UNSW Course Outline

ARCH1361 Architectural Science and Building Environment 2 - 2024

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General Course Information

Course Code : ARCH1361
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

Architectural Science and Building Environment 2 focuses on applying the principles of acoustics, lighting and comfort to achieve indoor environmental quality (IEQ) and enhanced environmental performance. The course contextualises the science of acoustics, lighting and

comfort within architectural design with an emphasis on environmental data collection, analysis and application to optimise IEQ and environmental performance. You will explore the role of architectural design in mitigating indoor and outdoor thermal comfort impacts through real-world case-studies and online tools. You will investigate the significance of daylighting and artificial lighting design in IEQ and building environmental performance and apply acoustic principles to your studio designs. You will learn how to identify, evaluate and apply strategies to optimise acoustics, lighting and thermal comfort integrated with architectural design compliant with the regulatory standards applicable to environmental performance.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Apply knowledge of scientific principles of acoustics, daylighting and lighting and thermal comfort to architectural design.
CLO2 : Evaluate acoustic, lighting and comfort strategies to optimise Indoor Environmental Quality and building environmental performance.
CLO3 : Apply Australian building codes and standards applicable to acoustics, lighting and comfort to architectural designs.
CLO4 : Communicate Indoor Environmental Quality using descriptive, visual and numerical formats, suited to building environmental specialists.

Course Learning Outcomes	Assessment Item
CLO1 : Apply knowledge of scientific principles of acoustics, daylighting and lighting and thermal comfort to architectural design.	• Acoustics • Lighting • Application to Architectural Design
CLO2 : Evaluate acoustic, lighting and comfort strategies to optimise Indoor Environmental Quality and building environmental performance.	• Acoustics • Lighting • Application to Architectural Design
CLO3 : Apply Australian building codes and standards applicable to acoustics, lighting and comfort to architectural designs.	• Acoustics • Lighting • Application to Architectural Design
CLO4 : Communicate Indoor Environmental Quality using descriptive, visual and numerical formats, suited to building environmental specialists.	• Application to Architectural Design

Learning and Teaching Technologies

Moodle - Learning Management System

Learning and Teaching in this course

The course is delivered through lectures and tutorials. Lectures introduce fundamental principles which are explored in the tutorials, together with development of assessment work. Tutorials consist of tasks focused on the collection, analysis and interpretation of environmental data using first-principles and software tools. Assessments are structured to enable students to progressively demonstrate understanding of the basic principles of acoustics, lighting and thermal comfort and to apply environmental strategies to improve the environmental performance of their architectural designs.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Acoustics Assessment Format: Individual	20%	Due Date: 20/06/2024 11:00 PM
Lighting Assessment Format: Individual	20%	Due Date: 19/07/2024 11:00 PM
Application to Architectural Design Assessment Format: Individual	60%	Start Date: Not Applicable Due Date: 11/08/2024 11:00 PM

Assessment Details

Acoustics

Assessment Overview

You will address questions and complete a short numerical problem related to the principles of acoustics. Grading will be done against assessment criteria. Feedback will be provided in the form of correct answers.

Course Learning Outcomes

- CLO1 : Apply knowledge of scientific principles of acoustics, daylighting and lighting and thermal comfort to architectural design.
- CLO2 : Evaluate acoustic, lighting and comfort strategies to optimise Indoor Environmental Quality and building environmental performance.
- CLO3 : Apply Australian building codes and standards applicable to acoustics, lighting and comfort to architectural designs.

Detailed Assessment Description

Detailed information regarding Assessment 1 (Acoustics) will be provided in Moodle at term commencement in the form of an assessment handout. The assessment requirements in the

handout take precedence.

Submission notes

Moodle submission on Thursday 20 June before 11pm (Week 4).

Assessment information

Detailed information regarding Assessment 1 (Acoustics) will be provided in Moodle at term commencement.

Assignment submission Turnitin type

This is not a Turnitin assignment

Lighting

Assessment Overview

You will select a room on UNSW Kensington campus, and calculate and/or simulate its basic lighting indices, and recommend improvements to its lighting and visual comfort conditions. Grading will be done against assessment criteria, accompanied by written feedback.

Course Learning Outcomes

- CLO1 : Apply knowledge of scientific principles of acoustics, daylighting and lighting and thermal comfort to architectural design.
- CLO2 : Evaluate acoustic, lighting and comfort strategies to optimise Indoor Environmental Quality and building environmental performance.
- CLO3 : Apply Australian building codes and standards applicable to acoustics, lighting and comfort to architectural designs.

Detailed Assessment Description

Detailed information regarding Assessment 2 (Lighting) will be provided in Moodle at term commencement in the form of an assessment handout. The assessment requirements in the handout take precedence.

Submission notes

Moodle submission on Friday 19 July 2024 before 11pm (Week 8).

Assessment information

Detailed information regarding Assessment 2 (lighting) will be provided in Moodle at term commencement.

Assignment submission Turnitin type

This is not a Turnitin assignment

Application to Architectural Design

Assessment Overview

You will evaluate the acoustics, lighting and thermal comfort performance of your architectural design studio project and propose improvements using descriptive, visual and quantitative analysis. Grading will be done against assessment criteria, accompanied by written feedback.

Course Learning Outcomes

- CLO1 : Apply knowledge of scientific principles of acoustics, daylighting and lighting and thermal comfort to architectural design.
- CLO2 : Evaluate acoustic, lighting and comfort strategies to optimise Indoor Environmental Quality and building environmental performance.
- CLO3 : Apply Australian building codes and standards applicable to acoustics, lighting and comfort to architectural designs.
- CLO4 : Communicate Indoor Environmental Quality using descriptive, visual and numerical formats, suited to building environmental specialists.

Detailed Assessment Description

Detailed information regarding Assessment 3 (Application to Design) will be provided in Moodle at term commencement in the form of an assessment handout. The assessment requirements in the handout take precedence.

Submission notes

Moodle submission on Sunday 11 August 2024 before 11pm (Week 11).

Assessment information

Assessment 3 (Application to Design) requires all students **to use a prior or current architectural design studio project**. Students may use projects from architectural design studio 3 (ARCH1201), design studio 5 (ARCH1311) or design studio 6 (ARCH1302) or any other pre-approved (by the course convenor) architectural design studio project.

Assignment submission Turnitin type

This is not a Turnitin assignment

General Assessment Information

Detailed information and requirements regarding all assessments will be available in Moodle as assessment handouts.

Assessment 3 (Application to Design) requires all students **to use a prior or current architectural design studio project**. Students may use projects from architectural design studio 3 (ARCH1201),

design studio 5 (ARCH1311) or design studio 6 (ARCH1302) or any other pre-approved (by the course convenor) architectural design studio project.

The Use of Artificial Intelligence in Assessments:

No Assistance

For Assessment 1 (Acoustics) and Assessment 2 (Lighting), the assessment tasks involve multiple choice and short numerical problem solving and **No AI assistance is permitted**.

It is prohibited to use any software or service to search for or generate information or answers. If its use is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

For Basic Fact-Finding Research and Planning Assistance

As Assessment 3 involves research, planning and creative processes, you are permitted to use AI software for "basic fact-finding research" and to generate "initial ideas" provided you strictly adhere to the requirements below:

For basic fact-finding research (i.e., research *without* critical appraisal and predominantly consisting of *descriptions* of available information), the use of AI or other software is permitted BUT output (used during tutorial discussions and for the assessment) must be clearly attributed with full referencing. If the outputs of generative AI such as ChatGPT form part of your assessment submission and is not appropriately attributed, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

To cite: OpenAI (Year Accessed). ChatGPT. OpenAI. https://openai.com/models/chatgpt/

Please **note** that the outputs from these tools are not always accurate, appropriate, nor properly referenced. You should ensure that you have **moderated and critically evaluated** the outputs from generative AI tools such as ChatGPT before assessment submission and that your submission addresses the assessment task.

For "initial ideas" regarding planning and creative processes, you must critically appraise, develop or edit those ideas to such a significant extent that what is submitted is your own work, i.e. only *occasional* AI generated words, phrases or images may form part of your final submission. It is required of you to keep copies of the initial prompts to show your lecturer/

convenor if there is any uncertainty about the originality of your work.

For “initial ideas” regarding planning and creative processes, if the outputs of generative AI such as ChatGPT form a part of your submission without substantial editing/developing into your own original work, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

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Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Activity	10am – 10:15am: Introductory talk (JF) 10:15am – 12pm: ACOUSTICS lecture 1 (CH) 12pm – 2pm: Acoustics tutorial 1 (CH)
Week 2 : 3 June - 9 June	Activity	10am – 12pm: ACOUSTICS lecture 2 (CH) 12pm – 2pm: Acoustics tutorial 2 (CH)
Week 3 : 10 June - 16 June	Other	Public Holiday – NO CLASSES
Week 4 : 17 June - 23 June	Activity	10am – 12pm: EQ lecture (MS) 12pm – 2pm: EQ tutorial (MS)
	Assessment	Assessment 1 (Acoustics) due Thursday 20/06 via Moodle before 11pm. Weighting: 20%
Week 5 : 24 June - 30 June	Activity	10am – 12pm: LIGHTING lecture 1 (KV) 12pm – 2pm: Lighting tutorial 1 (KV)
Week 6 : 1 July - 7 July	Other	NON-TEACHING (Flexibility) WEEK
Week 7 : 8 July - 14 July	Activity	10am – 12pm: LIGHTING lecture 2 (KV) 12pm – 2pm and 4pm – 6pm: Lighting Labs (KV)
Week 8 : 15 July - 21 July	Activity	10am – 12pm: THERMAL COMFORT lecture 1 (JF) 12pm – 2pm: Thermal Comfort tutorial 1 (JF)
	Assessment	Assessment 2 (Lighting) due Friday 19/07 via Moodle before 11pm. Weighting: 20%
Week 9 : 22 July - 28 July	Activity	10am – 12pm: THERMAL COMFORT lecture 2 (JF) 12pm – 2pm: Thermal Comfort tutorial 2 (JF)
Week 10 : 29 July - 4 August	Activity	10am – 10:20am: Closing talk (JF) 10:20am – 12pm: LIGHTING lecture 3 (KV) 12pm – 2pm: DESIGN APPLICATION tutorial (for Assessment 3)
Week 11 : 5 August - 11 August	Assessment	Assessment 3 (Application to Design) due Sunday 11/08 via Moodle before 11pm. Weighting: 60%

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

The detailed **Weekly Course Schedule** will be available in the **Course Outline** posted on Moodle (and below)

Course Resources

Recommended Resources

A comprehensive list of resources (readings and software applications) is available in the **Course Outline** posted on Moodle.

Course Evaluation and Development

We encourage and support students to maintain regular contact with the course convenor to provide informal feedback throughout the course. For specific issues or detailed feedback, please arrange a meeting with the course convenor via email.

In this course there is an option for students to provide anonymous feedback via the course's Moodle page, which is directly sent to the convenor. As a final step, students are invited to share their insights and experiences by completing the MyExperience survey. The feedback gathered each year is integral to the continuous enhancement and development of the course.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Jonathan Fox		Room 4005, Level 4, ABL Centre West Wing		Appointments via email (drop-in times: Mondays 2:30pm - 3pm).	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