Western Technical College

10614142 Architectural Capstone

Course Outcome Summary

Course Information

Description	This advanced course offers architectural students the opportunity to incorporate content from the first three semesters while focusing on personal interests within the field of architecture. Students will begin projects as preliminary building program proposals, further refine them through the design phase, and then develop them into construction documents which could include outline specifications, material estimates and working drawings.
Career Cluster	Architecture and Construction
Instructional Level	Associate Degree Courses
Total Credits	4
Total Hours	126

Pre/Corequisites

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

Textbooks

No textbook required.

Learner Supplies

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

Success Abilities

1.   Cultivate Passion: Enhance Personal Connections

2.   Cultivate Passion: Expand a Growth-Mindset

Program Outcomes

1.   Develop construction documents

2.   Evaluate building materials

3.   Develop building designs

4.   Integrate building systems

Course Competencies

1.   Select Capstone project.

Assessment Strategies
1.1.   Written Product

Criteria

You will know you are successful when

1.1.   you identify a Capstone project.
1.2.   you prepare a Capstone project contact sheet.
1.3.   you list project goals.
1.4.   you list project deliverables.

Learning Objectives
1.a.   Compare and contrast various Capstone projects available.
1.b.   Identify Capstone project and client.
1.c.   Select project site.
1.d.   Determine if project scope corresponds with syllabus project scope.

2.   Develop building program.

Assessment Strategies
2.1.   Product

Criteria

You will know you are successful when

2.1.   you create a programming document.
2.2.   you collect graphic representations of design ideas to be considered for inclusion into the project.
2.3.   you lead and document the client interview.
2.4.   you communicate regularly with client to address design ideas and constructive criticism.
2.5.   you review and/or modify programming statements based on client comments.

Learning Objectives
2.a.   Compile questions for a client programming meeting.
2.b.   Document client discussions with meeting minutes.
2.c.   Prepare a program space list.
2.d.   Determine required space adjacencies.

3.   Analyze project site.

Assessment Strategies
3.1.   Product

Learning Objectives
3.a.   Document relevant site information.
3.b.   Analyze site context.
3.c.   Prepare site analysis document.

4. **Analyze applicable codes and regulations.**

Assessment Strategies

4.1.   Product

Criteria

You will know you are successful when

4.1.   you compare and contrast CAD/BIM software options as they relate to the Capstone project.
4.2.   you select appropriate CAD/BIM software based on evaluation and comparison.
4.3.   you install software programs necessary to fulfill project deliverables.
4.4.   you create a spreadsheet that tracks time by task.
4.5.   you create a meeting/telephone sheet for documenting all conversations and meetings incurred.

Learning Objectives

4.a.   Determine which codes and regulations apply to project.
4.b.   Identify important information that will impact project design.
4.c.   Prepare code analysis document.

5. **Evaluate sustainability strategies.**

Assessment Strategies

5.1.   Product
5.2.   Project

Learning Objectives

5.a.   Compare sustainability rating systems.
5.b.   Analyze which sustainability strategies are most appropriate to project.
5.c.   Implement appropriate sustainability strategies in project.

6. **Develop Capstone project design.**

Assessment Strategies

6.1.   Project

Criteria

You will know you are successful when

6.1.   you document design ideas by sketching and taking notes during client planning meetings.
6.2.   you organize spaces to meet functional requirements.
6.3.   you create aesthetically pleasing building forms.
6.4.   you prepare schematic designs for a building project.
6.5.   you produce documents such as preliminary plans/elevations, perspectives, or renderings.

Learning Objectives

6.a.   Document design ideas by sketching and taking notes during client planning meetings.
6.b.   Organize spaces to meet functional requirements.
6.c.   Create aesthetically pleasing building forms.
6.d.   Prepare schematic designs for a building project.
6.e.   Produce documents such as preliminary plans/elevations, perspectives, or renderings.

7. **Develop architectural construction documents.**

Assessment Strategies

7.1.   Project

Criteria

You will know you are successful when

7.1.   you prepare a set of plans for checking purposes.
7.2.   you prepare a set of plans for construction purposes.
7.3.   you check plans for accuracy.
7.4.   you check plans for completeness.
7.5.   you verify that plans meet project and Capstone goals.
7.6.   you maintain a project file site for active and backup computer files.

Learning Objectives

7.a.   Create Floor Plans for all occupied levels.

7.b.   Create Exterior Elevations of all facades. (Or, Interior elevations for all relevant elevations if an interior only project.)

7.c.   Create a building section.

7.d.   Create a typical wall section.

7.e.   Create an enlarged construction section detail, (for example roof edge, or window sill, etc.)

7.f.   Create a schedule. (For example, window, door, or room finish schedule.)

8. Incorporate structural systems into project.

Assessment Strategies

8.1.   Project

Criteria

You will know you are successful when

8.1.   you evaluate appropriate structural systems for building type.

8.2.   you use structural references to size structural elements.

8.3.   you analyze structural loads as they are transferred through the structure of a building.

Learning Objectives

8.a.   Evaluate appropriate structural systems for building type.

8.b.   Analyze structural loads as they are transferred through the structure of a building.

8.c.   Utilize structural references to size structural elements.

9. Integrate building systems into project.

Assessment Strategies

9.1.   Project

Criteria

You will know you are successful when

9.1.   you prepare preliminary heating and cooling load calculations.

9.2.   you select a system that will work appropriately.

9.3.   you prepare schematic design drawings of required systems.

9.4.   you refine system details.

9.5.   you check plans for accuracy.

9.6.   you check plans for completeness.

Learning Objectives

9.a.   Evaluate appropriate systems for building type and building site.

9.b.   Integration of systems into the building to avoid conflicts.

10. Evaluate appropriate building materials for project.

Assessment Strategies

10.1.   Project

Criteria

You will know you are successful when

10.1.   you research materials for appropriate uses.

10.2.   you prepare an outline specification of the project.

10.3.   you refine an outline specification to a three part specification.

10.4.   you align specifications with working drawings and notes.

Learning Objectives

10.a.   Review options for building materials.

10.b.   Select appropriate building materials.

11. Estimate the construction cost for the project.

Assessment Strategies

11.1.   Product

Criteria

You will know you are successful when

11.1.   you discuss a budget with the project client.
11.2.   you prepare a budget scope of the proposed budget.
11.3.   you prepare a material quantity take-off for the project.
11.4.   you assign costs and extends to develop an overall project cost.

Learning Objectives

11.a.   Select appropriate estimating resources.
11.b.   Prepare accurate quantity take-off.

12.   Develop an architectural presentation.

Assessment Strategies

12.1.   Presentation
12.2.   Drawing/Illustration

Criteria

You will know you are successful when

12.1.   you create a three dimensional color rendering or a physical model.
12.2.   you create presentation copies of project drawings.
12.3.   you prepare a verbal presentation of project.
12.4.   you conduct project presentation in front of audience.

Learning Objectives

12.a.   Create a three dimensional color rendering or a physical model.
12.b.   Create presentation copies of project drawings.
12.c.   Prepare a verbal presentation of project.
12.d.   Conduct project presentation in front of audience.

13.   Organize project deliverables.

Assessment Strategies

13.1.   Portfolio

Criteria

You will know you are successful when

13.1.   you document time spent on project with timesheets.
13.2.   you compile project documentation into a binder/portfolio.
13.3.   you compile presentation drawings into a binder/portfolio.

Learning Objectives

13.a.   Document time spent on project with timesheets.
13.b.   Compile project documentation into a binder/portfolio.
13.c.   Compile presentation drawings into a binder/portfolio.

14.   Assess Capstone project experience.

Assessment Strategies

14.1.   Self Assessment
14.2.   Reflection

Criteria

You will know you are successful when

14.1.   you evaluate the Capstone project performance.
14.2.   you reflect on the Capstone project experience.

Learning Objectives

14.a.   Evaluate student's Capstone project performance.
14.b.   Examine Capstone project experience.