



Western Technical College

10614122 Architectural Drafting - Residential

Course Outcome Summary

Course Information

Description	This course combines architectural student's understanding of drafting principles with advanced design development concepts. Architectural styles, the importance of design components related to the building site and structure, as well as code requirements will be emphasized. Students will collaborate on conceptual designs of a single family residence and prepare a set of architectural working drawings using architectural design software.
Career Cluster	Architecture and Construction
Instructional Level	Associate Degree Courses
Total Credits	4
Total Hours	108

Pre/Corequisites

Prerequisite 10614109 Intro to Architectural Design

Textbooks

Residential Design Using Autodesk Revit 2024 – with Access. Copyright 2024. Stine, Daniel John. Publisher: Schroff Development Corporation. **ISBN-13**: 978-1-63057-578-6. Required.

Learner Supplies

Architectural Technology Kit. **Vendor**: Campus Shop. Required.

Success Abilities

1. Cultivate Passion: Increase Self-Awareness
2. Refine Professionalism: Practice Effective Communication

High Impact Practices

1. Community Based Learning Project: a key learning outcome of this course is to connect academic learning and civic development while simultaneously addressing a community partner's needs, interests, or problems.

Program Outcomes

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

Course Competencies

1. Use CAD/BIM software and manage files.

Assessment Strategies

- 1.1. Project

Criteria

You will know you are successful when

- 1.1. you employ proper file management procedures.
- 1.2. you use correct drawing and system settings.
- 1.3. you use proper procedures to draw walls, openings, symbols, floors and roofs.
- 1.4. you use annotation and dimensioning tools.
- 1.5. you prepare window and door schedules.
- 1.6. you set up sheets and print drawings to scale.

Learning Objectives

- 1.a. Employ proper file management procedures.
- 1.b. Use correct drawing and system settings.
- 1.c. Use proper procedures to draw walls, openings, symbols, floors and roofs.
- 1.d. Use annotation and dimensioning tools.
- 1.e. Prepare window and door schedules.
- 1.f. Use correct procedure to set up sheets and print drawings to scale.

2. Design service areas.

Assessment Strategies

- 2.1. Project

Criteria

You will know you are successful when

- 2.1. you design half bathroom sizes and space requirements for fixtures.
- 2.2. you design mud room sizes.
- 2.3. you design laundry room sizes and space requirements.
- 2.4. you arrange half bath, mud room and laundry room into a functional service area.

Learning Objectives

- 2.a. Explore various designs appropriate for half bathroom sizes and space requirements for fixtures.
- 2.b. Explore designs appropriate for mud room sizes.
- 2.c. Explore designs appropriate for laundry room sizes and space requirements.
- 2.d. Examine arrangements of half bath, mud room and laundry room for a functional service area.

3. Design bath rooms.

Assessment Strategies

- 3.1. Project

Criteria

You will know you are successful when

- 3.1. you design full bathroom sizes and space requirements for fixtures.
- 3.2. you design master bathrooms sizes and space requirements for fixtures.
- 3.3. you produce bathroom floor plans using CAD/BIM software.
- 3.4. you produce bathroom 3D views using CAD/BIM software.

Learning Objectives

- 3.a. Explore designs appropriate for full bathroom sizes and space requirements for fixtures.
- 3.b. Explore designs appropriate for master bathrooms sizes and space requirements for fixtures.
- 3.c. Investigate bathroom floor plans using CAD/BIM software.
- 3.d. Investigate bathroom 3D views using CAD/BIM software.

4. Design kitchens.

Assessment Strategies

- 4.1. Project

Criteria

You will know you are successful when

- 4.1. you design kitchens and space requirements for fixtures and appliances.
- 4.2. you determine the work triangle requirements for kitchen design.
- 4.3. you produce kitchen floor plans using CAD/BIM software.
- 4.4. you produce kitchen 3D views using CAD/BIM software.

Learning Objectives

- 4.a. Explore designs appropriate for kitchens and space requirements for fixtures and appliances.
- 4.b. Identify and describe the work triangle requirements for kitchen design.
- 4.c. Investigate kitchen floor plans using CAD/BIM software.
- 4.d. Investigate kitchen 3D views using CAD/BIM software.

5. Revise elevations of existing plan to reflect new style and details.

Assessment Strategies

- 5.1. Project

Criteria

You will know you are successful when

- 5.1. you recommend architectural details for specific architectural style.
- 5.2. you recommend opening types used for specific architectural style.
- 5.3. you modify design using CAD/BIM software to reflect changes.
- 5.4. you present modified drawings in specified format.

Learning Objectives

- 5.a. Identify appropriate architectural details for specific architectural style.
- 5.b. Identify suitable opening types for specific architectural style.
- 5.c. Determine revisions needed to existing plans.
- 5.d. Modify design using CAD/BIM software to reflect changes.

6. Evaluate space requirements for single family residential project.

Assessment Strategies

- 6.1. Project

Criteria

You will know you are successful when

- 6.1. you participate in client meeting.

- 6.2. you document project definition.
- 6.3. you identify a needs and wants list.
- 6.4. you document space requirements for project.

Learning Objectives

- 6.a. Document project definition.
- 6.b. Identify a needs and wants list.
- 6.c. Document space requirements for project.

7. Create a site analysis for specific single family residential site.

Assessment Strategies

- 7.1. Project

Criteria

You will know you are successful when

- 7.1. you develop a site base map.
- 7.2. you determine property lines.
- 7.3. you analyze the grade of specific site.
- 7.4. you investigate setbacks and other site restrictions.
- 7.5. you use online resources for site analysis.

Learning Objectives

- 7.a. Develop site base map.
- 7.b. Determine property lines.
- 7.c. Analyze the grade of specific site.
- 7.d. Investigate setbacks and other site restrictions.
- 7.e. Utilize online resources for site analysis.

8. Create schematic design for single family residential project.

Assessment Strategies

- 8.1. Project

Criteria

You will know you are successful when

- 8.1. you portray building footprint on site.
- 8.2. you create a floor plan design that includes required rooms of correct sizes.
- 8.3. you arrange rooms and spaces in a logical and organized plan.
- 8.4. you create a schematic design that has correct location of doors and windows.
- 8.5. you arrange floor plan proportions to allow for a realistic pitched roof design.

Learning Objectives

- 8.a. Portray building footprint on site.
- 8.b. Create a floor plan design that includes required rooms of correct sizes.
- 8.c. Arrange rooms and spaces in a logical and organized plan.
- 8.d. Create a schematic design that has correct location of doors and windows.
- 8.e. Arrange floor plan proportions to allow for a realistic pitched roof design.

9. Incorporate schematic design feedback in design development for single family residential project.

Assessment Strategies

- 9.1. Project

Criteria

You will know you are successful when

- 9.1. you incorporate appropriate feedback into design.
- 9.2. you create design development floor plans using CAD/BIM software.
- 9.3. you create design development exterior elevations using CAD/BIM software.
- 9.4. you create design development typical wall section.

Learning Objectives

- 9.a. Incorporate appropriate feedback into design.
- 9.b. Create design development floor plans using CAD/BIM software.
- 9.c. Create design development exterior elevations using CAD/BIM software.
- 9.d. Create design development typical wall section.

10. Create set of construction documents for single family residential project.

Assessment Strategies

- 10.1. Project

Criteria

You will know you are successful when

- 10.1. you create construction documents using CAD/BIM software.
- 10.2. you organize and format construction documents according to class requirements
- 10.3. you create annotated and dimensioned plan views.
- 10.4. you create annotated exterior elevations.
- 10.5. you create annotated section views.
- 10.6. you create schedules as project requires.
- 10.7. you complete project on time.

Learning Objectives

- 10.a. Create construction documents using CAD/BIM software.
- 10.b. Create construction documents organized and formatted according to class requirements.
- 10.c. Create annotated and dimensioned plan views.
- 10.d. Create annotated exterior elevations.
- 10.e. Create annotated section views.
- 10.f. Create schedules as project requires.
- 10.g. Complete project on time.

11. Critique architectural designs.

Assessment Strategies

- 11.1. Critique

Criteria

You will know you are successful when

- 11.1. you evaluate design concepts.
- 11.2. you critique other's architectural designs.
- 11.3. you accept critiques from others.
- 11.4. you analyze critique feedback.
- 11.5. you incorporate formative feedback into design.

Learning Objectives

- 11.a. Evaluate design concepts.
- 11.b. Critique other's architectural designs.
- 11.c. Accept critiques from others.
- 11.d. Analyze critique feedback.
- 11.e. Incorporate appropriate feedback into design.

12. Develop architectural presentations.

Assessment Strategies

- 12.1. Presentation

Criteria

You will know you are successful when

- 12.1. you prepare architectural presentation drawings or models.
- 12.2. you create interior 3D renderings.
- 12.3. you create exterior 3D renderings.
- 12.4. you explain design to others.

Learning Objectives

- 12.a. Prepare architectural presentation drawings or models.

- 12.b. Create interior 3D renderings.
- 12.c. Create exterior 3D renderings.
- 12.d. Explain design to others.