Western Technical College

10614106 Architectural CAD

Course Outcome Summary

Course Information

Description	Introduction of Architectural CAD commands and drafting techniques used to produce architectural drawings. Drawings are created using basic through advanced commands, settings, editing, dimensioning and plotting methods. Techniques include the creation of the building information model, families usage and sheet layouts.
Career Cluster	Architecture and Construction
Instructional Level	Associate Degree Courses
Total Credits	3
Total Hours	90

Textbooks

No textbook required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Increase Self-Awareness

Program Outcomes

1. Develop construction documents
2. Develop building designs
3. Integrate building systems

Course Competencies

1. Adhere to sound file management methods.

Criteria

You will know you are successful when

1.1. you import or open BIM files
1.2. you give proper file names to drawing files.
1.3. you save BIM files on the server site.
1.4. you save drawing files to student's personal memory stick.
1.5. you find and open drawing files.

Learning Objectives

1.a. Explain the reasons for proper file storage of Revit Building Information Models.
1.b. Understand the importance of proper file storage in an office environment.
1.c. Understand the importance of correctly archiving completed projects.
1.d. Identify file storage options for large Building Information Modeling (BIM) files.

2. Set up and begin using Sketch-Up.

Assessment Strategies

2.1. Portfolio

Criteria

You will know you are successful when

2.1. you compare and contrast SketchUp with other 3D software.
2.2. you evaluate the capabilities and limitations of SketchUp.
2.3. you explore the SketchUp Modeling window.
2.4. you explore the SketchUp Menu bar.
2.5. you explore the SketchUp Toolbars.
2.6. you explore the SketchUp Dialog boxes.
2.7. you explore the SketchUp Status bar.
2.8. you explore the SketchUp Context menus.

Learning Objectives

2.a. Identify how SketchUp is different from other 3D software.
2.b. Identify the capabilities of SketchUp.
2.c. Identify how to navigate the software.

3. Manage Sketch-Up project settings.

Assessment Strategies

3.1. Skill Demonstration

Criteria

You will know you are successful when

3.1. you modify software basic template to incorporate class parameters.
3.2. you demonstrate project contains completed project information.
3.3. you create a custom titleblock.
3.4. you demonstrate project contains a custom titleblock with labels.
3.5. you create a project template file.

Learning Objectives

3.a. Set up a project (.rvt)
3.b. Maintain a default project template file (.rte)

4. Model buildings and objects using Sketch-Up.

Assessment Strategies

4.1. Portfolio

Criteria

You will know you are successful when

4.1. you set up Sketch-Up to begin modeling.
4.2. you build a simple model.
4.3. you alter how the model appears by modifying its color, texture, style, and shadows.
4.4. you share the model with others by exporting it as a .SKP, .JPEG or PDF.

Learning Objectives

4.a. Explain how to set up Sketch-Up and change the default settings.
4.b. Construct simple building models.
4.c. Incorporate different ways to change the appearance of a model.
4.d. Create shadows for a model.

5. Incorporate Sketch-Up models in Google Earth and the 3DWarehouse.

Assessment Strategies

5.1. Presentation

Criteria

You will know you are successful when

5.1. you evaluate the use of SketchUp, Google Earth and the 3D Warehouse to serve your modeling needs.
5.2. you navigate in Google Earth.
5.3. you build a model in SketchUp for importing to Google Earth.
5.4. you acquire content from the 3D Warehouse.

Learning Objectives

5.a. Identify the relationship between SketchUp, Google Earth and the 3D Warehouse.
5.b. Identify the capabilities of Google Earth.
5.c. Identify the process for building SketchUp models for Google Earth.
5.d. Utilize object files from the 3D warehouse.

6. Incorporate annotation into Sketch-Up,

Criteria

You will know you are successful when

6.1. you create BIM that contains applicable graphic and text annotation.

Learning Objectives

6.a. Locate graphic and text files of standard building annotation.
6.b. Import graphic and text files of standard building annotation.
6.c. Incorporate annotation into a BIM.
6.d. Incorporate dimension styles into a BIM.
6.e. Generate schedules from a BIM.
6.f. Edit schedules through plan view or text view.
6.g. Tag rooms in the BIM project.

7. Develop construction details using 3D building elements.

Criteria

You will know you are successful when

7.1. you draw details at a useable scale.
7.2. you draw details using correct materials.
7.3. you draw details that include labels for all materials shown.
7.4. you print details to a useable scale.

Learning Objectives

7.a. Choose proper scales for details.
7.b. Create building elevations.
7.c. Create building sections.
7.d. Create wall sections.
7.e. Create drafting views.
7.f. Adjust view range of views created.
7.g. Details show proper delineation of materials.