

INDUSTRIAL STUDIES

Computer Aided Drawing and Design 1 CP-A
This first year course is designed to introduce the students to CAD software as well as hand drafting technique. Units include lettering, dimensioning, the care and use of drafting instruments, sketching, orthographic projection, sectional views, and geometric construction. An introduction to 3 dimensional modeling will also be covered. This series of courses is valuable to many industrial and engineering careers.
Grades 9 through 12 5 Credits

Computer Aided Drawing and Design 2 CP-A
This course covers many aspects of mechanical design. Units include isometric drafting, isometric CAD, fasteners, solid modeling styles and techniques, assembly drawings, and surface modeling. Students will also render and animate their models.
Grades 10 through 12 5 Credits
Prerequisite: Successful completion of Computer Aided Drawing and Design 1

Computer Aided Drawing and Design 3 CP-A
This course furthers the student knowledge in 3 dimensional modeling and animation techniques. Students can choose to continue a previous project or start a new one. Students will work individually and in groups. In addition, a Technology Student Association competition will be available for the students.
Grades 11 and 12 5 Credits
Prerequisite: Successful completion of Computer Aided Drawing and Design 2

Computer Aided Drawing and Design 4 Honors
This course explores the use of system customization for drawing production enhancement and the principles of data manipulation and will build on the skills achieved in earlier CADD courses. The course explores in more detail several advanced concepts aimed at increasing drawing efficiency, including linking with external drawing components, and creating dimension styles and viewpoints. The student also gains exposure to the customizable features of the CADD software, including linetypes, hatch patterns, scripts, slide shows, macros, shapes, and an integrated custom menu system. Students will develop a portfolio for higher ed. and job interviews.
Grade 12 5 Credits
Prerequisite: Teacher Recommendation, completion of CADD 3, with a grade of 82 or higher.

Computer Animation CP-A
This course will introduce students to 3-dimensional computer animation applications. Concepts, relationships between concept and technical skills, and the need to understand the historical development of 3-dimensional computer animation will be emphasized. Exercises will highlight the techniques of creating the illusion of motion and three-dimensional space using computer software. Students will be able to create 2-dimensional art on the

computer as well as fully rendered 3-D characters and environments along the lines of "Shrek". It is recommended that students enrolling in this course be familiar with basic computer functions and computer file management. This class will count towards Practical Art requirement, not Technology requirement.
Grades 10 through 12 5 Credits
Prerequisite: Engineering Design Technology 1, Fine Art 1

Architecture 1 CP-A
This course will focus on architectural drawing, design, and planning. Students will learn how to use computers and sophisticated software to model building structures. Students will then apply knowledge about basic residential design and planning to create their own "dream home". Students will produce a complete set of detailed architectural drawings and scale model.
Grades 9 and 10 (11 and 12 with teacher approval) 5 Credits

Architecture 2 CP-A
Students will learn about sustainable, green, and energy efficient design practices that are quickly becoming the standard in modern day building design and planning. Emphasis will be placed on design elements and principles as students learn about advanced drawing and presentation techniques. Students will spend more time looking and thinking about both modern day and historical works to help broaden their understanding of architecture.
Grades 10 through 12 5 Credits
Prerequisite: Successful completion of Architectural Design 1

Architectural Design 3 Honors
Students will build various computer and physical models of both existing and self-designed structures. An emphasis on construction techniques, new technologies, and alternative structures will take place.
Grades 11 and 12 5 Credits
Prerequisite: Successful completion of Architectural Design 2, with a grade of 82 or higher.

Architectural Design 4 Honors
This capstone course will require students to conduct in-depth research, develop solutions, and construct models that solve complex problems related to Architectural Design and Engineering. Students will design and develop a comprehensive electronic and print design portfolio to present the results of their research and solution. Solutions will be formally presented to peers and department faculty.
Grade 12 5 Credits
Prerequisite: Teacher recommendation, completion of Architectural Design 3, with a grade of 82 or higher.

Honors level courses (3rd and 4th year) have a higher demand for research, development, documentation presentation, and mathematical applications. Students may engage in various engineering and design competitive events. Analysis of design and creativity is essential for success. Students are expected to be very active learners who initiate and participate in all facets of the class. All honors level courses in this department are designed for those students who are insightful, analytical, and respectful of the power of technology, design, and problem solving. Extra hours above the regular school day are a requirement for success. Honor students are encouraged to enroll in higher level science and math courses concurrently.

WORK STUDY PROGRAM

CAD, Architecture

CP-B

Students who will be seeking admittance to this program in their senior year are encouraged to take Driver Behind the Wheel Training at age 16 so they are eligible for their license at age 17 – since they must be able to provide their own transportation. This program provides the senior student with the opportunity to relate their skills in the world of work while earning money. Through a cooperative arrangement between the school and community employers, students spend a part of the day in school and a part in an approved office, related commercial/retail establishment, day care facility, or engineering firm, depending on completion of prerequisite. The program is comprised of the related classroom course and up to three periods of released time for paid work experience. Fifteen credits are earned upon successful completion of the course. The related class covers life skills content related to money management and career preparation. Money management topics covered include banking, taxes, using credit, maintaining a checking account, making major purchases, independent living, consumerism, civic financial responsibility, and insurance. Included in the career preparation area are job searching, resumes, understanding paychecks, dealing with different bosses and co-workers, how to work as part of a team, workplace communications, worker accountability and productivity, safety on the job, and ethics in the workplace.

Senior Enrollment Only

15 Credits

Prerequisites: See Chart Below

Category for Work Study	Required Courses
CAD	Completion or concurrently enrolled in CAD 3
Architecture	Completion or concurrently enrolled in Arch 3