

**Course Syllabus**  
**Computer Aided Drafting & Design**

**Course Description:**

In this course, you will learn the basics of using the CAD software to create a variety of drawings and designs.

**Prerequisite:** No prior requirements for CAD

**Course Goals:**

Students will:

- 1) Understand the processes of computer aided drafting and design.
- 2) Select and identify appropriate tools for each of the processes.
- 3) Examine principles of measurement.
- 4) Construct projects using drawings created.
- 5) Discuss career opportunities and trends related to computer aided drafting and design.
- 6) Learn the ethics and responsibilities of a professional craftsman.
- 7) Have fun!!!

**Safety:**

Students will following proper safety protocol.

The use of cell phones/music/earbuds/headphones/ charging electronic devices is not permitted during lecture or while working on projects. Students may however use their phones the last 5 minutes of class.

**Method of instruction:**

Lectures	Interactive Lectures	Demonstration
Discussions	Problem Solving	Cooperative Learning
Creative Projects	Models	Students Presentation
Guest Speakers	Videos	Internet

**Grading Policy:**

60% Project work

30% Quizzes, test, chapter test, practical exams

10% Homework

**Attendance Policy:**

You are expected to be here every day. Each day is an important learning experience.

**Tardy Policy:**

Students are expected to arrive on time to class.

**Policy for Late Work:**

Assignments are to be done on time. If absent the assignment is due the day you return.

**Homework Policy:**

The homework given in this class is of the reading variety. Students will be expected to stay caught up with the readings. Quizzes will test comprehension and completion of the readings.

**Classroom Rules:**

- 1) Treat others and their projects with respect.
- 2) Follow all safety rules.
- 3) Take pride in our shop.
- 4) Ask, if you have a question.

**Health and Safety in the Workplace**

Students review basics of ergonomics and repetitive strain injury and learn about the Occupational Safety and Health Administration (OSHA) and Material Safety Data Sheets (MSDS).

**Computer Basics**

Students learn about hardware, software, operating systems, input and output devices, and other basics of computer use.

**Create Shapes**

Students are introduced to engineering and computer-aided design (CAD), including common types of careers that use these skills. They learn about the tools of drafting and begin a drawing in CadStd.

- Explore CAD

- Set Up a Drawing
- Use Coordinates
- Create a House

### **Create Orthographic Drawings**

Students learn about 2-D, 3-D, and orthographic projection. They work with visible and construction lines, layers, dimensions, scale, and symmetry.

- Explore Orthographic Projections
- Draw a Front View
- Draw Two Views
- Draw a Three-View Orthographic Drawing
- Draw a Hole

### **Draw Sectional Views**

Students work with sectional views, planes, angles, orthographic views, cutting plane lines, and offset sections.

- Explore Sectional Views
- Draw a Sectional View
- Place Cutting Planes

### **Create an Isometric Drawing**

Students practice techniques of pictorial drawing, tonal shading, and depth. They work with isometric drawings, using distance and angle measurements to draw lines in CAD.

- Explore Pictorial Drawings
- Draw with Angles

### **Create an Oblique Drawing**

Students explore oblique drawings, learn how to measure lines accurately and using foreshortened lines of depth.

- Explore Oblique Drawings
- Draw with Oblique Angles

### **Create a Perspective Drawing**

Students practice techniques of perspective drawings, learn about vanishing points; horizon lines; and one-, two-, and three-point perspective.

- Explore Perspective Drawings
- Draw in Two-Point Perspective

### **Draw an Auxiliary View**

Students learn about auxiliary views, and how to visualize auxiliary views of 3-D objects. Topics include perpendicular lines, reference planes.

- Explore Auxiliary Views
- Draw with a Reference Plane
- **Dimension Drawings**

Students practice dimension drawings, learn about aligned and unidirectional dimensions, relative and baseline dimensions, and how CAD standards apply to dimensioning. They interpret drawings with advanced features, such as center line and dual dimensioning, tolerance, and theoretical points of intersection.

- Dimension a Block
- Use Baseline Dimensioning
- Dimension a Circle
- Explore Complex Dimensioning

### **Create Working Drawings**

Students learn about working drawings such as detail and assembly drawings. They learn about title blocks, border lines, and orthographic views, then export .cad files to .dxf files in proper order for a set of working drawings.

- Explore Working Drawings
- Draw a Title Block
- Draw a Detail Drawing
- Create a Bill of Materials
- Export Working Drawings