

## **INDUSTRIAL ARTS DEPARTMENT PHILOSOPHY**

### **OBJECTIVES**

The Industrial Arts Department has as its objectives:

1. to provide students with an understanding of sequential planning through general drafting and blueprint reading.
2. to help the student develop the practice of careful sequential planning through the systematic application of methods in project building
3. to develop a sense of appreciation of quality in workmanship
4. to expose students to skills related to the trade professions
5. to help the student develop abilities in the use of common tools and machines
6. to prepare the students with skills that can be applied to later employment
7. to provide students with an experience in continuity and opportunity to successfully complete a project
8. to provide students an additional opportunity to express themselves other than in writing or speaking
9. to promote a Christian environment which reinforces respect for the person as well as his/her capabilities
10. to promote a climate of respect for materials, safety and methods related to constructional and mechanical processes
11. to provide a program within our physical and financial ability which most meets the needs of the students in this area
12. to provide a program which will allow for individual instruction in the course of study so that students may continue to develop in this area to their full potential.

### **COURSE OFFERINGS AND DESCRIPTIONS**

#### **Industrial Arts I** (I.A. I)

(full year - 10 credits)

Grades 9 - 10 - 11 - 12

This course, which is a prerequisite to advanced I.A. courses, combines beginning drafting (first semester) with general woodworking (second semester). In the first semester basic hand drafting through the multiview drawing and an introduction to CAD will be studied. The introductory woodworking course second semester deals with the technology and industry as well as basic introduction to hand tools and processes. Each student will design and draw their own individual cabinet using orthographic projection and the multiview drawing technique. Using these drawings as their plans, students will construct their project.

Prerequisite: none

#### **Industrial Arts II** (I.A. II)

(full year - 10 credits)

Grades 10 - 11 - 12

Power Tools -- this course deals with introduction of power tools and equipment in the woodworking shop. Safety, parts, uses and maintenance of equipment is presented through demonstrations, and lectures. Requirements include at least one individualized furniture project. The instructor before beginning must approve all projects.

Prerequisite: I.A. I

#### **CAD (Computer Aided Drafting)**

(full year - 10 credits)

Grades 11 - 12

This is a course designed to give students a basic understanding of Computer Aided Drafting techniques and uses. The first quarter will be used to explain and demonstrate basic AutoCAD commands and techniques. Orthographic projections and Mechanical Drawings will be covered during the second quarter. Introduction to 3-D drawing using both AUTOCAD and Inventor software will be covered during the third quarter. Basic Architectural drawing will be covered during the fourth quarter.

Prerequisite: IA I or recommendation of department

**Construction**

(full year - 10 credits)

Grades 11 - 12

This course will cover basic techniques used in light residential construction. Aspects of construction from foundation, flooring, exterior walls, interior walls, windows and doors, ceiling and roofs will be covered. Future plans are that the school will advertise and contract with an individual to build some type of storage shed or garage here at school and then have it moved to their location.

Prerequisite: IA I or recommendation of department

**Welding**

(full year - 10 credits)

Grades 11 - 12

The first semester will cover the oxygen-acetyl gas welding technique. Demonstrations will be given on equipment set-up, flame adjustment, types of joints, soldering and bronze welding. Requirements will include the satisfactory completion of welded plates showing each of the main welding joints.

The second semester will cover the techniques of shielded metal arc (stick) welding and gas metal arc welding (mig). The use of different types of welding rods and wire, proper current setting and safety practices will be explained and demonstrated. Requirements will be the same as for the first semester.

The class will be offered and limited to the first six juniors or seniors who register. Each student in the class will be required to spend additional time each week in a lab situation in addition to regular class time.

Prerequisite: Industrial Arts I