

TECHNOLOGY EDUCATION

Technology education is an action-based instructional program concerned with problem solving through application of technical means. It provides a variety of opportunities for discovering and exploring areas of interest in technological processes. Classes will provide opportunities for improved understanding of the impact of applied technology on society and may provide a foundation for a vocation. **All courses provide a vocational orientation.**

Students in all laboratory courses are required to wear appropriate safety glasses and additional safety equipment required for specific processes. All classes are available for male and female students.

Students are eligible to register for vocational/technical education programs following the successful completion of pre-requisite courses as determined by a passing final grade of D or better.

8401 DRAFTING AND DESIGN FUNDAMENTALS **1 credit**

Drafting and Design is an application of various areas of visual communication, including orthographic and pictorial drawing, tool and fixture design, pattern development, detail drawing, technical sketching, and AUTO-CAD a computer-aided drafting and design program. Students will complete a representative example of a variety of drawing processes and will be responsible for reading and applying technical materials.

8402 ARCHITECTURAL DRAFTING AND DESIGN **1 credit**

Architectural Drafting and Design provides an understanding of building practices used in residential construction. Activities include the development of preliminary sketches, floor plans, elevations, details, and necessary specifications for a single-family residence. A study of building codes and their application, architectural design, relationship of architecture and environment, financing requirements for construction and amortization, computer aided drafting and design, and exploration of careers related to architecture supplement these activities. Students will be responsible for reading and understanding some technical material.

8403 ADVANCED DRAWING/CADD **1 credit**

This course builds on principles developed in Drafting and Design, with an emphasis on pictorial assembly, exploded assembly, perspective, axonometric and computer-aided drafting and design. Students will complete detailed graphic presentations for various items.

Prerequisite: Drafting and Design Fundamentals

8404 ADVANCED MECHANICAL DRAWING 3 1 credit

This course is of independent drawing & design focused on AUTO-CAD. Students will have an opportunity to design and draw pictorial, exploded, perspective and axonometric assemblies. Students will use skills developed from Mechanical Drawing I and II.

Prerequisite: Advanced Drawing/CADD

8405 ADVANCED ARCHITECTURAL DRAWING 1 credit

This course builds on the principles developed in Architectural Drafting and Design. The main emphasis of the course centers on presentation drawings and models used to help the architect explain his ideas to the client. A study of perspective drawing, shading, architectural rendering, and the construction of a model will be made for a family residence or commercial building.

Prerequisite: Architectural Drafting and Design

8701 GRAPHIC ARTS 1 1/2 credit

This course is designed to provide an introduction to graphic designing, layout and printing through photo-offset, letterpress and silk screen fundamentals. This will be accomplished through classroom discussion of textbook readings as well as practical experience gained through the production of individual graphics projects (examples: business cards, stationery, greeting cards, booklets, school newspaper.) This practical experience will include the use of computers to develop original copy to be photographed and printed.

8702 GRAPHIC ARTS 2 (PRINTING) 1/2 credit

This course is designed to be an introduction to production processes used in the graphic arts industry. Experiences will include advanced computer composition and page layout, multi-color room techniques, half tones (printing photographs), and complete press set up. Production runs will be an integral part of course content.

Prerequisite: Graphic Arts 1

8703 GRAPHIC ARTS 3

1/2 credit

This course is a continuation of Graphic Arts with an emphasis on production. Students will have an opportunity to further develop and advance their individual graphic arts skills by participating in school-related production printing. Through their work on various publications and projects, students will cover a variety of job-oriented skills to be used in the printing industry.

Prerequisite: Graphic Arts 2

8706 PHOTOGRAPHY 1

1/2 credit

This course has been developed in order to provide high school students with the fundamentals of black and white photography. Camera operation, film processing, projection printing, and visual thinking will be studied.

Recommended: Students have a 35mm camera.

8707 PHOTOGRAPHY 2

1/2 credit

This course will provide students with advanced techniques in black and white photography, plus camera operation, film processing, projection printing, and visual thinking.

Prerequisite: Successful completion of Photography 1

8708 PHOTOGRAPHY 3

1/2 credit

This course has been designed to expand the student's working knowledge of film developing and projection printing. Advanced 35mm camera techniques, lighting and portraiture will be studied in depth. Each student at the conclusion of the course will develop a presentation portfolio.

Prerequisite: Successful completion of Photography 2

8709 PHOTOGRAPHY 4

1/2 credit

This course is a continuation of Photography 3, but with emphasis on portfolio preparation. Students, upon approval of instructor, will be working mostly independently or they can volunteer as aides in Photography 1 or Photography 2.

Digitized camera operation, scanning and Adobe PhotoShop will be available to students.

Prerequisite: Successful completion of Photography 3

8801 ELECTRONICS 1/ COMMUNICATIONS 1 1 credit

This is a lab course which introduces the student to the principles of electronics. The student will learn how to solder, read and draw schematics, use a digital multimeter, and use the concepts of magnetism, reactance, electrical laws, and semiconductor theory to build understanding. There is extensive use of technical material. A strong math background is recommended.

8802 ELECTRONICS 2/ COMMUNICATIONS 2 1 credit

This is a lab course and a continuation of the principles learned in the first year course. In this course the student will build a complex sound generator kit and will study the principles of an integrated circuit, including a study of base two and logic gates. A strong math background is recommended.

Prerequisite: Communications 1

8803 ELECTRONICS 3/ COMMUNICATIONS 3 1 credit

This lab course is a continuation of the second year course. A roulette wheel kit is constructed with a 555 timing chip as the basis of the operation. Major units studied are Electrical Energy Laws, Power Laws, Semiconductor Theory, Power Supplies and Amplifiers. An in-depth section on bread boarding is explored with concentration on numerical control. A strong math background is recommended.

Prerequisite: Communications 2

8804 ELECTRONICS 4/ COMMUNICATIONS 4 1 credit

This course is a continuation of principles and their applications learned in Electronics 3. Construction of a complex robot kit is the basis for the course, which introduces the study of robotics and computers. Circuit design and circuit analyses are explored through robotics. A unit on automation is developed through advanced bread boarding technique. A strong math background is recommended.

Prerequisite: Communications 3

8901 SMALL ENGINE REPAIR 1/2 credit

The focus of this course is to understand repair and servicing of small internal combustion engines used for lawn mowers, chain saws, snow blowers, and similar machines. Course activities include problem diagnosis, repair or replacement of defective components, lubrication and adjustment of engines to obtain maximum efficiency, maintenance of emission control systems where applicable, and performance testing. Additional activities will include use of repair manuals and specification of parts required for service work. This course may not be repeated for credit.

8902 POWER TECH. 1 (Auto Shop) (Grades 11-12) 1/2 credit

This course offers a study of internal combustion engines, alternate fuels and transportation systems with a concentration on automobiles. Activities include analysis of operating theory, problem diagnosis, and repair and replacement of components. Units of study will include automotive design, system functions, future trends in transportation and energy, and consumer information. Students will be required to use computers and do research in certain areas of study.

Recommended: Completion of Driver Education

8903 POWER TECH. 2 (Auto Shop) (Grades 10-11-12) 1/2 credit

This course continues the study focus of Power Tech 1, with additional concentration on electronic control units, on board diagnostics, sensors and other advanced systems. Designing, prototype development, testing and analysis of models will also be included. Post graduation educational and career opportunities will be explored.