

Approved by: Christin Cech

Last updated: 1/14/2025

**Blueprint Reading for Power Engineering
POWENG-334
Work/Life Experience Portfolio**

Credit for Prior Learning provides students a range of options to earn college credit for what they already know. Students can demonstrate college-level knowledge and competencies from examination, portfolio, to workforce and military.

1. Course title, number & credit value:

- a. Blueprint Reading for Power Engineering, POWENG-334, 1 CR

2. Course description:

- a. Building blueprints are studied along with symbols and piping diagrams. Students will be able to locate and identify common building systems. Some mechanical assembly prints will also be covered.

3. Course Competencies that must be demonstrated:

- a. Workplace experience working with drawings for maintenance and operations (building blueprints, piping and instrumentation drawings, etc.)

4. Portfolio requirements that demonstrate competencies. *Note for Resumes: Lead faculty must verify the student's work history via a letterhead mail or phone interview.

- a. Resume and a discussion with the Department Chair/Lead Faculty

Course Competencies

1. Identify types of linear measurement instruments

Assessment Strategies

1.1. Written Objective Test

Criteria

1.1. Learner measures predetermined objects with tape measure within 100% accuracy

1.2. Learner identifies depth micrometers with 100% accuracy

Learning Objectives

1.a. measure object using a retractable tape measure

1.b. Measure object using a steel ruler

2. Explain angular measurements in a circle

Assessment Strategies

2.1. Drawing/Illustration

Criteria

Approved by: Christin Cech

Last updated: 1/14/2025

**Blueprint Reading for Power Engineering
POWENG-334
Work/Life Experience Portfolio**

Credit for Prior Learning provides students a range of options to earn college credit for what they already know. Students can demonstrate college-level knowledge and competencies from examination, portfolio, to workforce and military.

-
- 2.1. Learner draws the 360 degrees of a circle neat enough for instructors approval and with 90% accuracy
 - 2.2. Learner sketches a triangle with a 90 degree angle with 100% accuracy
 - Learning Objectives
 - 2.a. Explain how a circle is made up of 360 degrees
 - 2.b. Describe the relationship between the diameter of a circle and the circumference
 3. Sketch an object using orthographic, isometric, and oblique drawing techniques.
 - Assessment Strategies
 - 3.1. Drawing/Illustration
 - Criteria
 - 3.1. Learner sketches on object with a #2 pencil in a one dimensional plane within 2% tolerance
 - 3.2. Learner sketches an object in 3D within a 2% tolerance
 - Learning Objectives
 - 3.a. determine proper part orientation on given graph paper
 - 3.b. View the object in different planes
 4. Locate specific systems on an architectural blueprint
 - Linked Career Essentials
 - Effective Problem Solving - Practice
 - Professionalism - Practice
 - Assessment Strategies
 - 4.1. Demonstration
 - Criteria
 - 4.1. Learner circles the cooling system on the print with 100% accuracy
 - 4.2. Learner circles the heating system on the print with 100% accuracy
 - Learning Objectives
 - 4.a. Identify features on a blueprint
 - 4.b. Identify cooling capacities for air conditioning units
 5. Trace piping diagrams for power plants systems
 - Assessment Strategies
 - 5.1. Demonstration

Approved by: Christin Cech

Last updated: 1/14/2025

Blueprint Reading for Power Engineering
POWENG-334
Work/Life Experience Portfolio

Credit for Prior Learning provides students a range of options to earn college credit for what they already know. Students can demonstrate college-level knowledge and competencies from examination, portfolio, to workforce and military.

Criteria

5.1. Learner follows the steam flow from the boiler with 90% accuracy

5.2. Learner identifies the boiler feed pump with 100% accuracy

Learning Objectives

5.a. Break down diagrams into smaller separate sections for easier comprehension

5.b. Plot the correct path for steam flow

6. Find specific information on a mechanical blueprint plan

Assessment Strategies

6.1. Performance

Criteria

6.1. Learner circles the symbol for return air ducts on the mechanical blueprint with 100% accuracy

6.2. Learner places a box around the symbol for electric heaters on the mechanical blueprint with 100% accuracy

Learning Objectives

6.a. Determine locations of various mechanical items

6.b. Describe how refrigeration lines are located on a blueprint

7. Create a simple blueprint using welding symbols

Assessment Strategies

7.1. Written Product

Criteria

7.1. Learner draws a reference line to AWS D.1.1 standards.

7.2. Learner draws symbols for fillet welds with 100% accuracy

7.3. Learner draws weld all around symbol with 100% accuracy

Learning Objectives

7.a. Draw a reference line used in welding prints

7.b. Explain what information is in the tail of the arrow