

California Polytechnic State University, San Luis Obispo

Construction Management Department

CM 113-01, Construction Materials & Assemblies, Fall 2020

Instructor:	Ed Boucher B.Eng, MSEM, MBA, PMP
Office Location:	21 – 103A
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Office Hours:	M, W 9:00 am – 12:00 am (or by Virtual Appointment)
Class Days/Times:	M, W 8:10 am – 9:00 am
Classroom:	999 – Off Campus
Prerequisite(s):	None

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 lectures.

Course Goals and Learning Outcomes

Course Goals:

As a result of this course, you should be able to:

- Understand the types of materials commonly used in construction.
- Understand how to identify material properties.
- Identify 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:

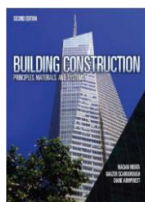
PLO 8: Analyze methods, materials, and equipment used to construct projects.

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	Loads on Buildings, Load Resistance	1, 2, 3, 4	8	Lecture, Video	Assignment
WK #2	Lime, Portland Cement, Concrete Materials for Wood Construction-1	1, 2, 3, 4	8	Lecture	Assignment, Quiz
WK #3	Materials for Wood Construction-2 Materials Steel and Steel Components	1, 2, 3, 4	8	Lecture	Assignment, Quiz
WK #4	Materials Steel and Steel Components	1, 2, 3, 4	8	Lecture	Assignment, Quiz
WK #5	Light Gauge Steel	3, 4	8	Lecture	Assignment, Exam
WK #6	Mortar, Brick, Concrete Masonry Units, Natural Stone, Glass Masonry Units	1, 2, 3, 4	8	Lecture	Assignment, Quiz
WK #7	Exterior Wall Cladding, Transparent Materials	1, 2, 3, 4	8	Lecture, Video	Assignment, Quiz
WK #8	Properties of the Envelope -I & 2	1, 2, 3, 4	8	Lecture	Assignment, Quiz

Choose Unit Type	Topical Outline	CLOs	PLOs	Instructional Activities	Method of Assessment
WK #9	Principles of Joints and Sealants,	1, 2, 3, 4	8	Lecture	Assignment, Quiz
WK #10	Fire Related Properties, Acoustic Properties of Materials	3, 4	8		Exam

Required Texts/Reading



Textbook

Mehta, Medan L., Ph.D.; Scarborough, Walter L.; Armpriest, Diane L. (3rd Edition) Building Construction: Principles, Materials, & Systems- (ISBN: 9780134454177)

Other Readings

Any supplemental readings will be posted on the course CANVAS page.')

Other Equipment/Material Requirements

Laptop computer, calculator, flash drive, engineering paper, set of colored pencils or highlighting markers, engineering scale.

Netiquette

In our class, we will conduct several online discussions. In order to ensure a positive, dynamic, comfortable and collegial environment, please review the online etiquette ("Netiquette") sites below.

[Netiquette Rules for Electronic](#)

[Communications https://www.researchgate.net/publication/307726965 Netiquette in Electronic Communication.](https://www.researchgate.net/publication/307726965_Netiquette_in_Electronic_Communication)

[The Core Rules of Netiquette \(http://www.albion.com/netiquette/corerules.html\).](http://www.albion.com/netiquette/corerules.html)

Cal Poly strives to maintain our campus as a place of work and study for faculty, staff, and students that is free of all forms of prohibited discrimination and harassment based upon race, ethnicity, sex (including sexual assault), pregnancy, color, religion, national origin, physical or mental disability, age, marital status, sexual orientation, gender identity, genetic information, or status as a U.S. veteran. Any student who has concerns about such behavior should contact his/her instructor, Office of the Dean of Students at (805) 756-2472 or at deanofstudents@calpoly.edu, or the Office of Equal Opportunity at (805) 756-6770 or at equalopportunity@calpoly.edu.

The University is committed to maintaining a safe and healthy living and learning environment for students, faculty, and staff. Each member of the campus community should choose behaviors that contribute toward this end. Students are expected to be good citizens and to engage in responsible behaviors that reflect well upon their university, to be civil to one another and to others in the campus community, and contribute positively to student and university life.

It is the discretion of the instructor to make any changes deemed necessary to the class schedule, syllabus, lectures, assignments, quizzes and exams.

Please ask questions if you do not understand a concept in class. During the quarter, if you feel that you are becoming behind in your studies, and having difficulties keeping up with the assignments or concepts in the class, and are concerned about your grade, please make an appointment with me to discuss ways we can turn things around in your favor. Your education and grades here at Cal Poly are your responsibility, but as your instructor I am here to support you in a co-creative learning environment so please reach out and ask for help.

Assignments and Exams

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

Description	Points
Homework	105
Quizzes	70
Midterm Exam	100
Final Exam	100
Total Points Possible	375

Late/Missed Work and Make-Up Policy

Late Assignments: Assignments will be accepted late up to a week past the due date. In accordance with CANVAS grading module, 10% grade reduction, to a maximum 40% reduction will be assessed. Afterwards, no homework will be accepted. Make-up Assignments: No make-up assignment, quizzes or exams will be permitted without 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	Poor Attainment of Course Learning Outcomes
D	63 – 66%	Poor Work	
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/accessibility.>

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/) <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 Canvas. 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/>.