



## UNSW Course Outline

# LAND7221 Advanced Urban Landscape Visualisation - 2024

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## General Course Information

**Course Code :** LAND7221

**Year :** 2024

**Term :** Term 1

**Teaching Period :** T1

**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

Advanced Urban Landscape Visualisation introduces methods of representing complex landscape systems and dynamics, using visual scripting interfaces and technologies. You will explore design decisions by simulating and evaluating changes to environmental conditions with

a focus on landform, hydrology and planting.

## Course Learning Outcomes

| Course Learning Outcomes  |
|---|
| CLO1 : Evaluate environmental conditions through technological principles and simulations.  |
| CLO2 : Examine associations between design parameters and outcomes.   |
| CLO3 : Apply adaptive technologies to explore and test design standards.  |
| CLO4 : Synthesise adaptive technology outcomes to inform design outcomes.   |
| CLO5 : Communicate complex landscape architectural information, concepts and propositions to a professional industry standard, using digital visualisation tools. |

| Course Learning Outcomes  | Assessment Item   |
|---|---|
| CLO1 : Evaluate environmental conditions through technological principles and simulations.  | <ul style="list-style-type: none"><li>• Analysing Environmental Systems</li><li>• Designing an Environmental System</li></ul>   |
| CLO2 : Examine associations between design parameters and outcomes.   | <ul style="list-style-type: none"><li>• Reflecting on and Communicating your Design</li><li>• Analysing Environmental Systems</li><li>• Designing an Environmental System</li></ul> |
| CLO3 : Apply adaptive technologies to explore and test design standards.  | <ul style="list-style-type: none"><li>• Reflecting on and Communicating your Design</li><li>• Designing an Environmental System</li></ul>   |
| CLO4 : Synthesise adaptive technology outcomes to inform design outcomes.   | <ul style="list-style-type: none"><li>• Reflecting on and Communicating your Design</li><li>• Designing an Environmental System</li></ul>   |
| CLO5 : Communicate complex landscape architectural information, concepts and propositions to a professional industry standard, using digital visualisation tools. | <ul style="list-style-type: none"><li>• Reflecting on and Communicating your Design</li><li>• Designing an Environmental System</li></ul>   |

## Learning and Teaching Technologies

Moodle - Learning Management System

# Assessments

## Assessment Structure

| Assessment Item  | Weight | Relevant Dates   |
|--|--------|--|
| Analysing Environmental Systems<br>Assessment Format: Individual             | 20%    | Start Date: Not Applicable<br>Due Date: Week 3: 26 February - 03 March |
| Designing an Environmental System<br>Assessment Format: Group                | 40%    | Start Date: Not Applicable<br>Due Date: Week 9: 08 April - 14 April    |
| Reflecting on and Communicating your Design<br>Assessment Format: Individual | 40%    | Start Date: Not Applicable<br>Due Date: Week 12: 29 April - 05 May     |

## Assessment Details

### Analysing Environmental Systems

#### Assessment Overview

You will analyse an environmental system to reveal critical components required for the systems performance. Grading will be done against assessment criteria accompanied by written feedback.

#### Course Learning Outcomes

- CLO1 : Evaluate environmental conditions through technological principles and simulations.
- CLO2 : Examine associations between design parameters and outcomes.

#### Detailed Assessment Description

Detailed Description:

This assessment aims to refine your skills in analytical research and synthesis of information.

- You are to select an urban site and deconstruct the environmental system based on hydrological functions.
  - This analysis is to be represented through a system diagram which describes the behaviour and structure of the components in the hydrological environmental system.
    - You may use any system diagram style to fully communicate the flow and connection of the components.
- A poster is to be created in which the system diagram should be embedded
  - Additional information which relates to the hydrological system can be added (text, images, tables, etc.). However this should be complimentary information, building upon the system diagram.
  - Include references (APA).

Submission VIA Moodle:

- System diagram - PDF Poster (A2 size)

#### Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

## Designing an Environmental System

#### Assessment Overview

In groups, you will undertake environmental design research to iteratively design an intervention system that responds to challenges within a selected site. You will synthesise and calibrate the environmental context within a parametric system for the design, analysis, and optimisation of the proposed interventions. Grading will be done against assessment criteria accompanied by written feedback. Individual contributions will be assessed.

#### Course Learning Outcomes

- CLO1 : Evaluate environmental conditions through technological principles and simulations.
- CLO2 : Examine associations between design parameters and outcomes.
- CLO3 : Apply adaptive technologies to explore and test design standards.
- CLO4 : Synthesise adaptive technology outcomes to inform design outcomes.
- CLO5 : Communicate complex landscape architectural information, concepts and propositions to a professional industry standard, using digital visualisation tools.

#### Detailed Assessment Description

##### Detailed Description:

Continuing from the individual research of a site and its environmental system from A1, each group will choose one site to complete the tasks for A2.

- This assessment aims to refine your skills in environmental design research and design thinking.
  - You are to focus on generating maturity and experience in manipulating existing environmental systems to mitigate and optimise the hydrological performance of the site.
- The assessment task should clearly show 3 phases of the design process; **1. Concept Design, 2. Preliminary Design, 3. Design Development.**
  - These three phases should be iterative, with each phase building upon the previous phases' developments

Three phases of design:

##### 1. Concept Design:

- Research and identify critical components in the site's hydrological function which can be optimised to mitigate potential detrimental effects.
- Investigate and analyse existing hydrological design interventions which can be applied to the site.
- Create a conceptual design proposal for the site focusing on resolving the detrimental hydrological system.
  - Delineate your system's topological configuration and typologies using sketches, diagrams, and images, include analytical observations on: how you structured your design and why; what design principles influenced these decisions.

## 2. Preliminary Design:

- Critically analyse and describe your first set of experiments and results using sketches, diagrams, and images. Include analytical observations on how the first set of experiments and results follow precise scientific principle and design considerations.
- Demonstrate that your preliminary design emerges from the combination of key factors: the foundation research that you undertook for concept design; , and the first set of simulations that you ran and evaluated for this Task.

## 3. Design Development:

- Critically analyse and describe your second set of experiments and results using sketches, diagrams, and images. Include observations on how and why you implemented your algorithm after the first set of experiments and results from the preliminary design. Critically compare the first set of results with the seconds et of results, understanding and explaining the iterative design process.

### Submission VIA Moodle:

- PDF Posters (clearly showing the 3 phases of the design process) - A2 size
- Grasshopper & Rhino Files

### Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

## Reflecting on and Communicating your Design

### Assessment Overview

You will develop a visual media artwork that communicates the iterative design, analysis, and optimisation of an environmental challenge to professional industry standards. You will present your artwork in poster presentation format. Grading will be done against assessment criteria accompanied by written feedback.

## Course Learning Outcomes

- CLO2 : Examine associations between design parameters and outcomes.
- CLO3 : Apply adaptive technologies to explore and test design standards.
- CLO4 : Synthesise adaptive technology outcomes to inform design outcomes.
- CLO5 : Communicate complex landscape architectural information, concepts and propositions to a professional industry standard, using digital visualisation tools.

## Detailed Assessment Description

### **Detailed Description:**

Continuing from A2, you are to develop 1 (individual) poster which critically communicates the resolution made from the 3 design phases, and 1 (group) animation/video which conveys the entire project.

- The poster should include a layered axonometric artwork which shows a breakdown of the critical components of the site.
  - Further images, diagrams, and graphics that complement the communication of the site and the resolution of the hydrological challenges can be embedded.
- The video should communicate the story of the site, explaining the challenges and the resolution of the hydrological system.
  - The three design phases from A2 should be clearly communicated.

### **Submission VIA Moodle:**

- Individual Poster - (1 page, A2 size)
- Group Video - (3 minutes)

### Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

## **General Assessment Information**

### Grading Basis

Standard

# Course Schedule

| Teaching Week/Module               | Activity Type | Content  |
|------------------------------------|---------------|--|
| Week 1 : 12 February - 18 February | Lecture       | This lecture will introduce you to the course structure, expectations, assessments, software, and progression of weekly studios. The lecture will also introduce you to visualisation and representation of landscape through various forms whilst discussing the natural phenomena of emergence and how understanding of landscape can be derived from emergent patterns. |
|                                    | Studio        | - Landscape visualisation through analogue processes.<br>- Introduction to Rhino and Grasshopper.  |
| Week 2 : 19 February - 25 February | Lecture       | This lecture will introduce you to the concepts of natural forces that shape landscapes and how complex systems can be utilised to represent and communicate these patterns and structures.  |
|                                    | Studio        | - Analogue representation and visualisation of natural forces.<br>- Importing topographic data in Grasshopper.   |
| Week 3 : 26 February - 3 March     | Lecture       | This lecture will outline the geographic features that can be communicated through data, topology, and typology. This lecture will also outline the computational processes that can be applied to analysing and understanding landscapes.   |
|                                    | Assessment    | A1 submission via Moodle.  |
|                                    | Studio        | - Manipulating landscapes within a digital environment.  |
| Week 4 : 4 March - 10 March        | Lecture       | This lecture will outline the geometric design and analysis of landscapes through 3D modeling and computational design workflows.  |
|                                    | Studio        | - Computational rainfall analysis and drainage maps.<br>- Rainfall simulation.   |
| Week 5 : 11 March - 17 March       | Lecture       | This lecture will introduce you to data visualisation and communication through various forms of media types and formats   |
|                                    | Studio        | - Computational rainfall analysis (II)<br>- Vegetation simulation  |
| Week 6 : 18 March - 24 March       | Lecture       | This lecture will outline the cause and effects of the components within systems through design processes  |
|                                    | Studio        | - Vector graphics analysis for landscapes.<br>- Assessment progress consultation/feedback.   |
| Week 7 : 25 March - 31 March       | Lecture       | This lecture will introduce you to computational workflows for analysing systems through iterative modeling processes and performance based optimisations.   |
|                                    | Studio        | - Sequencing for time representation.<br>- Recursive 3D modeling.<br>- Assessment progress consultation/feedback.  |
| Week 8 : 1 April - 7 April         | Lecture       | This lecture will outline the optimisation workflows and methods for creating variations and iterations based off performative data.   |
|                                    | Studio        | - Optimisation methods for landscape design and analysis.<br>- Assessment progress consultation/feedback.  |
| Week 9 : 8 April - 14 April        | Lecture       | This lecture will introduce you to techniques on effectively communicating designs through non-traditional methods,  |
|                                    | Assessment    | A2 submission via Moodle.  |
| Week 10 : 15 April - 21 April      | Lecture       | This lecture will give a recap and reflection of the course  |
|                                    | Studio        | - Static and dynamic visualisation.<br>- Assessment progress consultation/feedback.  |
| Week 11 : 22 April - 28 April      | Lecture       | No lecture   |
|                                    | Studio        | No studio  |
| Week 12 : 29 April - 5 May         | Assessment    | A3 submission via Moodle.  |

## 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**

Each week will consist of a lecture and studio exercises. A laptop is required to follow studio exercises.

## **Course Resources**

### **Prescribed Resources**

Rhinoceros 3D is required for the course work.

## **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 |
|------------------------|--------------------------|-------|----------|-----------------|---------------------------------|-------------------------------------|-----------------|
| Discipline coordinator | Sara Padgett Kjaersgaard |       | 4023     | Microsoft TEAMS | please email for an appointment | No                                  | No              |
| Convenor               | Daniel Yu                |       |          | Microsoft TEAMS | please email for an appointment | 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 Plagiarism

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](#)

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### **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 [externaltelsupport@unsw.edu.au](mailto:externaltelsupport@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