

**Title: Unit Two: Sketching**

**Time Duration:** <% Insert class time here%>

**Lesson Overview:**

A sketch is a freehand drawing used to describe the shape and size of an object. It is a means of quickly expressing an idea. If necessary, it can later be translated into a finished drawing.

**Lesson Objective:**

Upon completion of this unit the student will be able to:

1. Discuss the purpose of sketching and its importance
2. Sketch a straight line
3. Sketch Arcs, Circles and Ellipses
  - i. Create an arc using two different methods
  - ii. Create a circle using the right angle method
  - iii. Create a circle using the square method
  - iv. Create a circle using the triangle method
4. Create an orthographic sketch
5. Create an Oblique Sketch
6. Create an Isometric Sketch
7. Create an isometric circle
  - i. Use the angle method to create an isometric circle
  - ii. Use the triangle method to create an isometric circle
  - iii. Use the rectangle method to create an isometric circle

**Course Materials:**

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**Text**

A.E. Bennett, Louis J. Siy, Blueprint Reading for Welders, 9E, Delmar Cengage Learning, ISBN: 978-1-133-60578-2

**Reference Books**

David Madsen, Engineering Drawing and Design, 5E, Delmar Cengage Learning, ISBN: 978-1-111-30957-2

Larry Jeffus, Welding Principles and Applications, 7E, Delmar Cengage Learning ISBN: 978-1-111-03917-2

### **Lab Computer Requirements**

- Intel® Pentium® III or later, with 800 MHz or faster processor, or compatible
- Microsoft® Windows® XP (Professional, Home Edition, or Tablet PC Edition), Windows 2000, or Windows NT® 4.0 (SP6a or later)
- 256 MB RAM (recommended)
- 300 MB free disk space for installation
- 1024x768 VGA with true color (minimum)
- Microsoft® Internet Explorer 6.0
- CD-ROM drive
- Mouse, trackball, or compatible pointing device

### **Lab Manual Drafting Equipment Requirements**

- Mechanical Pencil set containing a 3MM, 5MM, 7MM and 9MM
- 12" Plastic Architectural Scale
- 12" Plastic Mechanical Scale
- Standard Erasing Shield
- 8.5" x 11" Isometric Sketching Sheets
- 9" x 12" White Premium medium weight (70# basis) Mechanical Paper

## **Evaluation and Assignments:**

### **Evaluation**

The instructor should note the progress of the student by giving assignments and tests that meet the lab and theory objectives.

### **Assignment**

1. Students are to read Unit Two "Sketching".
2. All information contained within this unit should be presented in a lecture environment and immediately referenced in a laboratory setting.
3. Students are to complete review questions at the end of Unit Two.

## **Methodology:**

1. Cover the basic principles of Unit Two using a computer, LCD projector, PowerPoint presentation and Marker Board.