

THREE-DIMENSIONAL SOLID MODEL DESIGN II - 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 – Multipart Assembly

3. Create a three-dimensional assembly with clearances to ensure complete functionality.

• Describing the application of part constraints to three-dimensional assembly

Essential Question: How does three dimensional solid modeling enhance Manufacturing and Construction related fields?

- Create an assembly file.
- Place assembly parts.
- Apply assembly constraints.
- Create a two dimensional assembly drawing.
- Add dimensions, notes, bill of materials, and specifications.

Unit 4 - Animation

4. Create a three-dimensional animation presentation with computer-generated models and drawings.

• Defending a three-dimensional animation presentation

Essential Question: How does three dimensional solid modeling enhance manufacturing and construction related fields?

- Develop a presentation.
- Present a presentation.

Unit 5 – Sheet Metal

5. Create sheet metal models and flat pattern drawings, including the specification of relief settings and creation of a flat pattern.

Essential Question: How does three dimensional solid modeling enhance manufacturing and construction related fields?

- Create a face/profile.
- Create a flange.

- Create cutouts.
- Create holes.
- Specify bends and release.
- Create flat pattern.
- Create sheet metal drawing.

Unit 6 - Career Readiness Project

6. Develop a career-related project based on current research and design.

Essential Question: What impact does 3-D solid Modeling drawing have on Research and Development (R&D)?

- Research current technologies in the field of drafting.
- Complete a project based on information and guidelines provided by the instructor.
- Give an oral presentation.

CULMINATING PRODUCT:

The previous lessons and activities will result in a final project consisting of a Three-Dimensional Model as selected by the instructor.