

DFT 170
ENGINEERING GRAPHICS

COURSE DESCRIPTION

Prerequisites: None

Corequisites: None

This course introduces basic engineering graphics skills, equipment, and applications (manual and computer-aided). Topics include sketching, measurements, lettering, dimensioning, geometric construction, orthographic projections and pictorial drawings, and sectional and auxiliary views. Upon completion, students should be able to demonstrate an understanding of basic engineering graphics principles and practices. *This course has been approved to satisfy the Comprehensive Articulation Agreement for transferability as a pre-major and/or elective course requirement.* Course Hours Per Week: Class, 2. Lab, 2. Semester Hours Credit, 3.

COURSE OBJECTIVES:

Upon completion of this course the student will:

- a. Properly maintain and use the drawing instruments required for this course.
- b. Produce accurate, legible and complete multiview and pictorial drawings of 3-dimensional objects.
- c. Visualize, interpret and critique multiview and pictorial drawings.
- d. Apply dimensions and notes to multiview drawings in accordance with the practices set forth in ANSI (American National Standards Institute) standards.
- e. Construct the appropriate auxiliary and sectional views necessary to further clarify the interpretation of drawings of 3-dimensional objects.
- f. Apply appropriate graphic conventions to drawings as needed to simplify the construction of drawings and/or the interpretation of drawings.

OUTLINE OF INSTRUCTION:

- I. Lettering
 - A. Styles
 - B. Techniques
 - C. Alphabet of lines
- II. Drawing instruments and geometric construction
 - A. Use of drafting equipment
 - B. Drawing geometric shapes
 - C. Solving geometric problems
- III. Multiview projection
 - A. Possible views
 - B. Applications of multiview drawing
 - C. The 3-view drawing
 - D. Multiview sketching and shape description
 - E. Size description in the multiview drawing
 - F. Problems in multiview drawing

- IV. Dimensioning
 - A. Major dimensions
 - B. Detail dimensions
 - C. Locator dimensions
 - D. Dimensioning conventions
 - E. Applications of dimensions on multiview drawings

- V. Pictorial drawing types
 - A. Function of a pictorial
 - B. Isometrics
 - C. Obliques

- VI. Shop terms and processes
 - A. Geometric tolerancing
 - B. CAD drawing and CNC integrating
 - C. CAD modeling

- VII. Section drawing
 - A. Full sections
 - B. Half sections
 - C. Partial sections

- VIII. Auxiliary drawing
 - A. Methods of projection
 - B. True length line method

- IX. Working drawings
 - A. Required multiviews
 - B. Threads and fasteners
 - C. Pictorial assembly drawings
 - D. Dimensioning standards
 - E. Bill of materials

REQUIRED TEXTBOOKS AND MATERIALS:

To be announced

STATEMENT FOR STUDENTS WITH DISABILITIES:

Students who require academic accommodations due to any physical, psychological, or learning disability are encouraged to request assistance from a disability services counselor within the first two weeks of class. Likewise, students who potentially require emergency medical attention due to any chronic health condition are encouraged to disclose this information to a disability services counselor within the first two weeks of class. Counselors can be contacted by calling 686-3652 or by visiting the Student Development Office in the Phail Wynn Jr. Student Services Center, room 1309.