

Western Technical College

31442328 Welding Blueprint Reading 2

Course Outcome Summary

Course Information

Description	This course is designed to develop the student's skill in reading working drawings using AWS welding symbols.
Career Cluster	Manufacturing
Instructional Level	Technical Diploma Courses
Total Credits	2
Total Hours	72

Textbooks

Blueprint Reading for Welders -With 6 Sheets. 9th Edition. Copyright 2014. Bennett, A. E. and Louis J. Siy. Publisher: Cengage Learning. **ISBN-13:**978-1-133-60578-2. Required.

Learner Supplies

Welding sateen jacket, welding work gloves (long leather gauntlet, short leather work gloves), welding helmet, leather cape and sleeves. **Vendor:** To be discussed in class. Required.

Tools: 25' steel tape measure, metal combination square, and scribe. **Vendor:** To be discussed in class. Required.

Six inch leather steel toed work boots - \$75.00-150.00. **Vendor:** To be discussed in class. Required.

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** Campus Shop. Required.

Success Abilities

1. Apply mathematical concepts.
2. Demonstrate ability to think critically.
3. Demonstrate ability to value self and work ethically with others in a diverse population.
4. Make decisions that incorporate the importance of sustainability.
5. Transfer social and natural science theories into practical applications.
6. Use effective communication skills.
7. Use technology effectively.

Program Outcomes

1. Interpret welding drawings

Course Competencies

1. Interpret prints and shop drawings.

Assessment Strategies

- 1.1. Written Product
- 1.2. Written Objective Test

Criteria

You will know you are successful when

- 1.1. you identify the different views on a print.
- 1.2. you identify structural parts from a print.
- 1.3. you interpret lines from a print or drawing.
- 1.4. you apply center lines, object lines, and other types of lines to correctly determine part feature boundaries and sizes.
- 1.5. you summarize the information found in title block, notes & specifications, bill of materials.

Learning Objectives

- 1.a. Review various views on a print.
- 1.b. Identify title block, notes & specifications, bill of materials.
- 1.c. Review line types on a drawing/print.
- 1.d. Relate line types to part feature sizes.

2. Interpret abbreviations and dimensions.

Assessment Strategies

- 2.1. Written Product
- 2.2. Written Objective Test

Criteria

You will know you are successful when

- 2.1. you use special notes to reference details.
- 2.2. you determine which features and sizes are critical based on the type of feature and given print dimensions.
- 2.3. you calculate the overall dimensions of an object to select the appropriate stock.
- 2.4. you calculate dimensions that are missing for part sizes and features.

Learning Objectives

- 2.a. Calculate dimensions missing from drawing.
- 2.b. Detail part dimensions from isometric drawing.
- 2.c. Define tolerance terminology.
- 2.d. Apply mathematical concepts to determine tolerances on dimensions.
- 2.e. Determine tolerances on dimensions.
- 2.f. Determine limits on dimensions.

3. Interpret weld symbols.

Assessment Strategies

- 3.1. Written Product
- 3.2. Demonstration

Criteria

You will know you are successful when

- 3.1. you describe the weld based on the symbol from the print.
- 3.2. you identify the parts of a weld symbol.
- 3.3. you identify all weld symbols
- 3.4. you identify which side of the joint should be welded

- 3.5. you identify what type of joint preparation should performed
- 3.6. you identify which welding process is called for in the welding symbol
- 3.7. you identify the pitch of the welds
- 3.8. you identify which weld should be performed first
- 3.9. you identify weld length
- 3.10. you identify weld contours
- 3.11. you identify weld finish and size.

Learning Objectives

- 3.a. Demonstrate an understanding of AWS welding symbols.
- 3.b. Identify the parts of a weld symbol.
- 3.c. Distinguish weld symbol characters.
- 3.d. Identify which welding process is called for in the welding symbol
- 3.e. Identify joint configurations for various weld symbols.
- 3.f. Describe weld contours and finish requirements.
- 3.g. Recognize the different joints (lap, flare, bevel, etc.)
- 3.h. Draw weld joints from given weld symbols.
- 3.i. Describe weld contours and finish requirements.

4. Construct weldments per IAW shop drawings / prints.

Assessment Strategies

- 4.1. Skill Demonstration
- 4.2. Product

Criteria

You will know you are successful when

- 4.1. you wear your PPE at all necessary times.
- 4.2. you locate the materials needed for the project based on the bill of materials on the print.
- 4.3. you interpret the notes and specifications of the print to assembly the weldments.
- 4.4. you use the tools and machines correctly.
- 4.5. you fabricate the parts based on the dimensions in the print.
- 4.6. you assemble the parts correctly,
- 4.7. you set up the equipment correctly.
- 4.8. you make the correct welds.

Learning Objectives

- 4.a. Interpret a blueprint to determine the type of weld (materials, dimensions, joint, weld process, etc)
- 4.b. Cut material to size.
- 4.c. Weld material according to specifications.
- 4.d. Verify weld.