Miami Dade College

Course Description

ARC2172| Computer Aided Drafting 2 | 4.00 credits

This course is designed for students with previous computer-aided design knowledge. Students will use both 2-dimensional and 3-dimensional CAD software to further develop their abilities to apply CAD techniques to the solution of architectural, engineering, and interior design problems. Prerequisite: ARC2171C. Laboratory fee.

Course Competencies

Competency 1: The student will demonstrate understanding of three-dimensional CAD functions by:

1. Managing the 3-dimensional display system utilizing the available commands and features of the software.
2. Defining points in space through 3-dimensional coordinate formats
3. Modeling simple objects from given information
4. Manipulating the view of 3-dimensional space by means of available command settings and camera positions

Competency 2: The student will demonstrate an understanding of the principles and mechanics associated with the creation of three-dimensional surface and solid models by:

1. Utilizing all available surface and solid modeling commands
2. Creating extruded 3-dimensional forms
3. Combining different forms to create a solid model
4. Setting the environment to generate the relative smoothness of the faces of a 3-dimensional model

Competency 3: The student will demonstrate an ability to manipulate editing commands as a means of enhancing, modifying or altering solid models by:

1. Learning the various editing commands available
2. Identifying the appropriate editing command to utilize for a specific modification
3. Applying editing commands to a solid form(s) to transform its shape and/or condition
4. Utilizing available methods of generating sections, plans, elevations, and 2-dimensional isometric outputs from a 3-dimensional model

Competency 4: The student will demonstrate an ability to enhance solid models with surface material and lighting for rendering by:

1. Utilizing principles of material creation and material assignment formats
2. Reproducing natural and artificial lighting conditions through software commands
3. Positioning and adjusting the camera at a target point to establish a view
4. Applying background environments and manipulating a scene for rendering purposes
5. Rendering views through different rendering formats and saving the files

Competency 5: The student will demonstrate an ability to print, plot or generate digital presentation of solid models by:

1. Save images from the models in different formats and rendering styles
2. Printing or plotting multiple views in various media with line weight accuracy
3. Producing a digital presentation of solid models or rendered scenes using presentation software

Learning Outcomes:

- Use quantitative analytical skills to evaluate and process numerical data
- Formulate strategies to locate, evaluate, and apply information
- Demonstrate an appreciation for aesthetics and creative activities