Western Technical College

10614136 Architectural Building Information Management

Course Outcome Summary

Course Information

Description	This course is intended to introduce architectural students and experienced architectural drafters to the next generation in architectural design software. Students will study the process of blending traditional CAD files with parametric design software building information modeling methods as a means of transition. A hypothetical building project will be designed and documented to illustrate all aspects of Autodesk Revit software.
Career Cluster	Architecture and Construction
Instructional Level	Associate Degree Courses
Total Credits	2
Total Hours	72

Pre/Corequisites

Prerequisite	10614132 Architectural Drafting - Commercial
Prerequisite	10614134 Structural Drafting - Commercial

Textbooks

Design Integration Using Autodesk Revit 2022. Copyright 2021. Stine, Daniel John. Publisher: Schroff Development Corporation. **ISBN-13**: 978-1-63057-451-2. Required.

Success Abilities

1. Live Responsibly: Develop Resilience
2. Refine Professionalism: Improve Critical Thinking

Program Outcomes

1. Develop construction documents
2. Evaluate building materials
3. Develop building designs
4. Integrate building systems

Course Competencies

1. Explore various Building Information Modeling (BIM) software.

Assessment Strategies

1.1. Presentation

Criteria

You will know you are successful when

1.1. you prepare a report comparing and contrasting various BIM software features.
1.2. you summarize the trends of BIM usage.
1.3. you highlight the work of a firm that uses BIM software.
1.4. you lists the costs of various BIM software.

Learning Objectives

1.a. Identify differences between BIM softwares.
1.b. Quantify BIM usage in the industry.

2. Develop BIM schedules to extract data.

Criteria

You will know you are successful when

2.1. you filter building wall types.
2.2. you sort building wall types.
2.3. you create a schedule to quantify volume of concrete in a building foundation.
2.4. you create a schedule to quantify plumbing fixtures.
2.5. you create a schedule to quantify roofing materials.
2.6. you create a schedule to quantify square footage of all building wall types.
2.7. you identify a building material with recycle content and schedule to quantify total recyclable material units.

Learning Objectives

2.a. Filter BIM data.
2.b. Sort BIM data.
2.c. Use a schedule to calculate quantities.
2.d. Use a schedule for LEED evaluation.

3. Analyze various BIM families to understand their uses.

Criteria

You will know you are successful when

3.1. you locate BIM family category listings.
3.2. you describe two ways to access family categories.
3.3. you describe various categories and their uses.
3.4. you describe when to use 'Generic Models' category.

Learning Objectives

3.a. Identify family categories.
3.b. Identify criteria variables for family categories.
3.c. Access family categories.

4. Explore properties of object families.

Criteria

You will know you are successful when

4.1. you open up an existing object file (.rft).
4.2. you recognize element properties of an object file.
4.3. you observe object instance settings.
4.4. you observe object type settings.
4.5. you share observations with class.

Learning Objectives

4.a. Locate and open an existing family file in a BIM project.
4.b. Locate instance properties of a family object file.
4.c. Locate type properties of a family object file.

5. Edit existing family content.

Criteria

You will know you are successful when

5.1. you import an existing family from an outside website.
5.2. you place family into BIM project.
5.3. you edit object instance settings.
5.4. you edit object type settings.
5.5. you flex a family to look for inconsistencies until correct.
5.6. you save family object to a BIM project file.

Learning Objectives

5.a. Discover web sites for importing object families.
5.b. Incorporate new and imported object families into a BIM file.

6. Create new family content.

Criteria

You will know you are successful when

6.1. you create an object file.
6.2. you add parametric dimensions to a family object.
6.3. you add material representations to a family object.
6.4. you flex a family to look for inconsistencies until correct.
6.5. you save family object to a BIM project file.

Learning Objectives

6.a. Open correct family category file.
6.b. Determine appropriate dimensions to be locked.
6.c. Perform family flexing.
6.d. Incorporate parametric dimensions.
6.e. Create new material representations.

7. Compile BIM families into catalog content.

Criteria

You will know you are successful when

7.1. you identify websites of manufacturer's that provide building elements for construction products.
7.2. you identify manufacturer's product lines that do have Revit family content available.
7.3. you edit or create a parametric family element of a manufacturer's product.
7.4. you flex for inconsistencies until correct.
7.5. you compile various families into a document (.doc or .pdf) suitable for web posting or print distribution.

Learning Objectives

7.a. Explore how manufacturers provide product information for construction products.
7.b. Review marketing materials of manufacturer's product lines.

8. Organize family files.

Criteria

You will know you are successful when

8.1. you properly name a family file.
8.2. you post a family file to a server utilized by the class.
8.3. you create a budget that incorporates time spent and hourly fee for family content design.
8.4. you describe how a family file can be uploaded to a site similar to Revit City or AUGI.

Learning Objectives

8.a. Recognize the file characteristics of a Revit family file (.rfa).
8.b. Track time spent in creating a family file.