



UNSW
SYDNEY

Australia's
Global
University

Built Environment

ARCH7161

Advanced Construction and Structures



Course Outline – Term 3, 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	John Carrick
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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

The subject builds on students' previous experience of architectural technology by exploring some more specialised topics in structures and at the same time, looking more closely at the architectural implications of a few specific areas of construction. We will re-visit the ideas of structural idealisation and extend its use for the conceptual design of structural systems in more significant buildings. Structural ideas to be explored include high-rise, cantilevers, larger-span building geometry and stability.

Aims

The weather-tightness and structural behaviour of facades will be discussed together with ideas for managing air pressure and water flows in active curtain wall systems. The subject will extend students' understanding of the four main construction materials and consider their implications for construction and durability. Excavations, foundations and retaining will be discussed from an architectural perspective.

Course Learning Outcomes (CLOs)

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

1. Evaluate conceptual structural designs of high-rise and large span structural systems using diagrammatic idealisation.
2. Apply the principles of “rain screen” weather-tight curtain wall design to a high-rise building design.
3. Demonstrate advanced knowledge of timber structures with an emphasis on timber joint design and component assembly.
4. Recognise and integrate the role and contribution of specialist consultants (e.g. geotechnical engineer) in the design of high-rise foundation systems.
5. Synthesise architectural design and structural systems design in the early-stage design of high-rise and large span buildings.
6. Communicate effectively with the project team, including the builder and engineer, to achieve the desired architectural design.

3. ASSESSMENT

Assessment task	Weight	CLOs Assessed
1. Project – High rise case study	40%	1, 3, 4, 5
2. Project – Public Building	60%	1, 2

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.