

TECHNOLOGY

NYS GRADUATION REQUIREMENT: NYS requires all students to complete one unit in Art and/or Music. **Design and Drawing for Production (DDP)** fulfills this requirement.

Many of these courses are offered on a rotating basis and according to student demand. They may not be available every year.

AEROSPACE (9145)

This is an introduction to the growing field of aerospace activities. Topics include: Historical Evolution of Aerospace, Fundamentals of Flight, Navigation, Communication, Meteorology, Flight Physiology, Propulsion Systems, Space Technology, and Aerospace Careers and Occupations. This course also includes activities and competitions that involve problem solving and modeling.

Prerequisite: None
Credit: ½ unit (20 weeks)

ARCHITECTURAL DRAWING (9147)

A study of design and drafting related to building construction. Topics include: Culture and History, Tools and Techniques, Lettering and Dimensioning, Preparation of Site, Floor, Elevation, Section and Perspective Drawings. This course satisfies ½ unit of the Art/Music graduation requirement for students pursuing any Occupational Education sequence.

Prerequisite: None
Credit: ½ unit (20 weeks)
Articulation agreement for college credit with NCCC course DRF-173
(both Architectural Drawing and Advanced CAD-Animation required)

CAM/ROBOTICS 1 (NCCC) (9143)

This course develops a base of knowledge relative to the manufacturing industry's robots and their uses. Modules in this course will concentrate on both product and production engineering. Conventional and computer aided manufacturing processes are explored. Hands-on activities in the development, production and evaluation of robotic devices will emphasize a team approach to manufacturing. Students will use and be able to describe the functional apparatus related to computer aided manufacturing and learn how a program controls/directs a robot to perform a task.

Prerequisite: 1 credit in Technology or permission from instructor
Credit: 1 unit (40 weeks)
Articulation agreement for college credit with NCCC course TEC-250

DESIGN AND DRAWING FOR PRODUCTION (NCCC) (9150)

NYS requires all students to complete one unit in Art/Music. DDP fulfills this requirement.

This is an introductory course in the area of drafting. It is an extremely beneficial course for any student seeking a Technology Education sequence or interested in a technical or engineering field. Topics presented will include Sketching, Problem Solving, Creativity, Design, Tools, Equipment and Materials, Lettering, Isometric Drawing, Orthographic Drawing, Dimensioning, and Careers. The drawing techniques taught are similar to those used in industry for representing the size and shape of an object to be manufactured. CAD software and technical drawing tools will be used. This course also includes activities and competitions that involve problem solving techniques.

Prerequisite: None
Credit: 1 unit
Articulation Agreement for college credit with NCCC course MET-110

ADVANCED CAD – ANIMATION (NCCC) (9152)

This computer-based course is offered to students who have demonstrated an interest and above average performance with CAD (Computer Aided Drawing). It is designed to give students an introduction to the many areas of the 3D-Animation world: modeling, animation, dynamics, effects, lighting, texturing, etc. Students will enhance and develop their drawing and design skills through a series of problem solving activities, utilizing CAD and animation software in the design process.

Prerequisite: Design and Drawing for Production OR Architectural Drawing
Credit: ½ unit (20 weeks)
Articulation agreement for college credit with NCCC course DRF-173
(both Architectural Drawing and Advanced CAD-Animation required)

PRINCIPLES OF ENGINEERING (9155)

This course provides students an introduction to the types of problem-solving situations commonly faced by engineers and technicians. The hands-on and laboratory based course will introduce students to concepts of engineering. The application of these concepts will be focused on solving problems contained in "real world" case studies. The major engineering concepts to be explored are: modeling, systems, optimization, technology, society interaction, design and ethics. Activities and competitions involving problem solving and modeling will be included.

Prerequisite: 11th or 12th course requiring prior successful completion of Design and Drawing for Production
Credit: 1 unit

PRODUCTION SYSTEMS (9160)

This course provides a study of two major industries: manufacturing and construction. The student will be introduced to the efficient use of tools, techniques, resources, and production systems used to produce goods and structures. Students will learn about industry as an economic institution to organize and use resources to produce goods, services and structures.

Production Systems is about materials, their properties, and their applications. Production processes include casting, molding, forming, separating, conditioning, assembling, and finishing. Also, the course explains how companies are organized to manage, produce and sell products. Information is provided on how real estate is bought, how a site is prepared, and how a structure is built.

Prerequisite: None
Credit: ½ unit (20 weeks)

ADVANCED PLACEMENT COMPUTER SCIENCE PRINCIPLES (3700)

(AP) Computer Science Principles introduces students to the central ideas of computer science, instilling the ideas and practices of computational thinking and inviting students to understand how computing changes the world. The rigorous course promotes deep learning of computational content, develops computational thinking skills, and engages students in the creative aspects of the field.

Students who take this course will develop a range of skills vital to success in subsequent college courses, such as using computational tools to analyze and study data and working with large data sets to analyze, visualize, and draw conclusions from trends. They will also develop effective communication and collaboration skills, working individually and collaboratively to solve problems, and discussing and writing about the importance of these problems and the impacts to their community, society, and the world.

The (AP) Computer Science Principles course is designed to be equivalent to a first-semester introductory college computing course. Students should expect a large workload for this course, as for any other AP course. We recommend this course only to students who have demonstrated a good work ethic in their other coursework.

Final Exam: AP exam in May is Required. Fee approximately \$96 – financial aid is available to those that qualify.
Credit: 1 unit of math credit
Prerequisite: Successful completion of CC Geometry, CC Geometry Honors, CC Algebra 2 or CC Algebra 2 Honors

INDEPENDENT STUDY

A student may elect to take an independent study as a capstone course to complete a 5-unit sequence in technology or to pursue a course of study not offered as a regular class. An Independent Study Contract must be approved by the principal.

Prerequisite: 3 or more Technology credits and permission from the Instructor and Administration approval
Credit: ½ unit (20 weeks)