UNSW Course Outline

# DDES9904 Models, Systems and Solution Design - 2024

Published on the 18 Sep 2024

## General Course Information

**Course Code :** DDES9904
**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 Art & Design
**Delivery Mode :** Online
**Delivery Format :** Standard
**Delivery Location :** Paddington
**Campus :** Paddington
**Study Level :** Postgraduate
**Units of Credit :** 6

**Useful Links**

Handbook Class Timetable

## Course Details & Outcomes

### Course Description

Models form the basis for how we represent the world and design solutions. While they are used differently across domains to analyse, test hypotheses, inform decisions and make predictions, model and systems thinking offers an important perspective to help us understand and shape

our environment.

Answering the question ‘what is a model?’, this course will give you a holistic perspective of models and systems examining how, why and when it is appropriate to model. You will consider how models can be used to help problem-solve and design solutions in environmental, humanitarian, and creative and creative contexts. Different modelling and systems paradigms will also be examined with a specific focus on their application in visualisation, simulation and immersive design.

## Course Aims

This course aims to:

(1) provide students with a holistic perspective of models and systems by examining how, why and when it is appropriate to model.

(2) enable students to understand how models can be used to help problem-solve and design solutions in environmental, humanitarian, and creative and creative contexts.

## Course Learning Outcomes

| Course Learning Outcomes |
| --- |
| CLO1 : Conceptualise the use of modelling by examining techniques used in different industries. |
| CLO2 : Integrate social, technical, and human perspectives into modelling and simulation design using a systems approach. |
| CLO3 : Evaluate modelling paradigms and their fitness for purpose in visualisation, simulation and immersive design. |

| Course Learning Outcomes | Assessment Item |
| --- | --- |
| CLO1 : Conceptualise the use of modelling by examining techniques used in different industries. | • Scope a model<br>• Create a model |
| CLO2 : Integrate social, technical, and human perspectives into modelling and simulation design using a systems approach. | • Scope a model<br>• Create a model |
| CLO3 : Evaluate modelling paradigms and their fitness for purpose in visualisation, simulation and immersive design. | • Create a model |

## Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

## Learning and Teaching in this course

Students are expected to view all online lectures and videos, complete all mandated readings and participate in class discussions. The in-class learning, feedback and discussions support are invaluable for assessment and  student progress.

# Assessments

## Assessment Structure

| Assessment Item | Weight | Relevant Dates |
|---|---|---|
| Scope a model<br>Assessment Format: Individual | 40% | Due Date: 13/10/2024 11:59 PM |
| Create a model<br>Assessment Format: Individual | 60% | Due Date: 19/11/2024 11:59 PM |

## Assessment Details

### Scope a model

**Assessment Overview**

In this assessment task you will develop a presentation that demonstrates your understanding of modelling paradigms and approaches, by evaluating the assumptions inherent in these approaches and their fitness for purpose, and how they can be applied to a certain issue.

Feedback will be provided on a regular basis in studio through discussion with peers and tutors. Summative assessment and feedback will be provided digitally based on the rubric.

**Course Learning Outcomes**

- CLO1 : Conceptualise the use of modelling by examining techniques used in different industries.
- CLO2 : Integrate social, technical, and human perspectives into modelling and simulation design using a systems approach.

**Detailed Assessment Description**

The submission will take the form of a recorded tutorial (PowerPoint) presentation, aimed at an audience with little or no knowledge of modelling. The model scoped in this assignment may also be used as a basis to inform Assignment 2.

You will choose a particular process, problem or need, which may be humanitarian, socially or creatively related, or may relate to something you encounter in your daily life. You will then select two different modelling approaches that could fit with your selected process, problem or need. You will then compare and contrast these approaches in the context of your selection, making reference to concepts from lectures and tutorials, and make a final decision on the best modelling approach for your selected process, problem or need, and your reasons for this choice.

**Submission notes**

Submission via Moodle Portal

**Assignment submission Turnitin type**

This assignment is submitted through Turnitin and students can see Turnitin similarity reports.

**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.

## Create a model

**Assessment Overview**

In this assessment task you are required to build a model relating to an industry issue and state its purpose. You will explain the choices made in developing the model, analysing how successful the model was in meeting its purpose and any ethical issues that arose from the modelling process.

Feedback will be provided on a regular basis in studio through discussion with peers and tutors. Summative assessment and feedback will be provided digitally based on the rubric.

**Course Learning Outcomes**

- CLO1 : Conceptualise the use of modelling by examining techniques used in different industries.
- CLO2 : Integrate social, technical, and human perspectives into modelling and simulation design using a systems approach.
- CLO3 : Evaluate modelling paradigms and their fitness for purpose in visualisation, simulation and immersive design.

**Detailed Assessment Description**

Once you have built and run your model, prepare and submit a written report with the following sections:

OVERVIEW

- Describe the problem
- Identify the modelling question
- Describe the relevance (why is this problem important to model, where is it applicable based. on literature)

STATE OF THE ART

- Describe current approaches (focus on M&S approaches to the problem)
- Present shortfalls of current approaches Proposed Approach
- Present your method (step by step approach of how you are going to model the problem)
- Present a justification of the approach and any choices made (if it is an existing approach explain why you selected it)

RESULTS

- Present model results (reference model-assumptions-constraints), including any relevant images
- Present analysis

**Submission notes**

Submission via Moodle Portal

**Assignment submission Turnitin type**

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# General Assessment Information

**Grading Basis**

Standard

# Course Schedule

| Teaching Week/Module | Activity Type | Content |
|---|---|---|
| Week 0 : 2 September - 8 September | Other | UNSW OWEEK |
| Week 1 : 9 September - 15 September | Tut-Lab | Introduction : What is a model? Why model? |
| Week 2 : 16 September - 22 September | Tut-Lab | Mapping Occurences |
| Week 3 : 23 September - 29 September | Tut-Lab | Modelling Paradigms |
| Week 4 : 30 September - 6 October | Tut-Lab | Historical Principles: Systems and Framing |
| Week 5 : 7 October - 13 October | Tut-Lab | Systems Thinking : Current Framing |
| Week 6 : 14 October - 20 October | Other | Flexiweek - Rest, Regenerate and Review |
| Week 7 : 21 October - 27 October | Tut-Lab | Solutions Design ; Solution Spaces Specs. |
| Week 8 : 28 October - 3 November | Tut-Lab | Communication, Analytics and Management |
| Week 9 : 4 November - 10 November | Tut-Lab | Modelling Complexity |
| Week 10 : 11 November - 17 November | Tut-Lab | Ethics, Bias, Truth, Validation |

## Attendance Requirements

### Attendance Requirements

Students are expected to attend all classes for each course in which they are enrolled. Failure to attend and participate in at least 80% of learning activities such as discussions, peer feedback, studio sessions, online activities, group work, etc., may result in you being flagged as at risk of failing the course. By punctually attending and actively participating in your classes you not only increase your own opportunities for developing your skills and knowledge, but will also help build a rigorous and engaged creative community with other students. If you are unable to attend classes, please inform your relevant Course Convenor. If the absence is for medical reasons, you will be required to present a medical certificate. If absences impact your ability to undertake assessment, then you should apply for Special Consideration.

## General Schedule Information

Students are expected  to allocate a minimum of 4 hours weekly course contact : 2 hours self-guided study online reviewing lectures and readings in Moodle and 2hrs in live tutorial discussions and activities -  either online or face to face.

# Course Resources

## Recommended Resources

All recommended readings and options for the hire of or access to technologies are listed in the Course Moodle. Students wishing to undertake further self directed training to upskill in bespoke software programs can access UNSW Linkedin Learning  and or visit the Maker Centres.

## Course Evaluation and Development

Feedback and evaluation occurs through myExpereince and myFeedback matters in Moodle

# Staff Details

| Position | Name | Email | Location | Phone | Availability | Equitable Learning Services Contact | Primary Contact |
|---|---|---|---|---|---|---|---|
| | Andrew Yip | | | | | No | Yes |
| Lecturer | James McRae | | | | | 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-specific Information

### Risk of Failure Warnings

If you are at risk of failing the course, because of lack of attendance, low marks in assignments, failing to submit assignments, or lack of participation or engagement, you may be notified by

email. Please ensure you read your university email, and respond to any official risk of failure warning promptly. NOTE – if the warning email is sent to your UNSW e-Mail address, it is considered as being read by you whether you check your UNSW email or not.

**Late Submission Penalties**

If you believe that circumstances will prevent you from submitting an assessment on time, please notify your course convenor as soon as possible. There will be penalties applied for being late and a clear 'no later than' date beyond which submission won't be accepted. Where a Special Consideration is not applied for, and a student assessment is late, the following guidelines apply:

1. Up to 5 days after due date, a penalty of 5% (of maximum mark for assignment) will be applied for each day late (e.g. an assignment that is 3 days late would have its mark reduced by 15%). Please note - for the purpose of deduction calculation, a 'day' is each 24-hour period (or part thereof) past the stipulated deadline for submission within the calendar year (including weekends and public holidays). Task with a percentage mark - If the task is marked out of 100%, late submission will attract a deduction of 5% from the mark awarded to the student for every 24-hour period (or part thereof) past the stipulated deadline.

Example: A student submits an essay 48 hours and 10 minutes after the stipulated deadline. The essay is marked out of 100%. A 3 day late penalty will be applied (3 x 5% = 15%). The essay receives a mark of 68%. The student's mark will therefore be reduced to 53% (68% - 15%).

2. Beyond 5 days late, no submission will be accepted.

**Special Consideration**

Please note that the University's Special Consideration process allows students to apply for an extension within 3 days of the assessment due date. This provides for more extensive extensions, subject to documentation, and Course Convenor approval. You can apply for special consideration online through my.UNSW.edu.au. More information about special consideration can be found here: https://www.student.unsw.edu.au/special-consideration

NOTE: If you are experiencing issues related to your access to class material or difficulty with technology, make sure you notify your lecturer as soon as possible, well before any assessment due date. Last minute requests for extensions due to computer failure, file corruption, printing problems etc. do not qualify students for special consideration or extensions. Students are expected to maintain regular backups of their work at all times.

### Educational adjustments

Educational adjustments can be applied to assessments if you are living with a disability, a long term medical condition, a mental health condition, and/or are a carer of individuals with a disability. The Equitable Learning Service (ELS) determines adjustments based on medical documentation and communicates these via an Equitable Learning Plan (ELP). To receive educational adjustments for equitable learning support, you must first register with Equitable Learning Services (ELS). More information about Equitable Learning Services can be found here https://student.unsw.edu.au/els

### Supplementary Assessment

Supplementary assessments are available to students in this course who have failed an assessment but have subsequently had an application for Special Consideration approved by the university. The supplementary assessment may take a different form than the original assessment and will be defined by the course convenor - but it will address the same learning outcomes as the original assessment. If Special Consideration has not been awarded, the maximum mark that may be awarded for a supplementary assessment is 50% of the full assessment mark.

### Academic Honesty and Plagiarism

Plagiarism is taking the ideas, words, images, designs or objects of others and passing them off as your own. Plagiarism is a type of intellectual theft. Plagiarism can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. Plagiarism can have serious consequences, so it is important that students be aware of what it is, and how to avoid it. All written submissions are automatically checked for plagiarism using the Turnitin site. For further information, please see the Academic Integrity & Plagiarism website https://www.student.unsw.edu.au/plagiarism.

### Referencing Requirements for Assessments

Your course convenor will inform you what referencing system this course follows. Useful guidelines on how to reference according to various systems can be found at: https://student.unsw.edu.au/referencing.

You may follow these guidelines in your assessment tasks, or seek additional advice from your lecturer. Styles for Endnote are downloadable from the Endnote website. Accurate and correct

referencing is an important academic prerequisite at University level, and if your work does not meet these requirements, it may be marked down, or in more serious cases, it may be treated as an instance of plagiarism and academic dishonesty.

**Use of Generative AI**

As AI applications continue to develop, and technology rapidly progresses around us, we remain committed to our values around academic integrity at UNSW. Your work must be your *own* and where the use of AI tools, such as ChatGPT, have 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. If in doubt, please seek advice from the Course Convenor prior to using generative AI tools.

https://www.student.unsw.edu.au/assessment/ai

**Health and Safety**

Ensuring student and staff health and safety is very important at UNSW Art & Design. Health and safety is everyone's responsibility. As a student, you have a responsibility not to do anything that risks your own health and safety, or the health or safety of your fellow students, staff members or visitors. This means, for example, exiting the building during a fire drill; wearing personal protective equipment and clothing (PPEC) when staff or signage instructs you to do so; undertaking induction to using equipment or carrying out processes that require specific knowledge; and reporting hazards or incidents to your lecturer or supervisor as soon as you become aware of them. For more information, please see https://safety.unsw.edu.au/.

**Additional Support and Resources**

At UNSW you can also find support and resources if you need help with your personal life, getting your academic success on track or just want to know how to stay safe. See https://www.student.unsw.edu.au/wellbeing.

Additional support for students is available by contacting the following centres:

- Student Support and Development https://www.student.unsw.edu.au/support
- Student Support Advisors: https://www.student.unsw.edu.au/advisors
- Mental Health Support: https://www.student.unsw.edu.au/mental-health-support
- Academic Skills and Support https://www.student.unsw.edu.au/skills

- UNSW IT Service Centre https://www.myit.unsw.edu.au/
- Student Gateway: https://www.student.unsw.edu.au/
- Equitable Learning Services: https://www.student.unsw.edu.au/equitable-learning
- Faculty Resources and Support: https://www.unsw.edu.au/arts-design-architecture/student-life/resources-support
- Arc: https://www.arc.unsw.edu.au/

**After Hours Access to the Paddington Campus**

The core operating hours for the Paddington Campus are below. All students have access to the campus during these hours:

- Monday to Friday 0800 – 2100
- Saturday 0900 – 1700

Some students are permitted to have "After Hours Access" (AHA) to the campus upon completion of a series of inductions. The inductions are dependent on location, as well as the types of activities undertaken in those locations. The first of these is this Primary Induction, and this must be completed online https://my.artdesign.unsw.edu.au. All students requiring AHA are required to complete this induction. The Primary Induction gives access to the following Low Risk areas:

Post Graduate Students

- PG Research students – Level 4 F Block, Computer Labs and Learning Commons
- Master of Design students – Level 3 D Block, Computer Labs and Learning Commons
- Master of Curating and Cultural Leadership students – D207, Computer Labs and Learning Commons

Honours Students

- Fine Arts – Level 3 F Block, Computer Labs and Learning Commons
- Design – Level 1 E Block, Computer Labs and Learning Commons
- Media Arts – Level 3 F Block, Computer Labs and Learning Commons

Subsequent inductions are workshop and lab specific, and are conducted face-to-face by the UNSW Art & Design Technical staff. Students and staff must first successfully complete the Primary Induction before requesting a Workshop/Lab specific Induction.

## School Contact Information

**UNSW School of Art & Design**

**Faculty of Arts, Design & Architecture**

Paddington Campus

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Paddington NSW 2021

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