UNSW Course Outline

CODE2170 Building Information Modelling - 2024

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General Course Information

Course Code : CODE2170
Year : 2024
Term : Term 3
Teaching Period : T3
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

In this course, you will be introduced to Building Information Modelling (BIM) concepts, standards and methods applicable to the built environment. You will apply Building Information Modelling (BIM) skills for the design, documentation and visualisation of buildings. You will

collaborate in multi-disciplinary teams to achieve optimal design solutions.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Explain Building Information Modelling (BIM) concepts, standards and methods applicable to the built environment.
CLO2 : Apply Building Information Modelling (BIM) skills for the design, documentation and visualisation of buildings.
CLO3 : Generate high-performance building design through Building Information Modelling (BIM) analysis.
CLO4 : Collaborate in multi-disciplinary teams employing Building Information Modelling (BIM) skills to achieve optimal design solutions

Course Learning Outcomes	Assessment Item
CLO1 : Explain Building Information Modelling (BIM) concepts, standards and methods applicable to the built environment.	• Quiz • Individual Project
CLO2 : Apply Building Information Modelling (BIM) skills for the design, documentation and visualisation of buildings.	• Individual Project
CLO3 : Generate high-performance building design through Building Information Modelling (BIM) analysis.	• Collaborative Project
CLO4 : Collaborate in multi-disciplinary teams employing Building Information Modelling (BIM) skills to achieve optimal design solutions	• Collaborative Project

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

Learning and Teaching in this course

This course is concerned specifically with the utilisation of BIM technology. The aim of the course is to give you a practical, hands-on introduction to BIM and related computer-based techniques for the modelling and documentation of designed structures. The lectures supplement this hands-on experience with an outline of the theoretical context within which BIM is used in design modelling, the production of 2D design documentation from a 3D model and the use of design analysis in order to support better design outcomes through computational methods and more effective collaboration with consultant specialists.

Considering your wide range of skills and expertise with CAD or BIM technology, from raw

beginners through to those with a substantial amount of practical experience, the broad focus will be to begin with basic skills, and build up fairly rapidly to the use of more advanced, collaborative aspects of BIM.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Quiz Assessment Format: Individual	15%	Due Date: Week 3: 23 September - 29 September, Week 7: 21 October - 27 October, Week 10: 11 November - 17 November
Individual Project Assessment Format: Individual	40%	Due Date: Week 6: 14 October - 20 October
Collaborative Project Assessment Format: Group	45%	Due Date: Week 11: 18 November - 24 November

Assessment Details

Quiz

Assessment Overview

You will respond to a series of online quizzes with multiple choice.

Course Learning Outcomes

- CLO1 : Explain Building Information Modelling (BIM) concepts, standards and methods applicable to the built environment.

Detailed Assessment Description

Three Online Quizzes developed from lecture notes.

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

No Assistance

This assessment is designed for you to complete without the use of any generative AI. You are not permitted to use any generative AI tools, software or service to search for or generate information or answers.
For more information on Generative AI and permitted use please see here.

Individual Project

Assessment Overview

You will model a building using BIM software packages. Marking will be done using a rubric with students receiving individual written feedback. Class-wide feedback will also be provided.

Course Learning Outcomes

- CLO1 : Explain Building Information Modelling (BIM) concepts, standards and methods applicable to the built environment.
- CLO2 : Apply Building Information Modelling (BIM) skills for the design, documentation and visualisation of buildings.

Detailed Assessment Description

Individual documentation - Individual assignment

- Modelling and documentation (35%)
- Peer assessment on individual short video (5%)

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
If your Convenor has concerns that your submission contains passages of AI-generated text or media, you may be asked to account for your work. If you are unable to satisfactorily demonstrate your understanding of your submission you may be referred to UNSW Conduct & Integrity Office for investigation for academic misconduct and possible penalties.
For more information on Generative AI and permitted use please see here.

Collaborative Project

Assessment Overview

You will develop a BIM presentation that will demonstrate both BIM coordination and modeling skills. Marking will be done using a rubric with students receiving an individual mark. Verbal and written feedback will occur through the development of the projects both to individuals and

group, and broadly to the class.

Course Learning Outcomes

- CLO3 : Generate high-performance building design through Building Information Modelling (BIM) analysis.
- CLO4 : Collaborate in multi-disciplinary teams employing Building Information Modelling (BIM) skills to achieve optimal design solutions

Detailed Assessment Description

Collaborative documentation - Collaborative assignment

- Group Model/Documentation
- Individual Model/Documentation

Assignment submission Turnitin type

This is not a Turnitin assignment

Generative AI Permission Level

Simple Editing Assistance

In completing this assessment, you are permitted to use standard editing and referencing functions in the software you use to complete your assessment. These functions are described below. You must not use any functions that generate or paraphrase passages of text or other media, whether based on your own work or not.
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General Assessment Information

Grading Basis

Standard

Requirements to pass course

Students must make a genuine attempt at all assessment tasks and complete the course with a Pass grade of 50 or above.

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 0 : 2 September - 8 September	Other	Install REVIT2023 with your own Autodesk Account (using a name-format email address, e.g., john.doe@student.unsw.edu.au or Jane.doe@unsw.edu.au) Start forming a team of four students in your tutorial group
Week 1 : 9 September - 15 September	Lecture	Introduction • Course Introduction • Assessments and Assignments/Tutorial Plan • Why do you need BIM? • Lecture Recap/Q&A and Tutorial Overview
	Tutorial	Revit Modelling Practice I • Revit Modelling Basics I • Revit Modelling Basics II • Selection of a house in Sydney
Week 2 : 16 September - 22 September	Lecture	Building Information Modelling (BIM) • BIM Definitions and Concepts • Modelling Principles • Parametric Design (+ REVIT Families) • Lecture Recap/Q&A and Tutorial Overview
	Tutorial	Revit Modelling Practice II • Revit Modelling Principles • Revit Families • Q&A
Week 3 : 23 September - 29 September	Lecture	BIM Documentation I • BIM Applications • Documentation for the AEC industry • Documentation Standard • Q&A and Quiz 1 (Weeks 1-3) in Moodle (5%)
	Tutorial	Revit Documentation I • Documentation I • Documentation II • Q&A
Week 4 : 30 September - 6 October	Lecture	BIM Documentation II • Level of Development • Classification and Specifications • Keynotes, Drawings and Presentations • Lecture Recap/Q&A and Tutorial Overview
	Tutorial	Revit Documentation II • Documentation III • Documentation IV • Q&A --> Uploading Individual Models
Week 5 : 7 October - 13 October	Lecture	BIM Practice • BIM Practice from Architecture to Urban Design • BIM and Sustainability • Video Presentation (+Assignment 1) • Lecture Recap/Q&A and Tutorial Overview
	Tutorial	Reviewing Individual BIM Models • Reviewing BIM Models I • Reviewing BIM Models II
Week 6 : 14 October - 20 October	Assessment	Assignment 1 (A stand-alone house modelling) Due in Week 6 (By 5 pm, Friday) • Modelling and documentation (35%) • Five-minute video presentation - Peer assessment on the short video (5%)
Week 7 : 21 October - 27 October	Lecture	BIM Collaboration • Design Collaboration Models • BIM and Virtual Collaboration (BIM360 or ACC360) • Assignment 2 Brief • Q&A and Quiz 2 (Weeks 4-7) in Moodle (5%)
	Tutorial	BIM Collaboration I • REVIT setups • BIM360 Basics and Assignment 2 • Team Meeting
Week 8 : 28 October - 3 November	Lecture	ONLINE pre-recordings - BIM Lifecycle Management • BIM Lifecycle Management and BIM360 (or ACC360) • Construction Schedule (BIM360 or ACC360 Product)

		• Revit Worksharing and BIM360 (or ACC360) MS TEAMS meeting (10:30 AM) - Lecture Recap/Q&A and Tutorial Overview
	Tutorial	MS TEAMS meeting - BIM Collaboration II • REVIT modelling and Worksharing • BIM360 collaboration • Team Meeting/5 min "Team" Video Call
Week 9 : 4 November - 10 November	Lecture	ONLINE pre-recordings - BIM-enabled Design Analysis • BIM Tools and Plugins (BIM360) • Code Checking • Clash Detection MS TEAMS meeting (10:30 AM) - Lecture Recap/Q&A and Tutorial Overview
	Tutorial	MS TEAMS meeting - BIM360 and Clash Detection • REVIT documentation • BIM360 Model Coordination and Clash Detection • Team Meeting/5 min "Team" Video Call
Week 10 : 11 November - 17 November	Tutorial	MS TEAMS meeting - Developing Assignment 2 • Coordination and Collaboration for Assignment two • 5 min "Team" Video Call
	Lecture	ONLINE pre-recordings - BIM-related Emerging Technologies • Emerging Technologies I • Emerging Technologies II • Assignment 2 – Q&A MS TEAMS meeting (10:30 AM) - Q&A and Quiz 3 (Weeks 8-10) in Moodle (5%)

Attendance Requirements

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

Course Resources

Recommended Resources

AS 1100.101—1992 Technical drawing: General principles (Please log in to **UNSW library** first and search for **SAI Global**. Sign in the website and then you can get **all Australian Standards** from SAI Global).

AS 1100.301—2008 Technical drawing: Architectural drawing

BIM Handbook: A Guide to Building Information Modeling for Owners, Designers, Engineers, Contractors, and Facility Managers

Level-of-development-specification

Design Thinking and Building Information Modelling

BIM-Enabled Design Collaboration Processes in Remote Architectural Practice and Education in Australia

Course Evaluation and Development

Students' feedback on the course will be gathered both formally and informally throughout the course duration and upon completion via face-to-face conversation, email and the myExperience system. Where possible, they will be addressed immediately to improve the student learning experience. Alternatively, changes to the content or delivery of the course will be addressed before the beginning of the following year.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	JuHyun Lee		Room 2006 (Anita B. Lawrence Centre West)		By appointment – organise via email	Yes	Yes
Tutor	Michael Da wes					No	No
	Tony Jin					No	No
	Peter Pittas					No	No
	Imad Khan					No	No
	Harrison Page					No	No
	Cathleen Lin					No	No
	Phi Bui Mai					No	No

Other Useful Information

Academic Information

For essential student information relating to:

- UNSW and Faculty policies and procedures;
- Student Support Services;
- Student equity and disability;
- Special Consideration in the event of illness or misadventure;
- Examination information;
- Review of results;

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

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

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.

Important note: UNSW has a “fit to sit/submit” rule, which means that if you sit an exam or submit a piece of assessment, you are declaring yourself fit to do so and cannot later apply for Special Consideration. This is to ensure that if you feel unwell or are faced with significant circumstances beyond your control that affect your ability to study, you do not sit an examination or submit an assessment that does not reflect your best performance. Instead, you should apply for Special Consideration as soon as you realise you are not well enough or are otherwise unable to sit or submit an assessment.

School Contact Information

beadmin@unsw.edu.au