UNSW Course Outline

ARCH1162 Construction and Structures 1 - 2024

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General Course Information

Course Code : ARCH1162
Year : 2024
Term : Term 2
Teaching Period : T2
Is a multi-term course? : No
Faculty : Faculty of Arts, Design and Architecture
Academic Unit : School of Built Environment
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : Kensington
Campus : Sydney
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

This course introduces you to the foundations of architectural construction and structures. It provides you with the vocabulary and understanding to enter a dialogue with experts involved in the building process and the confidence to use your newfound knowledge in the design of a

small piece of architecture. Fundamental techniques involved in the construction of floors, walls and roofs in timber and masonry are covered. Ideas of architectural structure are introduced and explored using the language of structural idealisation, stability and bracing.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Apply foundational knowledge of the physical characteristics of materials and their structural implications to the selection of construction options for a simple example of architectural design
CLO2 : Relate the selection of materials and structural options for a simple architectural design proposal to relevant quality and performance standards
CLO3 : Communicate the material, construction, and structural information of a simple example of architectural design to professional standards

Course Learning Outcomes	Assessment Item
CLO1 : Apply foundational knowledge of the physical characteristics of materials and their structural implications to the selection of construction options for a simple example of architectural design	• Quiz/ Exam • Assignment • Final Submission
CLO2 : Relate the selection of materials and structural options for a simple architectural design proposal to relevant quality and performance standards	• Quiz/ Exam • Assignment • Final Submission
CLO3 : Communicate the material, construction, and structural information of a simple example of architectural design to professional standards	• Quiz/ Exam • Assignment

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The course structure includes weekly lectures, tutorials and self-directed learning activities outside of class time. The tutorials and self-directed activities are designed to apply the lecture material to examples and to support weekly progression of assessment tasks.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Quiz/ Exam Assessment Format: Individual	25%	Start Date: 27/06/2024 03:00 PM Due Date: 25/06/2024 11:59 PM
Assignment Assessment Format: Individual	35%	Due Date: 23/07/2024 09:00 AM
Final Submission Assessment Format: Individual	40%	Due Date: 20/08/2024 10:00 AM

Assessment Details

Quiz/ Exam

Assessment Overview

You will do a short online multiple choice quiz based on the information presented in lectures, tutorials and recommended self learning activities. Feedback will be given in the form of the correct answers.

Course Learning Outcomes

- CLO1 : Apply foundational knowledge of the physical characteristics of materials and their structural implications to the selection of construction options for a simple example of architectural design
- CLO2 : Relate the selection of materials and structural options for a simple architectural design proposal to relevant quality and performance standards
- CLO3 : Communicate the material, construction, and structural information of a simple example of architectural design to professional standards

Detailed Assessment Description

This is multiple choice quiz based on Construction and Structures content thus far. You will receive feedback in terms of correct answers in Week 6. Please refer to the Moodle Assessment Hub for more detailed information.

Assessment Length

1.5 hours

Assignment submission Turnitin type

Not Applicable

Assignment

Assessment Overview

For the Assignment you will produce a 3D computer model of all the main structural elements used in a simple example of architectural design, show the bracing principles that make the design stable and include calculations for a hypothetical beam. Assessment will be done using a rubric with individual feedback.

Course Learning Outcomes

- CLO1 : Apply foundational knowledge of the physical characteristics of materials and their structural implications to the selection of construction options for a simple example of architectural design
- CLO2 : Relate the selection of materials and structural options for a simple architectural design proposal to relevant quality and performance standards
- CLO3 : Communicate the material, construction, and structural information of a simple example of architectural design to professional standards

Detailed Assessment Description

For detailed information please see the Moodle Assessment Hub.

Assignment submission Turnitin type

This is not a Turnitin assignment

Final Submission

Assessment Overview

For the Final Submission you will build a physical model of all the main elements used in a simple example of architectural design. You will also demonstrate the bracing of your design and the calculations required in the sizing of a critical beam. Assessment will be done with a rubric with individual feedback.

Course Learning Outcomes

- CLO1 : Apply foundational knowledge of the physical characteristics of materials and their structural implications to the selection of construction options for a simple example of architectural design
- CLO2 : Relate the selection of materials and structural options for a simple architectural design proposal to relevant quality and performance standards

Detailed Assessment Description

For the final submission you will produce a physical 1:20 model of your design and do some calculations to give you an understanding of beam sizing. For detailed information please see

the Moodle Assessment Hub.

Assignment submission Turnitin type

This is not a Turnitin assignment

General Assessment Information

A supplementary assessment may be offered in this course at the end of term to students whose final result is between 45 and 49. Your course convener will contact you after course results are finalised if you are eligible for the option of a supplmentary assessment.

For this course, you may use AI-based software to research and prepare prior to completing your assessment. You are permitted to use standard editing and referencing functions in word processing software in the creation of your submission. You must not use any functions that generate or paraphrase passages of text, whether based on your own work or not. Please note that your submissions will be passed through an AI-generated text detection tool. If your marker has concerns that your answers contain passages of AI-generated text you may be asked to explain your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to the UNSW Conduct and Integrity Office for investigation for academic misconduct and possible penalties.

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Introduction to course. Relationship between construction and architecture.
Week 2 : 3 June - 9 June	Lecture	Introduction to various methods of describing a structure
Week 3 : 10 June - 16 June	Lecture	Introduction to approaches to brick and timber walls. Review of required readings.
Week 4 : 17 June - 23 June	Lecture	Introduction to equilibrium, bending, shear and stress
Week 5 : 24 June - 30 June	Lecture	Building elements
Week 6 : 1 July - 7 July	Other	UNSW Flexibility Week - No classes
Week 7 : 8 July - 14 July	Lecture	Material properties
Week 8 : 15 July - 21 July	Lecture	Models, bracing, fixings, engineered timber, NCC
Week 9 : 22 July - 28 July	Lecture	Deflection and beam design
Week 10 : 29 July - 4 August	Lecture	Revision

Attendance Requirements

You are expected to be regular and punctual in attendance at all classes for the School of Built Environment courses in which you are enrolled. If and where individual courses have specific attendance requirements, these will be stated in the course outline.

If you do not attend, engage, or participate in scheduled class activities, including lectures, tutorials, studios, labs, etc, you run the risk of failing a course.

If illness or unexpected and beyond your control circumstances prevent you from completing a task on time, or substantially disturb your assessment performance, you should apply for Special Consideration, as soon as practicable, accompanied by appropriate documentation.

No special consideration will be provided if you miss out on essential course information and materials, or if you miss assessment tasks and deadlines due to unexplained absences or an unapproved lack of attendance.

You may be advised by the Course Convenor to withdraw from the course if significant learning activities are missed.

General Schedule Information

Please refer to detailed Weekly Schedule in the Moodle Course Information Hub.

Course Resources

Prescribed Resources

Acceptable Standards of Construction - Class 1 & Class 10 Buildings – Any edition after 2012.

E-book available via course Leganto site.

For purchase of a physcial copy see https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780646574479.

Recommended Resources

Wilkie, George. *Building Your Own Home*. Sydney: New Holland Publishers, 2011.
For purchase of a physcial copy see https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781742572161

Allen, Edward & Iano, Joseph. *Fundamentals of Building Construction: Methods and Materials,* 4th ed., Hoboken, N.J.: John Wiley & Sons, c2004. Available in UNSW Library or as E-book via course Leganto site.

Ching, Francis. *Building Construction Illustrated*. John Wiley & Sons, 2020
Available in UNSW Library or as E-book via course Leganto site. For purchase of a physcial copy see https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781119583080.

Standard Drawing Symbols Abbreviations Graphical Representation, TAFE NSW.
For purchase of a physcial copy see https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9780724035908

AS 1100-301-2008 Australian Standard Technical Drawing Part 301 Architectural Drawing
See UNSW Library at https://www.library.unsw.edu.au/using-the-library/information-resources/databases

Wyatt, Ken. *Principles of Structures.* Sydney: New South Publishing, 2013. For purchase of a physcial copy see https://www.bookshop.unsw.edu.au/details.cgi?ITEMNO=9781742232935. E-book available via course Leganto site.

National Construction Code Volume 2 – 2022 – Class 1 and 10 Buildings.

https://ncc.abcb.gov.au/editions/ncc-2022/adopted/housing-provisions/front-matter/copyright-and-licence-notice
(free login)

Course Evaluation and Development

Each student will have the opportunity to participate in the MyExperience course survey for ARCH1162 at the end of the term. This is an anonymous questionnaire in which students can register their level of satisfaction with the content, delivery, teaching and management of the course. In addition to this, students are welcome to make an appointment at any point throughout the term to meet with the course convenor to discuss any issues they encounter within the course. These meetings are private and confidential.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Christian Grennan				Arranged by email	No	Yes

Other Useful Information

Academic Information

Due to evolving advice by NSW Health, students must check for updated information regarding online learning for all Arts, Design and Architecture courses this term (via Moodle or course information provided).

Please see: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support/protocols-guidelines for essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Dean's List;
- review of results;
- credit transfer;
- cross-institutional study and exchange;
- examination information;
- enrolment information;

- Special Consideration in the event of illness or misadventure;
- student equity and disability;

And other essential academic information.

Academic Honesty and Plagarism

Plagiarism is using the words or ideas of others and presenting them as your own. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement.

UNSW groups plagiarism into the following categories:

- Copying: Using the same or very similar words to the original text or idea without acknowledging the source or using quotation marks. This includes copying materials, ideas or concepts from a book, article, report or other written document, presentation, composition, artwork, design, drawing, circuitry, computer program or software, website, internet, other electronic resource, or another person's assignment without appropriate acknowledgement.
- Inappropriate paraphrasing: Changing a few words and phrases while mostly retaining the original information, structure and/or progression of ideas of the original without acknowledgement. This also applies in presentations where someone paraphrases another’s ideas or words without credit and to piecing together quotes and paraphrases into a new whole, without appropriate referencing.
- Collusion: Working with others but passing off the work as a person’s individual work. Collusion also includes providing your work to another student for the purpose of them plagiarising, paying another person to perform an academic task, stealing or acquiring another person’s academic work and copying it, offering to complete another person’s work or seeking payment for completing academic work.
- Inappropriate citation: Citing sources which have not been read, without acknowledging the "secondary" source from which knowledge of them has been obtained.
- Duplication ("self-plagiarism"): Submitting your own work, in whole or in part, where it has previously been prepared or submitted for another assessment or course at UNSW or another university.

The UNSW Academic Skills support offers resources and individual consultations. Students are also reminded that careful time management is an important part of study. One of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and proper referencing of sources in preparing all assessment items. UNSW Library has the ELISE tool available to assist you with your study at UNSW. ELISE is designed to introduce new students to studying at UNSW, but it can also be a great refresher during your study.

Completing the ELISE tutorial and quiz will enable you to:

- analyse topics, plan responses and organise research for academic writing and other assessment tasks
- effectively and efficiently find appropriate information sources and evaluate relevance to your needs
- use and manage information effectively to accomplish a specific purpose
- better manage your time
- understand your rights and responsibilities as a student at UNSW
- be aware of plagiarism, copyright, UNSW Student Code of Conduct and Acceptable Use of UNSW ICT Resources Policy
- be aware of the standards of behaviour expected of everyone in the UNSW community
- locate services and information about UNSW and UNSW Library

Use of AI for assessments

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Where the use of AI tools, such as ChatGPT, has been permitted by your course convener, they must be properly credited and your submissions must be substantially your own work.

In cases where the use of AI has been prohibited, please respect this and be aware that where unauthorised use is detected, penalties will apply.

Use of AI for assessments | UNSW Current Students

Submission of Assessment Tasks

Turnitin Submission

If you encounter a problem when attempting to submit your assignment through Turnitin, please telephone External Support on 9385 3331 or email them on externalteltsupport@unsw.edu.au

Support hours are 8:00am – 10:00pm on weekdays and 9:00am – 5:00pm on weekends (365 days a year). If you are unable to submit your assignment due to a fault with Turnitin, you may apply for an extension, but you must retain your ticket number from External Support (along with any other relevant documents) to include as evidence to support your extension application. If you email External Support, you will automatically receive a ticket number, but if you telephone, you will need to specifically ask for one. Turnitin also provides updates on their system status on Twitter.

Generally, assessment tasks must be submitted electronically via either Turnitin or a Moodle assignment. In instances where this is not possible, alternative submission details will be stated on your course's Moodle site. For information on how to submit assignments online via Moodle: https://student.unsw.edu.au/how-submit-assignment-moodle

Late Submission Penalty

UNSW has a standard late submission penalty of:

- 5% per calendar day,
- for all assessments where a penalty applies,
- capped at five calendar days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request Special Consideration as early as possible before the deadline. Support with Time Management is available here.

School Contact Information

beadmin@unsw.edu.au