

COURSE TITLE: Blueprint Reading II

COURSE NUMBER: MFG* E125

CREDITS: 3

DESCRIPTION: Second course in blueprint reading. A further study of simple and complex drawings for machining or assembly purposes. Topics include the application and meaning of geometric characteristics and controls, the metric system, weldment, forging and casting drawings and procedures, communication with freehand sketches, blueprint terms and abbreviations.

PREREQUISITES: Completion of Machine Technology Level I Certificate, completion of MFG* E124: Blueprint Reading I or with consent of instructor.

General Education Goals:

The student who completes this course will be able to:

- 2.1 - State a problem clearly
- 2.2 - Observe data accurately
- 2.3 - Analyze and organize facts and ideas
- 2.4 - Draw reasonable inferences from facts and ideas
- 3.2 - Receive and comprehend written and oral information
- 6.2 - Interpret numerical information as presented in charts and graphs

OTHER: The student who completes this course will be able to:

- Understand weldment, forging and casting drawings and procedures
- Communicate with freehand sketches
- Demonstrate proficiency with blueprint terms and abbreviations
- Apply geometric characteristics and controls

COURSE CONTENT:

1. Applications of geometric dimensioning and tolerancing
 - a. Identify Form Tolerances for individual features
 - b. Use of Datums
 - c. Use of Location and Position Tolerances
 - d. Identify and use of Symmetry
2. Metrics and Metric Drawings

- a. SI Base Units
 - b. Types of metric drawings
 - c. Use of First angle projection
 - d. Using Metric conversion factors
 - e. Surface texture measurement system
 - f. Metric screw thread notation
3. Castings, forgings and weldments
 - a. Identification
 - b. Methods of producing
 - c. Details on engineering drawings
 - d. Machined parts
4. Sketching techniques
 - a. Materials used in making freehand drawings
 - b. Making straight and curved lines
 - c. Measuring objects
 - d. Dimensioning rules
 - e. Orthographic sketching
 - f. Isometric sketching
 5. Basic blueprint reading
 - a. Putting it all together

LABORATORIES:

1. Applications of geometric dimensioning and tolerancing
 - a. Use of Datums
 - b. Use of Location and Position Tolerances
 - c. Identify and use of Symmetry
2. Applications of Metric Drawings
 - a. Use of First angle projection
 - b. Using Metric conversion factors
 - c. Surface texture measurement system
 - d. Metric screw thread notation
3. Reading casting, forging and weldment drawings
 - a. Identification and use of each type of part
 - b. Methods of producing these parts
 - c. Details on engineering drawings
 - d. Processing of machined parts

4. Sketching techniques
 - a. Using materials to make freehand drawings
 - b. Making straight and curved lines to form sketches
 - c. Measuring objects
 - d. Applying dimensioning rules
 - e. Making orthographic sketches
 - f. Making isometric sketches

5. Basic blueprint reading
 - a. Combining all skills to interpret drawings