

**COURSE OUTLINE****Course:** 12222 ENGINEERING DRAWING**Total Course Hours:** 90.00**CBEDS Title:** ENGINEERING DRAWING**CBEDS #:** 1222**Job Title(s):**

Mechanical Drafter, Architectural Drafter, Electronics Drafter

**Prerequisites:**

NONE

**Course Description:**

This course is designed as a one semester introductory program into the vocational field of creating technical drawings. The student will learn to use basic drafting tools with an emphasis on the ability to compose a neat, accurate, and legible engineering drawing. Hand lettering and the proper use of different pencil grades will be stressed to form the basis for future drafting courses.

Integrated throughout the course are Academic and CTE standards, which include safety, communication, technology, ethics, career planning and other employability skills.

Hours	
Class	OJT

**Occupational Competencies**

**1-7 on the Course Outline are generic to all BVROP courses and include the BVROP Student Outcomes**

3.00	<b>1</b>	<b><u>ORIENTATION</u></b>	<ul style="list-style-type: none"> <li>A Identifies and discusses course objectives and competencies</li> <li>B Discusses ROP Student Outcomes</li> <li>C Explains class attendance and behavior objectives</li> </ul>
3.00	<b>2</b>	<b><u>HEALTH, SAFETY AND ENVIRONMENTAL MANAGEMENT</u></b>	<ul style="list-style-type: none"> <li>A Describes accident procedures</li> <li>B Demonstrates appropriate safety practices (e.g. bending, lifting, etc.)</li> <li>C Demonstrates knowledge of classroom procedures and drills (e.g., earthquake, fire and emergency)</li> </ul>
3.00	<b>3</b>	<b><u>ETHICS AND LEGAL RESPONSIBILITY</u></b>	<ul style="list-style-type: none"> <li>A Defines sexual harassment and discusses tactics for handling harassment situations</li> <li>B Applies appropriate workplace behavior and standards</li> </ul>
3.00	<b>4</b>	<b><u>LEADERSHIP AND TEAMWORK</u></b>	<ul style="list-style-type: none"> <li>A Describes the characteristics and benefits of teamwork and leadership</li> <li>B Demonstrates ability to make appropriate decisions</li> <li>C Works well with others and gives/takes constructive criticism</li> </ul>
15.00	<b>5</b>	<b><u>CAREER PLANNING</u></b>	<ul style="list-style-type: none"> <li>A Prepares a finished, professional portfolio showing the best work that has been completed during the class</li> <li>B Completes a job application correctly</li> <li>C Demonstrates appropriate personal grooming and dress</li> <li>D Prepares for and critiques a simulated employment interview.</li> <li>E Discusses employee benefits and rights as related to the specific occupational job area including gender equity and equal opportunity.</li> <li>F Identifies acceptable procedures to leave a job.</li> <li>G Applies for a scholarship.</li> <li>H Completes a professional resume.</li> </ul>

Hours	
Class	OJT

3.00	
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**6 COMMUNICATION**

- A Uses effective workplace conversation
- B Reads and interprets written information and directions
- C Practices various forms of written communication appropriate to the occupation

5.00	
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**7 STUDENT OUTCOMES**

- A Demonstrates Occupational Specific, Communication and Critical Thinking Skills
- B Demonstrates Responsible Work Ethics
- C Demonstrates Career/Employment Literacy
- D Demonstrates Effective Use of Technology

2.00	
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**8 INTRODUCTION**

- A Discusses the many career opportunities within the drafting industry
- B Discusses various drawing types (assembly, fabrication, source control as related to dimensioning).
- C Demonstrates knowledge and use of supplies and equipment
- D Demonstrates lettering
- E Demonstrates line conventions
- F Defines measurement scales
- G Defines technical math
- H Demonstrates Industry standard documentation control practices

10.00	
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**9 MANUAL DRAFTING TOOLS & EQUIPMENT**

- A Demonstrates use of a Protractor
- B Demonstrates use of templates
- C Demonstrates use of scales
- D Demonstrates use of a Lettering Guide
- E Demonstrates use of Triangles
- F Demonstrates use of a Parallel Rule
- G Demonstrates use of an Eraser Shield
- H Demonstrates use of a French Curve
- I Demonstrates use of a Compass
- J Applies appropriate Line Weights

18.00	
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**10 MECHANICAL ENGINEERING DRAWINGS**

- A Demonstrates Sketching
- B Demonstrates Orthographic drawings
- C Demonstrates Isometric drawings
- D Demonstrates Oblique drawings
- E Demonstrates Full Section drawings

10.00	
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**11 DIMENSIONING**

- A Demonstrates the ability to accurately lay out and dimension a mechanical part
- B Demonstrates the proper technique for diameter and radius call-outs
- C Demonstrates the proper technique for leaders and notes.
- D Discusses tolerances

10.00	
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**12 ELECTRONIC ENGINEERING DRAWINGS**

- A Discusses the vocational field of Electronic Drafting
- B Discusses the processes involved in the design/fabrication of a Printed Circuit Board
- C Demonstrates a Schematic Diagram
- D Demonstrates an Artwork/Layout Drawing
- E Demonstrates an Assembly Drawing
- F Demonstrates a Fabrication Drawing

Hours	
Class	OJT

12222 ENGINEERING DRAWING

5.00		<b>13 ARCHITECTURAL DESIGN/DRAFTING</b>
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- A** Applies knowledge of basic home design/layout strategies
- B** Demonstrates measuring to scale
- C** Demonstrates the use of standard architectural symbols
- D** Demonstrates architectural dimensioning standards

**TOTAL HOURS**

Class	OJT	Course
<b>90.00</b>	<b>0.00</b>	<b>90.00</b>