UNSW Course Outline

BENV7501 Urban Data Visualisation - 2024

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General Course Information

Course Code : BENV7501
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 : Postgraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

Contemporary cities have grown extraordinarily complex and can be described and analysed through an increasing variety of social, economic and environmental data in different dimensions. In this course you will learn about new 3D tools that have been created to cope with

the large availability of urban data and models. Visualisation is a critical component of modelling, analysing and understanding the built environment, and visual statements can play a key role in shaping opinions, supporting planning, and helping policy and decision-making. This course will equip you with the theory and techniques to harness the power of 3D visualisation.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Critically assess the theory and processes of urban data visualisation.
CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.
CLO3 : Synthesise data and insights to achieve the visualisation aims for specific projects and scenarios.

Course Learning Outcomes	Assessment Item
CLO1 : Critically assess the theory and processes of urban data visualisation.	• 3D modelling and visualization • Database query and visualisation • Game engine project • Game Engines for Urban Visualisation
CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.	• 3D modelling and visualization • Database query and visualisation • Game engine project • Game Engines for Urban Visualisation
CLO3 : Synthesise data and insights to achieve the visualisation aims for specific projects and scenarios.	• 3D modelling and visualization • Game engine project • Game Engines for Urban Visualisation

Learning and Teaching Technologies

Moodle - Learning Management System

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
3D modelling and visualization Assessment Format: Individual	20%	Due Date: Week 4: 30 September - 06 October
Database query and visualisation Assessment Format: Individual	30%	Due Date: Week 8: 28 October - 03 November
Game engine project Assessment Format: Group	20%	Due Date: Week 12: 25 November - 01 December
Game Engines for Urban Visualisation Assessment Format: Individual	30%	Due Date: Week 12: 25 November - 01 December

Assessment Details

3D modelling and visualization

Assessment Overview

You will select a desktop visualisation environment suitable to a specific application and available data, and then integrate data to produce synthesised visualisations. Grading against assessment criteria, with written feedback provided.

Course Learning Outcomes

- CLO1 : Critically assess the theory and processes of urban data visualisation.
- CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.
- CLO3 : Synthesise data and insights to achieve the visualisation aims for specific projects and scenarios.

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.

Database query and visualisation

Assessment Overview

You will utilise your theoretical and practical knowledge to import and export data from a database. You will analyze and determine the most suitable database approaches for 3D data management for a specific urban application. Grading against assessment criteria with written feedback provided.

Course Learning Outcomes

- CLO1 : Critically assess the theory and processes of urban data visualisation.
- CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.

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Game engine project

Assessment Overview

By applying your knowledge and models from previous assignments, you will learn how to work with a specified game engine. Working in groups, you will design interactive 3D visualisations and simulations. Peer to peer feedback and grading against assessment criteria.

Course Learning Outcomes

- CLO1 : Critically assess the theory and processes of urban data visualisation.
- CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.
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Game Engines for Urban Visualisation

Assessment Overview

You will prepare a report documenting your concepts and individual contributions to the group project in Assessment 3. Your report will reflect on your ability to create a visualisation and interaction environment conducive to solving urban planning or urban analysis tasks. Marking against assessment criteria, with written feedback provided.

Course Learning Outcomes

- CLO1 : Critically assess the theory and processes of urban data visualisation.
- CLO2 : Apply theoretical insights and practical urban data visualisation skills to urban problems.
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General Assessment Information

Grading Basis

Standard

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 9 September - 15 September	Lecture	
	Laboratory	
Week 2 : 16 September - 22 September	Lecture	
	Laboratory	
Week 3 : 23 September - 29 September	Lecture	
	Laboratory	
Week 4 : 30 September - 6 October	Lecture	
	Laboratory	
Week 5 : 7 October - 13 October	Lecture	
	Laboratory	
Week 6 : 14 October - 20 October	Other	Flex week - no classes in Week 6
Week 7 : 21 October - 27 October	Lecture	
	Laboratory	
Week 8 : 28 October - 3 November	Lecture	
	Workshop	
Week 9 : 4 November - 10 November	Lecture	
	Workshop	
Week 10 : 11 November - 17 November	Lecture	
	Workshop	
Week 12 : 25 November - 1 December	Presentation	

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.

Course Resources

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	Sisi Zlatanova		ABL H13		BY APPOINTMENT, VIA EMAIL	Yes	Yes

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