

College of San Mateo
Official Course Outline

1. **COURSE ID:** ARCH 225 **TITLE:** Making Architecture: Building Methods, Materials & Design Build 1
Units: 3.0 units **Hours/Semester:** 32.0-36.0 Lecture hours; 48.0-54.0 Lab hours; and 64.0-72.0 Homework hours

Method of Grading: Letter Grade Only

Prerequisite: ARCH 120, Completion of or concurrent enrollment in ARCH 140 and ARCH 210.

2. **COURSE DESIGNATION:**

Degree Credit

Transfer credit: CSU

3. **COURSE DESCRIPTIONS:**

Catalog Description:

Introduction to the terminology, principles, and materials of construction and building components within the context of the design & build process in architecture. Emphasis on the origin, history, nature and application of both traditional and emergent materials and processes in building construction. Includes discussion of sustainable materials and methods in construction and fundamental principles of stability and form in buildings. Term project is a student team or individual design-build project. Additional supplies and fees may be required.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**

Upon successful completion of this course, a student will meet the following outcomes:

1. Describe common methods and materials used in building construction using professionally appropriate terminology and vocabulary.
2. Discuss the attributes, potentials, and limitations of various building methods and materials.
3. Use available resources to carry out research on building methods and materials.
4. Use selected building materials to execute a basic temporary demonstration design & build term project assignment.
5. Describe the environmental design process as applied to a specific design-build opportunity in which the student has participated.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**

Upon successful completion of this course, a student will be able to:

1. Describe common methods and materials used in building construction using professionally appropriate terminology and vocabulary.
2. Discuss the attributes, potentials, and limitations of various building methods and materials.
3. Use available resources to carry out research on building methods and materials.
4. Use selected building materials to execute a basic temporary demonstration design & build term project assignment.
5. Describe the environmental design process as applied to a specific design-build opportunity in which the student has participated.

6. **COURSE CONTENT:**

Lecture Content:

Materials of construction (SLO/objective 1, 2, 3, 4, 5)

Concrete

Masonry

Metals

Wood

Glass

Additional materials

Components/elements of buildings and systems (SLO/objective 1, 2, 3, 4, 5)

Foundations

Roofs

Walls

Doors

Windows

Stairs
Framing types

Emergent sustainable/green building practices (SLO/objective 1, 2, 3)

Lab Content:

Design-Build studio project (SLO/objective 4, 5)

7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Lab
- C. Activity
- D. Critique
- E. Observation and Demonstration

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

Writing assignments include a combination of short answers to questions and short (1 to 3 page) papers that demonstrate understanding of the information presented in lecture and in reading assignments.

Writing assignments may include one or more longer research papers requiring additional research on a specific material, method of construction, or related topic.

Reading Assignments:

Selected readings from the text will be assigned throughout the course. Students will also be asked to read various types of documents freely available in the library and on the internet. Additional readings may include professional papers, catalog and other supplier-provided information, portions of building codes and regulatory documents.

Other Outside Assignments:

Additional student work assigned outside of class hours may include preparation of in-class presentations on construction materials and building systems, preparation of student-led demonstrations of construction methods, and site visits to existing buildings and buildings under construction.

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Class Participation
- B. Exams/Tests
- C. Oral Presentation
- D. Papers
- E. Projects
- F. Research Projects
- G. Individual or team presentations/demonstrations of construction methods. Individual or team presentations of research project. Instructor review of the oral, graphic, written or constructed presentations required as part of the design-build term assignment & through a summary presentation as part of the student's project portfolio.

10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Mehta, M., W. Scarborough, D. Arm Priest. *Building Construction: Principles, Materials, and Systems*, 2nd ed. Prentice-Hall, 2013
- B. Ching, F.D.K.. *Building Construction Illustrated*, 5th ed. Wiley, 2014

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