California Polytechnic State University, San Luis Obispo

Construction Management Department

CM 114-02, Construction Materials and Assemblies, FALL - 2020

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Office Hours:	T, TH, 9:00 am – 12:00pm
Class Days/Times:	Monday and Wednesday 9 :10 am to 12:00 pm
Classroom:	Bldg. 21-Room 17 (Concrete Laboratory)
Prerequisite(s):	Recommended CM 102 - Introduction to Construction Management

Course Description

Exploration of the various materials, assemblies, and processes used and applied in the building construction process. Includes presentation, discussion, analysis, study and research of construction materials and assemblies. 2 laboratories.

Course Goals and Learning Outcomes

Course Goals:

- Understanding the types of materials commonly used in construction
- Understanding how to identify material properties
- Knowing the different types of materials used in construction projects

Course Learning Outcomes (CLOs):

1. Define, classify, describe, and explain the basic construction materials used in the residential, commercial, and heavy civil building process.
2. Recognize, identify, illustrate, and employ the various basic construction assemblies in rudimentary residential, commercial, and heavy civil building process applications.
3. Recall and acknowledge the basic raw material and properties of said materials in the use and application of them in construction building materials.
4. Explain and describe how these basic construction materials (when assembled together) affect the overall building from a thermal, structural, and constructability standpoint.

Student and Program Learning Outcomes

The American Council for Construction Education (ACCE) is the accrediting body for Cal Poly's construction management program. The ACCE requires achievement of 20 student learning

outcomes(SLOs). The construction management program has identified 20 program learning outcomes (PLOs) that equal or exceed the ACCE SLOs and 5 additional idiosyncratic PLOs.

This course supports the following PLOs:

PLO 8: Analyze methods, materials, and equipment used to construct projects.

Topical Outline, Outcomes, and Method of Assessment

This course has embedded assessment instruments for the PLO(s) listed below:

PLO 1: Written Communication
PLO 8: Analyze methods, materials, and equipment used to construct projects.

An overview of content, course learning outcomes, program learning outcomes, instructional activities, and assessment measures, is listed in the table below.

Choose Unit Type	**Topical Outline**	**CLOs**	**PLOs**	**Instructional Activities**	**Method of Assessment**
WK #1	Orientation & Safety Training, Survey of Construction Materials, Preparation of Lumber Assemblies Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #2	Aggregate Materials Testing, Concrete Batching	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #3	Lumber Assemblies Testing, Concrete batching & Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #4	Lumber Material Testing, Concrete Batching & Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment, Quiz
WK #5	Tension Test of Materials, Concrete Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #6	Form Fabrication & Concrete Testing-Anchor Bolts, Concrete Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #7	Concrete Drilling & Anchor Bolt Installation, Concrete Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment
WK #8	Concrete Testing, Anchor Bolt Pull-Test	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment, Quiz
WK #9	Construction Assemblies Preparation & Testing, Masonry Materials Testing	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Assignment

Choose Unit Type	Topical Outline	CLOs	PLOs	Instructional Activities	Method of Assessment
WK #10	Concrete Testing, Report Preparation	1, 2, 3, 4	1, 8	Lecture, Team based exercise, Lab	Exam

Required Texts/Reading

Textbook

CM 114 Laboratory Manual – Electronic version available in Canvas

Other Readings

Recommended:

CP-1(13) Technical Workbook for ACI Certification of Concrete Field Testing Technician-Grade 1 (American Concrete Institute Publication Order Code: CP113)

Other Equipment/Material Requirements

Calculator, flash drive, engineering paper, laptop computer, set of colored pencils or highlight markers, Engineering Scale

Classroom Protocol

As a student, you are responsible to:

Always arrive on time

- Do not chatter or whisper to fellow students during a lecture or other inappropriate times (please share with the class your comment or concern).
- Do not read newspapers, books, or do homework for another class during lectures.
- Turn off your cell phone and close laptop during discussions and lectures.
- No eating in class during lectures and discussions.
- If you are, in the opinion of the instructor, disrupting class you will be asked to leave the room.

Laboratory sessions will also combine reading assignments with lectures and class discussions. Students are expected to have completed the assigned reading before to coming to laboratory. Students are encouraged to participate in class discussions and to bring in subjects related to the class of personal importance to them for further discussion.

Assignments and Exams

The following assignments and their associated point values are subject to change by the instructor as needed.

Description	Points
Quizzes	40
Intermediate Lab Reports	30
Attendance	20
Final Comprehension Lab Report	70
Final Exam	100
Total Points Possible	**260**

Late/Missed Work and Make-Up Policy

Late Assignments: Assignments will be accepted late up to a week past the due date but will only receive ½ credit. Afterwards, no lab assignments will be accepted.
Make-up Assignments: No make-up assignment, or quizzes will be permitted with-out acceptable written notification prior to the event.

Grading Policy

Failure to attend a scheduled exam or in class assignment will result in a grade of 0. Make up quizzes and exams will not be given unless you notify the instructor of a documented, excusable absence in advance. Exam make-ups will be given only under special circumstances. You must make your arrangements with your instructor prior to the exam date.

Listed below is the grading scale for this course.

Letter Grade	Percentage	Performance	Definition
A	93 – 100%	Excellent Work	Superior Attainment of Course Learning Outcomes
A-	90 – 92%	Mostly Excellent Work	
B+	87 – 89%	Very Good Work	Good Attainment of Course Learning Outcomes
B	83 – 86%	Good Work	
B-	80 – 82%	Mostly Good Work	
C+	77 – 79%	Very Acceptable Work	Acceptable Attainment of Course Learning Outcomes
C	73 – 76%	Acceptable Work	
C-	70 – 72%	Mostly Acceptable Work	
D+	67 – 69%	Mostly Poor Work	

Letter Grade	Percentage	Performance	Definition
D	63 – 66%	Poor Work	Poor Attainment of Course Learning Outcomes
D-	60 – 62%	Very Poor Work	
F	0 – 59%	Failing Work	Non-Attainment of Course Learning Outcomes

University Policies

Participation and Attendance

Students are expected to attend all class sessions. The instructor is to be contacted prior to a missed class.

Students are responsible for knowing the University policy regarding class attendance. See this link on Class Attendance Policy: https://academicprograms.calpoly.edu/academicpolicies/class-attendance provided on the university website.

Add/Drop Policy

Students are responsible for knowing the University policies, procedures, and schedule for dropping or adding classes. See this link on Add/Drop Policy: https://registrar.calpoly.edu/drops-withdraws-and-leaves provided on the university website.

Academic Integrity

Students are responsible for knowing the Academic Honesty Policy: https://osrr.calpoly.edu/academic-integrity .

Accessibility & Support Resources

It is my intent that everything in this class shall be accessible for all participants. Cal Poly is committed to serving our students, and has stated this goal in the Accessibility Statement: http://www.accessibility.calpoly.edu/Links to an external site.

If you have any questions or concerns about alternate media, accessible technology or other assistive measures, and you would prefer to speak directly with a campus representative, I encourage you to visit the Disability Resource Center website: https://drc.calpoly.edu/ which has current hours and contact information for the helpful staff there.

Persons who wish to request disability-related accommodations should contact the Disability Resource Center https://drc.calpoly.edu/ in Building 124. Phone: (805) 756-1395. Some

accommodations may take up to several weeks to arrange. If you are a student with a disability, please consider discussing your needs and possible accommodations with me as soon as possible.

In addition to DRC resources, Cal Poly offers the following services that you may use if needed:

- https://sas.calpoly.edu .- Please visit site for the scope of services offered
- https://tech.calpoly.edu/services/ - Contact the service desk for help with your Portal (my.calpoly.edu) account, email and calendar, wireless issues, or other services.
- Robert E. Kennedy Library: https://lib.calpoly.edu/.
- New Student Orientation Programs: https://orientation.calpoly.edu/
- Writing and Learning Center: https://writingandlearning.calpoly.edu/center.
- Registration: https://registrar.calpoly.edu/.
- Advising: https://advising.calpoly.edu/ .
- Counseling Services: https://hcs.calpoly.edu/counseling.

Cal Poly uses Canvas & Poly Learn, which are fully accessible as a learning platform (read more about accessibility within Canvas: https://canvassupport.calpoly.edu/accessibilty.

I recognize there are many ways to learn, and many paths to the same destination. If there is a way I can help accommodate your path, or offer an alternative, please discuss this with me as soon as possible. If you'd like to learn more about your own preferred learning style, the VARK Questionnaire https://vark-learn.com/the-vark-questionnaire/.) is a fun quiz that will show you how you're most comfortable learning (although all of us, unless otherwise enabled, learn in all of the ways presented). Please let me know if I can better help you learn on your journey!

Technical Requirements

- Fairly recent Mac or PC (not more than three years old) with a current operating system.
- Current browser (Firefox or Chrome are preferable)

Technical Support and Contact Information

Support is available for troubleshooting and access issues for PolyLearn. Please visit the https://canvassupport.calpoly.edu/ for further information.

Campus Resources to Support Student Learning

Cal Poly offers programs and resources that are available to assist students during your academic studies, such as the https://sas.calpoly.edu/.