UNSW Course Outline

BLDG2011 Building Services - 2024

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General Course Information

Course Code : BLDG2011
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 : Multimodal
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

Building Services covers aspects of the built environment that ensure the performance and productivity, comfort, safety and wellbeing of building occupants. This includes air conditioning and mechanical ventilation, electrical light and power, fire services, fire safety engineering, water and waste services, data and communications, security and access control, vertical transportation, and acoustics.

Effective management of building services is indispensable for the operation and usage of

buildings. The management of the installation and maintenance of services within a building span over the lifecycle of a building, unlike some trades that occur at the construction stage only. Therefore, skills and knowledge about different building services and their management are essential for any construction manager, project manager or facilities manager.

In this course you will explore how building services support sustainable construction practices, including opportunities to align with UN Sustainable Development Goals 6 and 11, which aim to ensure availability and sustainable management of water and sanitation and to make cities and human settlements inclusive, safe, resilient, and sustainable.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Analyse industry standards and professionals' perspectives for various building services.
CLO2 : Apply project management knowledge and skills to improve the operation and usage of building services.
CLO3 : Evaluate construction regulatory requirements in relation to sustainable and safe building services.
CLO4 : Propose sustainable options for various services within a building.

Course Learning Outcomes	Assessment Item
CLO1 : Analyse industry standards and professionals' perspectives for various building services.	• Group Project • Tutorial Discussions • Individual Report
CLO2 : Apply project management knowledge and skills to improve the operation and usage of building services.	• Group Project • Tutorial Discussions
CLO3 : Evaluate construction regulatory requirements in relation to sustainable and safe building services.	• Individual Report • Group Project • Tutorial Discussions
CLO4 : Propose sustainable options for various services within a building.	• Individual Report

Learning and Teaching Technologies

Moodle - Learning Management System | Blackboard Collaborate | Echo 360

Learning and Teaching in this course

The course is delivered through lectures and tutorials. The course is delivered in flipped mode which encourages you to review pre-recorded course material before attending class sessions.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Group Project Assessment Format: Group	40%	Due Date: 09/08/2024 11:59 PM
Tutorial Discussions Assessment Format: Individual	30%	Due Date: Weekly submission
Individual Report Assessment Format: Individual	30%	Due Date: 09/08/2024 11:59 PM

Assessment Details

Group Project

Assessment Overview

In groups, you will produce a critical analysis of a building services case study. Grading will be done against assessment criteria, accompanied by written feedback to the group. Individual contributions will be assessed.

Course Learning Outcomes

- CLO1 : Analyse industry standards and professionals' perspectives for various building services.
- CLO2 : Apply project management knowledge and skills to improve the operation and usage of building services.
- CLO3 : Evaluate construction regulatory requirements in relation to sustainable and safe building services.

Detailed Assessment Description

Students are also encouraged to practise their skills outside class by working on a major group assignment. A case-based assignment project will require students to analyse building services critically. This course uses a self-directed learning approach, allowing students to choose their reading material and explore beyond the course requirements. The Assessment Guideline provides detailed instructions for a case-based project.

Assessment Length

8000 words

Tutorial Discussions

Assessment Overview

You will actively engage in tutorial discussion addressing questions related to different building services. Grading will be done against assessment criteria, accompanied by written feedback.

Course Learning Outcomes

- CLO1 : Analyse industry standards and professionals’ perspectives for various building services.
- CLO2 : Apply project management knowledge and skills to improve the operation and usage of building services.
- CLO3 : Evaluate construction regulatory requirements in relation to sustainable and safe building services.

Detailed Assessment Description

To help students master building services techniques, a few interactive tutorial discussion activities are arranged in tutorial sessions. Some interactive activities related to building services will be utilised to enhance students' learning experience. Students need to complete interactive tutorials individually.

Individual Report

Assessment Overview

You will produce a report evaluating various sustainable and green options together with recommendations. Grading will be done against assessment criteria, accompanied by written feedback.

Course Learning Outcomes

- CLO1 : Analyse industry standards and professionals’ perspectives for various building services.
- CLO3 : Evaluate construction regulatory requirements in relation to sustainable and safe building services.
- CLO4 : Propose sustainable options for various services within a building.

Detailed Assessment Description

You will produce a report evaluating various sustainable and green options and recommendations. Grading will be done against assessment criteria, accompanied by written feedback. Detailed instruction for individual report about sustainable and green building services is provided in Assessment Guideline.

General Assessment Information

Use of Generative Artificial Intelligence (AI) – such as ChatGPT – in the Building Services Assessments

Simple editing assistance for the Building Services assessment task, you may use standard editing and referencing software, but not generative AI. You are permitted to use the full capabilities of the standard software to answer the question (e.g. Microsoft Office suite, Grammarly, etc.). If the use of generative AI such as ChatGPT is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

Grading Basis

Standard

Requirements to pass course

To pass this course, a student must receive at least 50% of the aggregate marks for all the assessment tasks

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 27 May - 2 June	Lecture	Topic Week 1: Course Overview, Building Design Context, Design Fundamentals, Authorities, Codes and Standards
	Tutorial	• Form a team. • Select a case building. • Develop a team charter.
	Online Activity	• Submit group project charter. • Complete peer assessment.
Week 2 : 3 June - 9 June	Lecture	Topic: Passive and Active Environmental Systems
	Tutorial	Master passive and active environmental systems by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool
Week 3 : 10 June - 16 June	Lecture	Topic: Heating, Ventilation and Air Conditioning (HVAC)-1
	Tutorial	Master heating, ventilation and air conditioning by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool
Week 4 : 17 June - 23 June	Lecture	Topic: Heating, Ventilation and Air Conditioning (HVAC)-2
	Tutorial	Master heating, ventilation and air conditioning by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool.
Week 5 : 24 June - 30 June	Lecture	Topic: Vertical Transportation
	Tutorial	Master vertical transportation by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool.
Week 6 : 1 July - 7 July	Other	Flexibility Week_No lecture and no tutorials.
Week 7 : 8 July - 14 July	Lecture	Topic: Electrical Power
	Tutorial	Master electrical power by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool.
Week 8 : 15 July - 21 July	Lecture	Topic: Fire Prorection
	Tutorial	Master fire protection by completing interactive and adaptive tutorials,
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool.
Week 9 : 22 July - 28 July	Lecture	Topic: Water Supply, Waste and Sanitary Drainage
	Tutorial	Master water supply, waste and sanitary drainage by completing interactive and adaptive tutorials.
	Online Activity	• Complete and submit group tutorial. • Provide feedback by using the peer assessment tool.
Week 10 : 29 July - 4 August	Lecture	Topic: Sustainability, Green Building Services
	Tutorial	Review and feedback on group assignment

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

The course is delivered through lectures and tutorials. The course is delivered in flipped mode

which encourages you to review pre-recorded course material before attending class sessions.

Course Resources

Recommended Resources

- *Grondzik W.T., & Kwok, A.G (2015), Mechanical and Electrical Equipment for Buildings*, 12th edition, Wiley (Available at Moodle Site – Learning Resources/Reference Library List_Textbooks Leganto)
- Obrart, A. (2016). Building Services Engineering for Architects and Building Design Professionals: A Guide to Integrated Design. Integral Publishing: Watsons Bay.
- Hall, F., & Greeno R. (2009), Building services handbook, 5th edition, Butterworth-Heinemann.
- *Guide to the Building Code of Australia (2022), National Construction Code, The Australian Building Codes Board*.

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	Moe (Mohammad) Mojtahedi		Anita B Lawrence Building (H13) - Room 3006	+61 2 9065 6226	By appointment – organise via email, online meeting via Microsoft Teams	Yes	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