UNSW SYDNEY | Australia's Global University

Built Environment

BLDG1012
Construction materials

Course Outline – Term 1, 2020

Disclaimer

Information within this document is subject to change. The full and most accurate course outline will be available in Moodle closer to the start of the term in which the course is offered.

1. COURSE STAFF

Course Contact	Dr Ahmed WA Hammad
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2. COURSE DETAILS

Credit Points	6 units of credit (uoc)
Workload	Approx. 150 hours including class contact hours, weekly individual and group online learning activities, readings, class preparation, and assessment activities.
Teaching Times and Location	Find details in timetable http://www.timetable.unsw.edu.au

Description

In Construction Materials, details of the major structural material adopted in commercial and residential projects will be covered. This includes examining the composition of concrete, with detailed analysis of the properties of its components, including cement, aggregates, and admixtures utilised. Students will learn how to design concrete mixes, in accordance with the Australian Standards. In addition, a discussion on alternative sustainable materials to adopt in the concrete mix will be presented. Other structural construction materials that will be examined in this course include steel, masonry and timber, with discussions presented on their physical and chemical properties, along with design and planning considerations that need to be accounted for. The final part of the course examines finishing material, including ceramics, claddings, curtain walls, painting and glass. The course will also introduce to the students the concept of life cycle sustainability assessment (LCSA) as a means of selecting and contrasting between applicable construction materials.

Aims

1. To introduce to students essential properties of materials commonly utilised in residential and commercial projects;
2. To present general design considerations that need to be accounted for when utilising structural and finishing materials on projects; and
3. To demonstrate to students the process of life cycle sustainability assessment when it comes to material selection.

Course Learning Outcomes (CLOs)

At the successful completion of this course, you will be able to:

1. Describe the properties and behavior of essential construction materials, including concrete, steel, timber and masonry;
2. Explain the fundamentals of material properties to selection of materials for various stages in the construction process;
3. Demonstrate knowledge in concrete mixture design that meet sustainable and structural requirements; and
4. Recommend construction materials based on life cycle sustainability assessment.

3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Test-On-line Quiz 1	15%	1, 2
2. Test-On-line Quiz 2	15%	1, 2, 3, 4
2. Portfolio-Portfolio Assessment (Online + In-class)	20%	1, 2, 3, 4
3. Examination-Final Exam	50%	1, 2, 3, 4

4. COURSE IMPROVEMENT AND FEEDBACK

Feedback from students is an integral part of improving courses and teaching approaches. One of the primary mechanisms of feedback is myExperience, which we strongly urge all students to complete at the end of term. Course convenors use the feedback to make ongoing improvements to the course. This is communicated in Moodle in the myFeedback Matters page.