

CATALOG INFORMATION

Dept and Nbr: CONS 71 Title: MATERIALS & METHODS
Full Title: Materials and Methods of Construction
Last Reviewed: 3/13/2012

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	17.5	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable
Grading: Grade Only
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:

Catalog Description:
An investigation of common building materials and methods of using them, including: code restrictions, foundations; wood (heavy timber and wood light frame); masonry (brick, concrete block, and stone); steel; site-cast concrete; pre-cast concrete; pre-stressed concrete; roofing; glass; and cladding.

Prerequisites/Corequisites:
Completion or concurrent enrollment in CONS 80B or equivalent.

Recommended Preparation:

Limits on Enrollment:

Schedule of Classes Information:
Description: Common building materials and methods of using them, including wood, masonry, steel, site-cast concrete, pre-cast concrete, roofing, glass and cladding. (Grade Only)
Prerequisites/Corequisites: Completion or concurrent enrollment in CONS 80B or equivalent.
Recommended:
Limits on Enrollment:

Transfer Credit: CSU;
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	Area	Effective:	Inactive:
CSU GE:	Transfer Area	Effective:	Inactive:
IGETC:	Transfer Area	Effective:	Inactive:
CSU Transfer:	Transferable	Effective: Fall 1981	Inactive: Fall 2019
UC Transfer:		Effective:	Inactive:

CID:

Certificate/Major Applicable:
Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

The students will:

1. Demonstrate basic code knowledge.
2. Describe relationship between soils and foundation types.
3. Understand the use of wood in buildings, heavy timber and wood frame.
4. Distinguish uses and ways of applying various types of masonry (brick, concrete block and stone).
5. Demonstrate comprehension of steel frame building systems.
6. Describe the process of cement manufacturing and concrete design criteria.
7. Understand the role of re-inforcing in concrete.
8. Diagram the use of pre-stressing of steel in concrete.
9. List advantages and disadvantages of site cast and precast concrete.
10. Describe the role of vapor barriers.
11. Outline the application of flat and pitched roofing materials.
12. Describe application of glazing in a building.
13. Briefly describe cladding concept for high-rise buildings.

Topics and Scope:

1. Building process and code.
2. Soils and excavation.
3. Foundations.
4. Wood and wood products.
5. Heavy timber framing.
6. Platform framing.
7. Mortar and brick.
8. Stone and concrete block.
9. Bearing wall construction.

10. Steel and steel framing connections.
11. Shear and moment connections.
12. Cement and concrete.
13. Concrete formwork and re-inforcing.
14. Pre and post tensioning.
15. 1-way and 2-way site cast systems.
16. Precast concrete elements and assembly.
17. Precast connections.
18. Water vapor and retarders.
19. Flat roofs.
20. Pitched roofs.
21. Glass and glazing.
22. Cladding concepts.

Assignment:

1. Readings with written questions.
2. Exercises to apply information to specific situations.
3. Report on a material or method of construction.
4. Outlines of chapters in the text.

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Written homework, Term papers, CHAPTER OUTLINES

Writing
20 - 50%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, Quizzes, Exams, APPL OF PRINCIPLES IN EXERCISE, INCL CALCULATIONS

Problem solving
30 - 40%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations
0 - 0%

Exams: All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion, SKETCHES

Exams
20 - 30%

Other: Includes any assessment tools that do not logically fit into the above categories.

CLASS PARTICIPATION

Other Category 0 - 10%

Representative Textbooks and Materials:

FUNDAMENTALS OF CONSTRUCTION by Allen. 2nd edition, 1994

EXERCISES IN BUILDING CONSTRUCTION by Allen and Spruill. 1994