

INTERMEDIATE DRAFTING DESIGN - PACING GUIDE - 2017-2018

COURSE OUTLINE AND COURSE GOALS

Unit 1 - Orientation

1. Relate the importance of drafting design technology in today's technological work force.

Essential Question: Why is it important to communicate in a language that transcends spoken words and barriers?

- Identify careers related to drafting
- Recognize advantages and disadvantages of entrepreneurship
- Explain how to prepare for a drafting career
- Demonstrate skills & techniques for applying for a job
- Demonstrate workplace skills
- Describe appropriate techniques for finding a job
- Explain typical uses of board and CAD techniques

Unit 2 - Safety

2. Demonstrate the safe handling of drafting design tools according to classroom and environmental practices, procedures, and regulations.

Essential Question: What is the important of complying with safety rules, regulations and procedures?

- Follow general safety procedures.
- Adjust equipment for maximum comfort and usability.
- Describe ergonomic considerations.

Unit 3 - Section Views

3. Demonstrate the proper use of sectional view concepts to create a full section, half section, broken-out section, offset section, revolved section, and a removed section.

- Utilizing cutting planes
- Applying section lining

Essential Question: Why are section views necessary on technical drawings?

- Describe the purpose of a sectional view.
- Select the appropriate type of sectional view to show the hidden features.
- Show ribs, webs, fasteners, and similar features in section.
- Rotate selected features into the cutting plane.
- Describe and use conventional breaks and symbols.
- Prepare a drawing with sectional views using both board drafting techniques and CAD.
- Demonstrate the proper use of sectional view concepts.
Cutting planes, Section lining and/or hatching, Full section, Half section, Broken-out section, Offset section, Revolved section, Removed section

Unit 4 - Auxiliary Views

4. Create drawings of inclined surfaces.

- Constructing primary auxiliary views

Essential Question: Why are auxiliary views necessary on technical drawings?

- Determine when a full auxiliary view is required.
- Determine when a partial auxiliary view is required.
- Develop a primary auxiliary view using board drafting or CAD techniques.
- Develop revolutions using board drafting or CAD techniques.
- Use the concept of revolutions to determine the true size and shape of an inclined surface.

Unit 5 - Threads and Fasteners

5. Create drawings illustrating detailed, schematic, and simplified thread representations.

- Identifying common thread terms

Essential Question: What is the relevance of representing threads and fasteners?

- Identify and describe various types of fasteners.
- Define common screw-thread terms.
- Specify threads and fasteners on a technical drawing
- Draw detailed, schematic, and simplified thread representations.
- Name and describe common thread series.
- Describe and specify classes of thread fits.
- Draw various types of thread fasteners using board drafting and CAD techniques.

Unit 6 - Pictorial Views

6. Utilize pictorial concepts to produce an isometric drawing.

- Identifying oblique, trimetric, diametric views

Essential Question: What are the benefits to representing an object through an isometric drawing?

- List various uses of pictorial drawings.
- Select and draw the most practical type of pictorial for a specific purpose.
- Create isometric drawings with the isometric axes in normal and reversed positions.
- Explain the basic differences in the three types of axonometric projection.

Unit 7 – Dimensioning

7. Apply dimensions, notes, and other relative information to a drafting design project.

Examples: dimensions-angular, linear, tolerances

- Utilizing American Standards Institute (ANSI) dimensioning standards
- Identifying dimensioning symbols and tolerances

Essential Question: Why is the implementation of proper dimensioning techniques vital for the field of Manufacturing and Construction?

- Apply measurements, notes, and symbols to a technical drawing.
- Use ANSI and ISO standards for dimensions and notes.
- Differentiate between size dimensions and location dimensions.
- Specify geometric tolerances using symbols and notes.
- Designate appropriate surface finishes.
- Use board drafting techniques to add dimensions, notes, and geometric tolerances to a technical drawing.
- Use a CAD system to add dimensions, notes, and tolerances to a technical drawing.

CULMINATING PRODUCT:

The previous lessons and activities will result in a final project of a detailed working drawing. It will involve a series of orthographic drawings which will be arranged and printed.