

# Pre-Engineering Design Technology

## **PROGRAM DESCRIPTION:**

This is a two-year program open to juniors and seniors. Students should have an interest in engineering, architecture, drafting, design, robotics and computer controlled equipment.

Students learn drafting, CAD, and CNC programming. In addition students learn architectural design and explore various engineering disciplines. The course covers safety, employment and educational opportunities, current trends and developments, and professionalism skills. Students are able to take ideas from conception to reality. The major portion of time will be spent in the labs learning to operate the software, machine tools and controls.

The classroom consists of a networked computer lab, and a manufacturing lab. In the computer lab students learn computer aided drafting and design (CAD) both mechanical and architectural. Students also learn how to create programs to run computer numerically controlled (CNC) machines. The manufacturing lab consists of a drill press, band saw, metal band saw, four CNC mills, CNC lathe, robotic work cell, fluid system (hydraulic and pneumatic) trainer and a programmable logic controller (PLC).

## **PROGRAM BENEFITS:**

- ◆ 3 High School credits
- ◆ Opportunity for equivalency credit in Science, Math and Fine Arts
- ◆ Competency Certificate
- ◆ Leadership opportunities through SkillsUSA
- ◆ Preparation for next level of education
- ◆ Opportunity for scholarships
- ◆ Successful completion of the program, with a grade of “B” or higher, may result in college credit

## **PREREQUISITES:**

- ◆ Career interest in engineering/design, architecture, manufacturing or related occupations
- ◆ Participation in Orientation/Interview at the Skills Center
- ◆ Personal computer skills necessary
- ◆ One year of Algebra with a grade of “C” or better
- ◆ Geometry, basic drafting, manufacturing technology or metals classes are recommended
- ◆ Art Studio classes are recommended.
- ◆ Good attendance is essential
- ◆ Application process for second year students requires successful completion of the first year program and teacher recommendation.

**ORGANIZATIONS:**

Possible enrollment in Skills USA

**STUDENT COSTS:**

Family medical insurance **or** student accident insurance is required. Student accident insurance is available through the Skills Center or sending school.

**CAREER OPPORTUNITIES:**

- ◆ Drafter/Designer
- ◆ CAD Operator
- ◆ CNC Programming
- ◆ CNC Operator
- ◆ Automation Engineer/Technician
- ◆ Mechanical Engineer/Technician
- ◆ Manufacturing Engineer/Technician