

Systems Courses

Production Systems (1 unit)

This course explores the systems and tools used to fabricate products that we use. Students will be involved in the planning, financing construction and marketing of custom and mass-produced wood products. Students will learn the safe use of hand, power and machine tools needed to produce wood products.



Transportation Systems (1/2 unit)

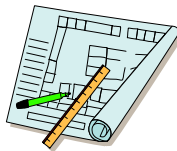
This course introduces students to the systems needed to move people and products on land, water and in the air. Students will build products and/or complete activities in vehicle design, and construction, engine systems, maintenance, purchasing and troubleshooting. Popular projects include CO2 cars, shovel racers, hovercrafts, rockets, planes, and boats.



Foundation Course

Design & Drawing for Production (1 unit)*

DDP is a hands-on design and problem solving course that teaches technical drawing as a language for communication. Students learn and apply technical drawing and print reading skills to sketch, design, draw, build, test, and evaluate scale models of structures, packaging, and mechanical devices. Design activities include egg-drop boxes, mousetrap powered vehicles, motorized magnetic levitation vehicles and toys.



*DDP can be used as a (1) unit art elective for high school graduation requirements.

TECHNOLOGY EDUCATION for a sequence or just for fun!

5 Unit Sequence Requirements*

1 Unit Foundation Courses

1/2 Unit Systems Course

1/2 Unit Career and Financial
Management**

3 Units Technology Electives***

System Courses:

Production Systems

Transportation Systems

Foundation Course:

Design and Drawing for Production

Technology Electives include:

Architectural Drawing

Computer Aided Design

Digital Media

Electricity/Electronics

Electronic Communication

Forest Products

Principles of Engineering

Residential Construction

Small Gas Engines

Welding

World of Technology

* A 5 unit technology sequence can replace the 3 unit language requirement for a NYS advanced Regents Diploma.

** CFE is offered by Business Education and replaces the course previously known as Introduction to Occupations.

*** Computer Applications is considered to be a 1/2 unit technology elective.

TECHNOLOGY EDUCATION

HIGH SCHOOL PATHWAYS

Are you unsure of a career path?
Do you like to learn by doing?
Do you want to learn skills that will be useful throughout your lifetime?

Technology education courses will help you explore various career options and provide you with the knowledge and skills you need to be successful in today's changing workplace.

Take advantage of what technology education courses have to offer you!

**Build Your Future -
Take Technology Education**

Technology Electives

Architectural Drawing (1 unit)

In architectural class students learn about the history of architectural and the design elements that influence American buildings with a concentration on residential structures. Students design a variety of homes based on the principles of good design, current trends and building codes, and construction standards. Using a professional design program, students develop detailed floor plans, electrical plans and elevations. Other topics include alternative building styles, design for individuals with physical challenges, and “green” or environmentally friendly building techniques. Students will complete a career unit to identify and explore career options related to construction, architecture, civil engineering, and other related fields.



Computer Aided Design (1/2 and 1 unit)

Prerequisite– DDP

CAD students obtain the computer skills needed to create virtual 3-D models of new and existing products. Ultimately, they will make improvements to the designs, and maintain a digital design portfolio. They will research a variety of product patents and manufacturing processes to become familiar with the world of product development and manufacturing. Students will also complete a career unit to identify and explore career options related to product design, marketing, and engineering related fields.

Digital Media (1/2 unit)

Prerequisite: Photoshop is suggested

Digital Media focuses on the techniques required to produce professional quality digital photographs, videos, and TV news broadcasts. In this class, students will experience every stage of video production, from planning and writing through shooting, editing and output. As part of the AV Tech TV team, students will create commercials, sitcoms, documentaries and more for broadcast on the web.

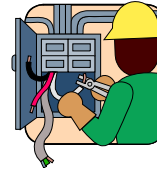
Electronic Communication (1/2 unit)

Prerequisite: Electricity/Electronics

This course introduces students to the devices and systems used to send, receive, and process signals by electrical or electronic means. Major areas explored include signal transmission (radio, television, etc.) reception, audio devices, video devices, and telecommunications. Student activities include the building and testing of electronic communication devices.

Electricity/Electronics (1/2 unit)

This course introduces students to the basic line voltage systems needed to produce and deliver electricity needed for residential structures. Areas that will be explored include electrical theory, producing AC/DC power, reading electrical plans, service entrance systems, household circuits and services, tools and meters, troubleshooting and testing. Students will learn to use the tools and techniques required to wire circuits in homes. The electronic portion of this course will introduce the student to the components of simple electronics in use today. Students will complete activity kits to demonstrate circuits such as flashlights, buzzers, chimes, intercoms and more.



Forest Products (1/2 or 1 unit)

Prerequisite: Production systems

This course introduces students to more advanced cabinet techniques and machine set up and use. Activities include the design and construction of larger more complex wood products such as stereo cabinets and entertainment centers.



Principles of Engineering (1/2 and 1 unit)

Prerequisite- DDP and CAD

POE is a hands-on pre-engineering course where students complete a set of case studies that will convey the concepts, principles, skills and techniques in engineering and related fields. Case studies include topics such as ergonomics, manufacturing, nanotechnology, biotechnology, communication, and construction. Students will research, develop a solution, create a CAD drawing, build a 3-D model, test the model, and present the results.

Residential Construction (1/2 or 1 unit)

This basic carpentry course introduces students to the systems needed to build residential buildings. Topics include blueprint reading, building layout, foundations, materials, and building utilities. Students will plan and order materials, and learn the safe use hand and power tools to construct small buildings such as sheds, animal shelters and gazebos.

Small Gas Engines (1/2 unit)

This course is an introduction to the internal combustion engine and basic mechanical systems used on most outdoor power equipment today. Students will learn the theory of operation, reconditioning, troubleshooting, tune-up, maintenance procedures and tools needed to service and maintain engines. Students will be able to perform activities on shop engines as well as engines from home.

Welding (1/2 unit)

This course is an introduction to the basic welding processes in use today. Students will complete activities to develop skills in the following areas: arc welding, gas welding and cutting, brazing, soldering, and mig welding. Students will perform actual welds and apply skills in constructing projects.



World of Technology * (1 unit)

In this class students become engaged in critical thinking as they develop solutions to real world problems. Student will learn and apply concepts of math and science to complement the engineering design and problem solving process. Design activities include Squeaky Clean, Easy Pour, Water Works, Drying by Design, Blinking in the Dark, Liquid Crystals, It's a Small World, and Robotic Arm.

*NY State has approved the use of World of Technology as a third unit of math or science credit for high school graduation.