

Course Outline of Record

1. Course Code: ARCH-002
2.
 - a. Long Course Title: Materials Of Construction
 - b. Short Course Title: MATERIALS/CONSTRUCTN
3.
 - a. Catalog Course Description:

This course is an introduction to construction materials and processes. Lab demonstrations in construction techniques and field trips to construction sites are utilized to assist students' understanding of construction principles and practices. Emphasis on the selection of materials in a design context helps develop students' spatial and three dimensional skills.
 - b. Class Schedule Course Description:

This course is an introduction to the materials and methods of construction used in the building industry.
 - c. Semester Cycle (if applicable): Fall/Spring
 - d. Name of Approved Program(s):
 - ARCHITECTURAL TECHNOLOGY
4. Total Units: 4.00 Total Semester Hrs: 108.00
 Lecture Units: 3 Semester Lecture Hrs: 54.00
 Lab Units: 1 Semester Lab Hrs: 54.00
 Class Size Maximum: 28 Allow Audit: No
 Repeatability No Repeats Allowed
 Justification 0
5. Prerequisite or Corequisite Courses or Advisories:

Course with requisite(s) and/or advisory is required to complete Content Review Matrix (CCForm1-A)

 Advisory: ENG 070
6. Textbooks, Required Reading or Software: (List in APA or MLA format.)
 - a. Allen, E. (2014). *Fundamentals of Building Construction: Materials & Methods* (6th/e). New York Wiley & Sons, Inc.. ISBN: 0-471-21903-7
 College Level: Yes
 Flesch-Kincaid reading level: 13.67
 - b. a. Current California Building Code
b. Sweet's General Building & Renovation Catalog File, Current Edition
7. Entrance Skills: *Before entering the course students must be able:*
 - a. Identify and employ prewriting activities.
 - ENG 070 - Read and identify main ideas and supporting details.
 - b. Formulate topic sentences, compose coherent paragraphs and create theses.
 - ENG 070 - Identify and employ transitions and connectors to show unity between ideas.
 - c. Demonstrate the ability to generate, develop and organize ideas into a cohesive essay using two or three paragraphs.
 - ENG 070 - Demonstrate through the writing process the ability to apply standard rules of grammar, punctuation and spelling in academic writing.
 - d. Demonstrate the ability to apply standard rules of grammar, punctuation and spelling in academic writing.
 - ENG 070 - Demonstrate the ability to produce several drafts of essays through a series of revisions using a computer.
8. Course Content and Scope:

Lecture:

1. The Building Process and the professionals involved.
2. Contrast Methods of Balloon Framing and Platform Framing
3. Platform Framing: Foundation, Floor, Walls
4. Platform Framing: Rafter, Sheathing
5. Platform Framing: Roofing, Windows, Doors
6. Platform Framing: Siding, Exterior Details
7. Platform Framing: Mechanical, Electrical
8. Platform Framing: Thermal Insulation
9. Platform Framing: Interior Finishes
10. Light gauge metal framing
11. Structural steel framing

Lab: (if the "Lab Hours" is greater than zero this is required)

- a. Soils, Excavation b. Foundation Types c. Wood, and Wood Products d. Masonry: Mortar and Brick e. Masonry: Stone and Concrete Masonry f. Masonry: Bearing Wall Construction g. Masonry: Use in Passive heating and Cooling

9. Course Student Learning Outcomes:

1. Explain the principles and performance characteristics of common building materials.
2. Differentiate between conventional materials of construction and "green" building materials
3. Recognize the construction method used to assemble a building.

10. Course Objectives: *Upon completion of this course, students will be able to:*

- a. Select appropriate building materials based on design, climate and site conditions.
- b. Compare the thermal properties of various building materials.
- c. Design building sections and evaluate their performance based on climate.
- d. Explain the principles, and performance characteristics of common building materials, i.e.: concrete, wood, masonry products, steel, glass and thermal insulation.
- e. Compare and contrast local costs of various building materials.
- f. Demonstrate the ability to cross-reference building materials to local building codes.
- g. Research building materials in SWEET'S CATALOG FILE: (classroom or library edition).

11. Methods of Instruction: *(Integration: Elements should validate parallel course outline elements)*

- a. Collaborative/Team
- b. Demonstration, Repetition/Practice
- c. Discussion
- d. Laboratory
- e. Lecture
- f. Participation
- g. Role Playing
- h. Technology-based instruction

Other Methods:

Site Visits (Field Trips): Study Topic Oriented

12. Assignments: *(List samples of specific activities/assignments students are expected to complete both in and outside of class.)*

In Class Hours: 108.00

Outside Class Hours: 108.00

a. In-class Assignments

- a. Conduct semester-long study of sustainable material or method of construction b. Complete library eResearch assignment c. Group Project d. Informative Paper Outline

b. Out-of-class Assignments

- a. Chapter Questions and Definitions b. Group Project c. Semester Informational Paper d. Material of

Construction Method Presentation

13. Methods of Evaluating Student Progress: *The student will demonstrate proficiency by:*

- Written homework
Typed Assignments from Text
- Critiques
CRITS: Critique of Student’s Project Assignments
- Term or research papers
- Presentations/student demonstration observations
a. Informative Paper and Project Presentation b. Oral Presentation
- Group activity participation/observation
Group Project
- True/false/multiple choice examinations
Topic Exams

14. Methods of Evaluating: Additional Assesment Information:

15. Need/Purpose/Rationale -- *All courses must meet one or more CCC missions.*

PO - Career and Technical Education

- Fulfill the requirements for an entry- level position in their field.
- Apply critical thinking skills to execute daily duties in their area of employment.
- Apply critical thinking skills to research, evaluate, analyze, and synthesize information.
- Display the skills and aptitude necessary to pass certification exams in their field.
- Exhibit effective written, oral communication and interpersonal skills.
- Transfer to a higher level learning institution

IO - Critical Thinking and Communication

- Apply principles of logic to problem solve and reason with a fair and open mind.
- Compose and present structured texts in a variety of oral and written forms according to purpose, audience, and occasion with implementation of thesis, supporting details and idea development.
- Appreciate diversity as it is expressed in multiple disciplines and across various cultures through reading, speaking and writing.
- Conduct research, gather and evaluate appropriate information, organize evidence into oral and written presentation, using proper MLA, APA, and other discipline-specific formats to cite sources.
- Summarize, analyze, and interpret oral and written texts, with the ability to identify assumptions and differentiate fact from opinion.
- Utilizing various communication modalities, display creative expression, original thinking, and symbolic discourse.

16. Comparable Transfer Course

University System	Campus	Course Number	Course Title	Catalog Year
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17. Special Materials and/or Equipment Required of Students:

Basic Drawing Tools: a. Drawing Pencils b. Felt-Tip Pens c. Triangles d. Sketching Paper e. Calculator f. Architectural Scale g. Compass

18. Materials Fees: Required Material?

Material or Item	Cost Per Unit	Total Cost
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ARCH 002-Materials Of Construction

19. Provide Reasons for the Substantial Modifications or New Course:

Change advisory from ENG-050 to ENG-070.

20. a. Cross-Listed Course (*Enter Course Code*): N/A
b. Replacement Course (*Enter original Course Code*): N/A

21. Grading Method (*choose one*): Letter Grade Only

22. MIS Course Data Elements

- a. Course Control Number [CB00]: CCC000303372
b. T.O.P. Code [CB03]: 20100.00 - Architecture and Architec
c. Credit Status [CB04]: D - Credit - Degree Applicable
d. Course Transfer Status [CB05]: B = Transfer CSU
e. Basic Skills Status [CB08]: 2N = Not basic skills course
f. Vocational Status [CB09]: Possibly Occupational
g. Course Classification [CB11]: Y - Credit Course
h. Special Class Status [CB13]: N - Not Special
i. Course CAN Code [CB14]: N/A
j. Course Prior to College Level [CB21]: Y = Not Applicable
k. Course Noncredit Category [CB22]: Y - Not Applicable
l. Funding Agency Category [CB23]: Y = Not Applicable
m. Program Status [CB24]: 1 = Program Applicable

Name of Approved Program (*if program-applicable*): ARCHITECTURAL TECHNOLOGY

Attach listings of Degree and/or Certificate Programs showing this course as a required or a restricted elective.)

23. Enrollment - Estimate Enrollment

First Year: 28
Third Year: 28

24. Resources - Faculty - Discipline and Other Qualifications:

- a. Sufficient Faculty Resources: Yes
b. If No, list number of FTE needed to offer this course: N/A

25. Additional Equipment and/or Supplies Needed and Source of Funding.

N/A

26. Additional Construction or Modification of Existing Classroom Space Needed. (*Explain:*)

N/A

27. FOR NEW OR SUBSTANTIALLY MODIFIED COURSES

Library and/or Learning Resources Present in the Collection are Sufficient to Meet the Need of the Students Enrolled in the Course: Yes

28. Originator Donbert M. Bitanga Origination Date 02/13/15