

DFT 170 Engineering Graphics

COURSE DESCRIPTION:

Prerequisites: None

Corequisites: None

Offered: All

This course introduces basic engineering graphics skills and applications. Topics include sketching, selection and use of current methods and tools, and the use of engineering graphics applications. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices.

This course has been approved for transfer under the Uniform Articulation Agreement (UAA - Associate in Engineering - A10500) and Independent Comprehensive Articulation Agreement (ICAA).

Course Hours per Week: Class, 4. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Understand engineering graphics concepts.
2. Use engineering graphics to communicate an idea or design.
3. Sketch 3D Parts.
4. Become familiar with SolidWorks and as an engineering graphics tool.
5. Develop 3-D models of parts and assemblies.
6. Develop engineering drawings using orthogonal, auxiliary, section, detail, and isometric views.
7. Use dimensional information, including tolerance in engineering drawings.
8. Additive Manufacturing - 3D Printing Fundamentals
9. Be prepared to take the CSWA (Initial SolidWorks Certificate Exam).

OUTLINE OF INSTRUCTION:

1. Introduction to Engineering Graphics & SolidWorks
2. Line Types, Extrude and Pattern features
3. Scales, Orthographic views, Revolved features, Relationships
4. Flashlight Project
5. Isometric views, ribs, hole wizard, drawings
6. Section view, Lofts, Linear and Circular patterns
7. Auxiliary and Detail views, Sweeps
8. Assemblies, Sections views
9. Auxiliary views, Dimension Guidelines
10. Fits and Tolerances, Assembly Drawings
11. Design table, Guided Loft
12. Calipers, Additive Manufacturing 3D Printing Fundamentals
13. Lego Project

REQUIRED TEXTBOOK AND MATERIAL:

1. Engineering Graphics with SOLIDWORKS 2023. SDC Publications - ISBN: 978-1-63057-568-7.
2. Flash Drive
3. Good eraser, square, ruler and mechanical pencil.
4. Lego Kit - specs will be given by your instructor mid semester.
5. Caliper - will be provided - must return at the end of semester.
6. Architect and Engineering Scales - will be provided - must return at the end of semester.