Western Technical College

31442308  Welding Blueprint Reading 1

Course Outcome Summary

Course Information

<table>
<thead>
<tr>
<th>Description</th>
<th>This course is designed to develop the student's skill in reading working drawings of weldments.</th>
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<tbody>
<tr>
<td>Career</td>
<td>Manufacturing</td>
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<tr>
<td>Cluster</td>
<td>Manufacturing</td>
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<tr>
<td>Instructional Level</td>
<td>Technical Diploma Courses</td>
</tr>
<tr>
<td>Total Credits</td>
<td>1</td>
</tr>
<tr>
<td>Total Hours</td>
<td>36</td>
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</tbody>
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Textbooks


Program Outcomes

1. Interpret welding drawings

Course Competencies

1. Identify the purpose of blueprints

   Assessment Strategies
   1.1. Written Product
   1.2. Written Objective Test (score 75% or higher)

   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 drawings used on a blueprint.
Assessment Strategies
2.1. Written product
2.2. Written objective exam
2.3. Activity

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.
2.4. you build a box from an orthographic projection with all views labeled.

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. Determine spatial relationship between various views
2.d. Construct a simple 3 dimensional model
2.e. Describe commonality of size information between views (length, height, width)
2.f. Differentiate between oblique and isometric drawings.
2.g. Explore the purpose and type of a section view (full section, half section, rotated view, revolved view etc.)
2.h. Distinguish part alignment and rotation from view to view.
2.i. Visualize line positions from one view to another.

3. Identify line types found on a blueprint

Assessment Strategies
3.1. Written product
3.2. Written objective exam

Criteria
You will know you are successful when:
3.1. you identify the type of line based on the symbol in the print.
3.2. you describe the purpose of the line.
3.3. you locate line types on a provided drawings.

Learning Objectives
3.a. Determine attributes of various lines.
3.b. Compare lines from view to view.
3.c. Locate line types from provided drawings.
3.d. Identify basic lines such as visible lines, hidden lines, center lines, dimension lines, and extension lines etc. on a blueprint.

4. Explore Notes and Specifications

Assessment Strategies
4.1. Written product
4.2. Written objective exam

Criteria
You will know you are successful when:
4.1. you describe a feature found on a drawing that is defined using symbols.
4.2. you describe a feature found on a drawing that is defined using abbreviations.
4.3. you locate notes on prints and accurately describe whether the notes are general or local.
4.4. you describe the meaning of various notes on prints.
4.5. you label geometric symbols on prints and writes brief interpretations of the symbols.

Learning Objectives
4.a. Examine various forms and locations of notes and specifications (general and local, in body and in bill of material)
4.b. Interpret common geometric symbols found on prints.
4.c. Interpret specifications commonly found on prints.
4.d. Interpret and apply information that is called out in the notes and specifications
4.e. Interpret notes commonly found on prints.

5. **Explore size, location, and structural shape dimensions.**

Assessment Strategies
5.1. Written product
5.2. Written objective exam

Criteria

*You will know you are successful when:*
5.1. you identify and compute missing dimensions on a print.
5.2. you identify and compute part feature locations.
5.3. you interpret part feature sizes.
5.4. you interpret angular measurements on prints.

Learning Objectives
5.a. Examine the purpose of dimensions.
5.b. Examine the various ways that dimensional information is expressed (fractions, decimals, whole numbers, etc)
5.c. Interpret feature sizes based on stated and unstated dimensions
5.d. Compute size and/or location dimensions based on stated tolerances.
5.e. Correctly manage dimensional information.
5.f. Examine various structural shapes and how they are specified.
5.g. Identify a structural shape by its specification.

6. **Explore critical aspects of a blueprint.**

Assessment Strategies
6.1. Written Product
6.2. Written Objective Test

Criteria

*You will know you are successful when*
6.1. you identify title block, bill of materials, and revision block on a blueprint.
6.2. you develop a material list based on information from the list.
6.3. you describe the types of information found in the title block.
6.4. you describe the types of information found in a bill of materials.
6.5. you describe the purpose of a revision block on a print.

Learning Objectives
6.b. Examine parts of a title block
6.c. Examine meaning of information on a title block
6.d. Correctly manage information specified on a title block
6.e. Examine the parts of a bill of materials
6.f. Examine the meaning of information on a bill of material
6.g. Interpret bill of materials for materials needed for a project