, critical thinking, and reading technical drawings

Architectural Design I

Grade Placement: 10–12 **Credit:** 1 **Prerequisites:** Algebra I and English I.

In Architectural Design I, students will gain knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a post-secondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design I includes the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

Architectural Design 2

TSDS PEIMS Code: 13004700 (ARCHDSN2)

Grade Placement: 11–12

Credit: 2

Prerequisites: Architectural Design I or Advanced Interior Design and Geometry. **Recommended Prerequisites:** Principles of Architecture and Principles of Construction.

In Architectural Design II, students will gain advanced knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design II includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.



Agriculture, Food & Natural Resources

Principles of Agriculture, Food, and Natural Resources

Credit: 1

Prerequisite: None.

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

Professional Standards in Agribusiness

Credit: .5

Prerequisite: None.

Professional Standards in Agribusiness primarily focuses on leadership, communication, employer-employee relations, and problem solving as they relate to agribusiness.

Agribusiness Management and Marketing

Credit: 1

Prerequisite: None.

Agribusiness Management and Marketing is designed to provide a foundation to agribusiness management and the free enterprise system. Instruction includes the use of economic principles such as supply and demand, budgeting, record keeping, finance, risk management, business law, marketing, and careers in agribusiness.

Equine Science

Credit: .5

Prerequisite: None.

In Equine Science, students will acquire knowledge and skills

Livestock Production

Credit: 1

Prerequisite: None.

In Livestock Production, students will acquire knowledge and skills related to livestock and the livestock production industry. Livestock Production may address topics related to beef cattle, dairy cattle, swine, sheep, goats, and poultry.

Small Animal Management

Credit: .5

Prerequisite: None.

In Small Animal Management, students will acquire knowledge and skills related to small animals and the small animal management industry. Small Animal Management may address topics related to small mammals such as dogs and cats, amphibians, reptiles, and birds.

Veterinary Medical Applications

Credit: 1

Prerequisites: Equine Science, Small Animal Management, or Livestock Production. Veterinary Medical Applications covers topics relating to veterinary practices, including practices for large and small animal species.

Advanced Animal Science

Credit: 1

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

Recommended Prerequisite: Veterinary Medical Applications. Advanced Animal Science examines the interrelatedness of human, scientific, and technological dimensions of livestock production. Instruction is designed to allow for the application of scientific and technological aspects of animal science through field and laboratory experiences.

Note: This course satisfies a science credit requirement for students on the Foundation High School Program.

Floral Design

Credit: 1

Prerequisite: None.

Floral Design is designed to develop students' ability to identify and demonstrate the principles and techniques related to floral design as well as develop an understanding of the management of floral enterprises. Through the analysis of artistic floral styles and historical periods, students will develop respect for the traditions and contributions of diverse cultures. Students will respond to and analyze floral designs, thus contributing to the development of lifelong skills of making informed judgments and evaluations. **Note:** This course satisfies a fine arts credit requirement for students on the Foundation High School Program.

Horticulture Science

Credit: 1

Prerequisite: None.

Horticultural Science is designed to develop an understanding of common horticultural management practices as they relate to food and ornamental plant production.

Advanced Floral Design

Credit: 1

Prerequisite: Floral Design.

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

Agricultural Mechanics and Metal Technologies

Credit: 1

Prerequisite: None.

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

Agricultural Structures Design and Fabrication

Credit: 1

Prerequisite: None.

Recommended Prerequisites: Agricultural Mechanics and Metal Technologies.

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

Agricultural Equipment Design and Fabrication

Credit: 1

Prerequisite: None.

Recommended Prerequisites: Agricultural Mechanics and Metal Technologies.

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

Greenhouse Operation and Production

Grade Placement: 10–12 **Credit:** 1

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.

Practicum in Agriculture, Food, and Natural Resources

Grade Placement: 11–12

Credit: 2 **Prerequisite:** None.

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

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



Principles of Arts, Audio/Video Technology, and Communications

Credits: 1

Prerequisite: None.

The goal of this course is that the student understands arts, audio/video technology, and communications systems. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in this cluster and the knowledge, skills, and educational requirements for those opportunities.

Audio/Video Production I/Audio/Video Production I Lab

Credits: 2

Prerequisite: None.

Recommended Prerequisite: Principles of Arts, Audio/Video Technology, and Communications or Digital and Interactive Media.

Corequisite: Audio/Video Production I.

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. Requiring a lab requisite for the course affords necessary time devoted specifically to the production and post-production process.

Districts are encouraged to offer this lab in a consecutive block with Audio/Video Production I to allow students sufficient time to master the content of both courses.

Audio/Video Production II/Audio/Video Production II Lab

Credits: 2 **Prerequisite:** Audio/Video Production I.

Corequisite: Audio/Video Production II.

Building upon the concepts taught in Audio/Video Production, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on pre-production, production, and post- production products. Through diverse forms of storytelling and production, students will exercise and develop creativity, intellectual curiosity, and critical-thinking, problem- solving, and collaborative skills. This course may be implemented in an audio format or a format with both audio and video. Requiring a lab requisite for the course affords necessary time devoted specifically to the production and post-production process.

Video Game Programming

Grade Placement: 10–12 **Credits:** 1

Video Game Programming expands on the foundation created in Video Game Design through programming languages such as: C# programming, XNA game studio, Java, and Android App. In this course, students will investigate the inner workings of a fully functional role-playing game (RPG) by customizing playable characters, items, maps, and chests and eventually applying customizations by altering and enhancing the core game code.

Video Game Design

Credits: 1 Prerequisite: None.

Recommended Prerequisite: Principles of Art, Audio/Video Technology, and Communications.

Video Game Design will allow students to explore one of the largest industries in the global marketplace and the new emerging careers it provides in the field of technology. Students will learn gaming, computerized gaming, evolution of gaming, artistic aspects of perspective, design, animation, technical concepts of collision theory, and programming logic. Students will participate in a simulation of a real video game design team while developing technical proficiency in constructing an original game design.

Digital Media

Credit: 1 Prerequisite: None.

In Digital Media, students will analyze and assess current and emerging technologies, while designing and creating multimedia projects that address customer needs and resolve a problem. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology- driven society.

Students will enhance reading, writing, computing, communication, and critical thinking and apply them to the IT environment.

Fashion Design I

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Credits: 1 Prerequisites: None.

Recommended Prerequisite: Principles of Arts, Audio/Video Technology, and Communications.

Recommended Corequisite: Fashion Design I Lab.

Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

Fashion Design II

Grade Placement: 11–12

Credits: 1 Prerequisite: Fashion Design I.

Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

Practicum in Audio/Video Production

Grade Placement: 11–12

Credits: 2 Prerequisites: Audio/Video Production II and Audio/Video Production II Lab.

Building upon the concepts taught in Audio/Video Production II and its corequisite Audio/Video Production II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio/Video Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre- production, production, and post-production audio and video products in a professional environment. This course may be implemented in an advanced audio/video or audio format.



Business Management & Administration

Business Information Management I

Credits: 1 **Prerequisite:** None.

In Business Information Management I, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce and postsecondary education. Students apply technical skills to address business applications of emerging technologies, create word- processing documents, develop a spreadsheet, formulate a database, and make an electronic presentation using appropriate software.

Business Management

Credits: 1 **Prerequisite:** None.

Business Management is designed to familiarize students with the concepts related to business management as well as the functions of management, including planning, organizing, staffing, leading, and controlling. Students will also demonstrate interpersonal and project-management skills.

Business Law

Credits: 1 **Prerequisite:** None

Business Law is designed for students to analyze various aspects of the legal environment, including ethics, the judicial system, contracts, personal property, sales, negotiable instruments, agency and employment, business organization, risk management, and real property.

Financial Mathematics

Credits: 1 **Prerequisite:** Algebra I

Financial Mathematics is a course about personal money management. Students will apply critical thinking skills to analyze personal financial decisions based on current and projected economic factors. Note: This course satisfies a math credit requirement for students on the Foundation High School Program.

Practicum in Business Management

Grade Placement: 11–12

Credits: 2 **Prerequisite:** None.

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.



Health Science

Principles of Health Science

Credit: 1

Prerequisite: None.

The Principles of Health Science course is designed to provide an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry.

Medical Terminology

Credit: 1 Prerequisite: None.

The Medical Terminology course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, singular and plural forms, and medical abbreviations. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology.

Health Science Theory

Credit: 1 Prerequisites: Biology.

Recommended Corequisite: Health Science Clinical.

The Health Science Theory course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will employ hands-on experiences for continued knowledge and skill development.

Health Science Theory/Health Science Clinical

Credit: 2 Prerequisites: Biology.

The Health Science Clinical 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. Districts are encouraged to offer this course in a consecutive block with Health Science Theory to allow students sufficient time to master the content of both courses.

Practicum in Health Science

Credit: 2

Prerequisites: Health Science Theory and Biology.

The Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

Pharmacology

Credit: 1

Prerequisites: Biology and Chemistry.

Recommended Prerequisites: A course from the Health and Science Career Cluster. The Pharmacology course is designed to study how natural and synthetic chemical agents such as drugs affect biological systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. It is an ever-changing, growing body of information that continually demands greater amounts of time and education from health care workers.

Mathematics for Medical Professionals

Credit: 1

Prerequisites: Geometry and Algebra II.

The Mathematics for Medical Professionals course is designed to serve as the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on fluency and solid understanding in medical mathematics, students will extend and apply mathematical skills necessary for health science professions. Course content consists primarily of high school level mathematics concepts and their applications to health science professions.

Note: This course satisfies a math credit requirement for students on the Foundation High School Program.

Anatomy and Physiology

Credit: 1

Prerequisite: Biology and a second science credit.

Recommended Prerequisite: A course from the Health and Science Career Cluster.

The Anatomy and Physiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology will study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.

Note: This course satisfies a science credit requirement for students on the Foundation High School Program.



Introduction to Culinary Arts

Credit: 1 **Prerequisite:** None.

Introduction to Culinary Arts will emphasize the principles of planning, organizing, staffing, directing, and controlling the management of a variety of food service operations. The course will provide insight into the operation of a well-run restaurant. Introduction to Culinary Arts will provide insight into food production skills, various levels of industry management, and hospitality skills. This is an entry level course for students interested in pursuing a career in the food service industry. This course is offered as a classroom and laboratory-based course.

Culinary Arts

Credit: 2 **Prerequisite:** None.

Recommended Prerequisites: Introduction to Culinary Arts. Culinary Arts begins with the fundamentals and principles of the art of cooking and the science of baking and includes management and production skills and techniques. Students can pursue a national sanitation certification or other appropriate industry certifications. This course is offered as a laboratory-based course.

Advanced Culinary Arts

Credit: 2 **Prerequisite:** Culinary Arts.

Advanced Culinary Arts will extend content and enhance skills introduced in Culinary Arts by in-depth instruction of industry-driven standards to prepare students for success in higher education, certifications, and/or immediate employment.

Food Science

Credit: 1 **Prerequisites:** Three units of science, including Chemistry and Biology.

In Food Science students conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Food Science is the study of the nature of foods, the causes of deterioration in food products, the principles underlying food processing, and the improvement of foods for the consuming public.

Note: This course satisfies a science credit for students on the Foundation High School Program.

Practicum in Culinary Arts

Grade Placement: 11–12 **Credit:** 2

Prerequisite: Culinary Arts.

Practicum in Culinary Arts is a unique practicum that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Practicum in Culinary Arts integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing culinary art based workplace.



**Law,
Public Safety,
Corrections
& Security**

Forensic Science

Credit: 1

Prerequisites: Biology and Chemistry.

Recommended Prerequisite or Corequisite: Any Law, Public Safety, Corrections, and Security Career Cluster course.

Forensic Science is a course that introduces students to the application of science to connect a violation of law to a specific criminal, criminal act, or behavior and victim. Students will learn terminology and procedures related to the search and examination of physical evidence in criminal cases as they are performed in a typical crime laboratory. Using scientific methods, students will collect and analyze evidence such as fingerprints, bodily fluids, hairs, fibers, paint, glass, and cartridge cases. Students will also learn the history and the legal aspects as they relate to each discipline of forensic science and understand that scientific methods of investigation can be experimental, descriptive, or comparative.

Note: This course satisfies a science credit requirement for students on the Foundation High School Program.



Principles of Applied Engineering

Credit: 1 Prerequisite: None.

Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions.

Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.

Manufacturing Engineering Technology I

Grade Placement: 10–12 Credit: 1

In Manufacturing Engineering Technology I, students will gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how those knowledge and skills are applied to manufacturing. Students will prepare for success in the global economy. The study of manufacturing engineering will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in a manufacturing setting.

Engineering Design and Presentation I

Grade Placement: 10–12 Credit: 1 Prerequisite: Algebra I. Recommended Prerequisite: Prin. of Applied Engineering.

Engineering Design and Presentation I is a continuation of knowledge and skills learned in Principles of Applied Engineering. Students enrolled in this course will demonstrate knowledge and skills of the design process as it applies to engineering fields using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students will use a variety of computer hardware and software applications to complete assignments and projects. Through implementation of the design process, students will transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and what is required to gain and maintain employment in these areas.

Engineering Design and Problem Solving

Grade Placement: 11–12 Credit: 1 Prerequisites: Algebra I and Geometry. Recommended Prerequisites: two S.T.E.M. Career Cluster credits.

The Engineering Design and Problem-Solving course is the creative process of solving problems by identifying needs and then devising solutions. The solution may be a product, technique, structure, or process depending on the problem. Science aims to understand the natural world, while engineering seeks to shape this world to meet human needs and wants. Engineering design takes into consideration limiting factors or "design under constraint."

