



Western Technical College

31442308 Welding Blueprint Reading 1

Course Outcome Summary

Course Information

Description	This course is designed to develop the student's skill in reading working drawings of weldments.
Career Cluster	Manufacturing
Instructional Level	Technical Diploma Courses
Total Credits	1
Total Hours	36

Textbooks

Welding Print Reading. 7th Edition. Copyright 2020. Walker, John R. and W. Richard Polanin. Publisher: Goodheart-Wilcox.Co. ISBN-13: 978-1-63563-681-9. Required.

Success Abilities

1. Cultivate Passion: Expand a Growth-Mindset
2. Cultivate Passion: Increase Self-Awareness
3. Live Responsibly: Embrace Sustainability
4. Refine Professionalism: Improve Critical Thinking
5. Refine Professionalism: Participate Collaboratively
6. Refine Professionalism: Practice Effective Communication

Program Outcomes

1. Interpret welding drawings

Course Competencies

1. Identify the purpose of blueprints.

Assessment Strategies

- 1.1. Written Objective Test

Criteria

You will know you are successful when:

- 1.1. you explain why blueprints are used
- 1.2. you locate title block, notes & specifications, bill of materials, and other pertinent information on a print.
- 1.3. you identify the type of print you are working with.

Learning Objectives

- 1.a. Describe the role of blueprints in industry
- 1.b. Identify industries that use blueprints.
- 1.c. Describe the purpose of graphics, dimensions, and notes on a blueprint
- 1.d. Identify the title block, bill of materials, notes and specifications, and symbols on blueprint.
- 1.e. Investigate the types of prints (assembly, sub-assembly, detail, detail assembly, etc.)

2. Distinguish various views and line types found on a blueprint.

Assessment Strategies

- 2.1. Written objective exam

Criteria

You will know you are successful when:

- 2.1. you identify each of the following: orthographic projections, isometric drawing, oblique drawings, and sections views.
- 2.2. you describe the common (6) views found on an orthographic projection
- 2.3. you explain the intent and type of a section view.

Learning Objectives

- 2.a. Distinguish between orthographic projections, isometric drawing, oblique drawings, and sections views.
- 2.b. Explore front, right side, left side, top, front, and back views
- 2.c. Describe commonality of size information between views (length, height, width)
- 2.d. Explore the purpose and type of a section view (full section, half section, rotated view, revolved view etc.)

3. Interpret notes, abbreviations, and specifications found on a blueprint.

Assessment Strategies

- 3.1. Written objective exam

Criteria

You will know you are successful when:

- 3.1. you describe a feature found on a drawing that is defined using symbols.
- 3.2. you describe a feature found on a drawing that is defined using abbreviations.
- 3.3. you locate notes on prints and accurately describe whether the notes are general or local.
- 3.4. you label geometric symbols on prints.

Learning Objectives

- 3.a. Examine various forms and locations of notes and specifications (general and local, in body and in bill of material)
- 3.b. Interpret common geometric symbols found on prints.
- 3.c. Interpret specifications commonly found on prints.
- 3.d. Interpret notes commonly found on prints.

4. Explore size and location dimensions.

Assessment Strategies

- 4.1. Written objective exam

Criteria

You will know you are successful when:

- 4.1. you identify and compute missing dimensions on a print.
- 4.2. you identify and compute part feature locations.
- 4.3. you interpret part feature sizes.
- 4.4. you interpret angular measurements on prints.

Learning Objectives

- 4.a. Examine the purpose of dimensions.
- 4.b. Examine the various ways that dimensional information is expressed (fractions, decimals, whole numbers, etc)
- 4.c. Interpret feature sizes based on stated and unstated dimensions
- 4.d. Compute size and/or location dimensions based on stated tolerances.

5. Explore critical aspects of a blueprint.

Assessment Strategies

- 5.1. Written Objective Test

Criteria

You will know you are successful when

- 5.1. you identify title block, bill of materials, and revision block on a blueprint.
- 5.2. you describe the types of information found in a bill of materials.
- 5.3. you describe the types of information found in the title block.
- 5.4. you describe the purpose of a revision block on a print.
- 5.5. you develop a cut list based on information from the bill of materials.

Learning Objectives

- 5.a. Locate title block, bill of materials, and revision block on a blueprint.
- 5.b. Examine parts of a title block
- 5.c. Examine meaning of information on a title block
- 5.d. Examine the parts of a bill of materials
- 5.e. Examine the meaning of information on a bill of material
- 5.f. Interpret bill of materials for materials needed for a project
- 5.g. Examine various structural shapes and how they are specified.

6. Interpret weld symbols.

Assessment Strategies

- 6.1. Written Product
- 6.2. Demonstration

Criteria

You will know you are successful when

- 6.1. you identify the parts of a welding symbol.
- 6.2. you identify all weld symbols
- 6.3. you identify which side of the joint should be welded
- 6.4. you identify what type of joint preparation should performed
- 6.5. you identify which welding process is called for in the welding symbol
- 6.6. you identify the pitch of the welds
- 6.7. you identify which weld should be performed first
- 6.8. you identify weld length
- 6.9. you identify weld contours
- 6.10. you identify weld finish and size.

Learning Objectives

- 6.a. Demonstrate an understanding of AWS welding symbols.
- 6.b. Identify the parts of a weld symbol.
- 6.c. Distinguish weld symbol characters.
- 6.d. Identify which welding process is called for in the welding symbol

- 6.e. Identify joint configurations (lap, flare, bevel, etc.) for various weld symbols.
- 6.f. Describe weld contours and finish requirements.
- 6.g. Sketch weld joints from given weld symbols.