University of Arkansas - Fort Smith
5210 Grand Avenue
P. O. Box 3649
Fort Smith, AR 72913-3649
479-788-7000

General Syllabus

DFTG 2474 2D Computer-Aided Design (CAD) Fundamentals

Credit Hours: 4 **Lecture Hours:** 4 **Lab Hours:** 0

Prerequisite: None

Effective Catalog: 2023-2024

I. Course Information

A. Catalog Description

Introduction to CAD software and its uses for geometric construction, orthographic projection, section and auxiliary views, dimensioning, and drawing annotation. Students will create and use title blocks along with plotting drawings to specific scales.

B. Additional Information

This course is designed for all disciplines - architects, engineers, designers, or anyone who needs a thorough understanding of CAD software. This class begins with layout of the graphics screen and progresses through drawing simple graphics, using drawing aids, organizing drawings into layers, editing drawings, dimensioning drawings, plotting drawings, and setting up drawing templates.

II. Student Learning Outcomes

A. Subject Matter

Upon successful completion of this course, the student will be able to:

1. Utilize AutoCAD's interface to access the tools necessary to create multiple types of accurate drawings, such as orthographic views, section views, and auxiliary views.
2. Create and use a custom template for new drawings.
3. Properly dimension drawings to common industry standards.
4. Properly scale drawings (including dimensions and annotations) for printing using standard mechanical and architectural scales.
5. Control the appearance of items on the screen and/or on prints using layers.
6. Customize the AutoCAD interface to display specific tools to aid in creating drawings.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills--

Critical Thinking – Students will determine the most efficient way of creating drawings and preparing them for viewing and/or printing.

Quantitative Reasoning - Students will use dimensional data to properly locate items on their drawings and use existing dimensions to calculate any other needed dimensions.

I. Major Course Topics

A. Creating drawings utilizing American National Standards Institute (ANSI) requirements for:
   a. Line Conventions and Lettering
   b. Multiview, section view, and auxiliary view drawings
   c. Common drawing abbreviations
   d. Dimensions for all types of drawings
   e. Selecting appropriate types of projections

B. Printing to scale.

C. Dimensioning and annotating drawings correctly using national standards.

D. Using layers, linetypes, lineweights, and colors

E. Customizing options for the interface for ease of use

F. Using object snaps, ortho mode, and object snap tracking