Miami Dade College

Course Description

ARC2180C| Introduction to 3D Building Modeling | 4.00 credits

An introduction to 3D building modeling and generative drafting as it applies to the fields of architecture and interior design. Students will learn current practices in 3D building design by emphasizing the manipulation of commands used for modeling, drawing, editing, dimensioning, basic drawing management, and drawing output. Prerequisites: ARC2172, CGS1060, MAC1105.

Course Competencies

Competency 1: Students will explore the theory of building information modeling by:

1. Comparing cad technology to BIM concepts
2. Exploring the 3d interface and the concept of sketching
3. Becoming familiar with the BIM interface and terminology
4. Starting a new project
5. Saving a project
6. Explaining techniques for backing up files and safeguards

Competency 2: The student will become familiar with the concept of building objects by:

1. Analyzing concepts of building object-based modeling
2. Becoming familiar with building objects such as: walls, floors, ceiling, windows, curtain walls and doors
3. Becoming familiar with the concept of families and nested families
4. Learning to edit object types, manipulate parameters and relationships between objects
5. Exploring dimensioning techniques and constraints

Competency 3: The student will become capable of organizing a project through constraints by:

1. Defining the levels in a project and creating relationships to those levels
2. Exploring reference planes and their ability to manage the design intent
3. Implementing grids and learning how to constrain on and off the grid

Competency 4: The student will become familiar with design information organization by:

1. Becoming familiar with components, categories, and subcategories
2. Learning about group basics
3. Learning about groups and links
4. Exploring dependent annotation views

Competency 5: Students will become familiar with design intent modeling by:

1. Exploring architecture, engineering, and construction domain's specific knowledge
2. Exploring the concepts of massing
3. Developing a building from a massing study
4. Importing design intent information for other cad software (interoperability)

Competency 6: The student will produce and publish project documentation by:

1. generating sheet views of plans, sections, elevations and perspectives from the model.
2. publishing 2d and 3d web format files such as DWF, and 3DXMI-type files.
3. generating tables, legends, schedules, calculating room values, room keys, and material takeoffs.
4. exploring the rendering capabilities of the authoring tool and preparing the model for export into other more advanced visualization tools.

Learning Outcomes:

- [illegible] on the environment