UNSW Course Outline

DESN3000 Strategic Design Innovation - 2024

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General Course Information

Course Code : DESN3000
Year : 2024
Term : Term 2
Teaching Period : T2
Is a multi-term course? : No
Faculty : Faculty of Engineering
Academic Unit : Faculty of Engineering
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

Over the last three decades design innovation has become strategic: success in design requires a strategy for managing the broader problems of innovation. As design has gained importance, it also has become relevant to a wide array of stakeholders. This has added complexity to the way

in which design should be undertaken.

Design is an important instrument of innovation in manufacturing and service industries, as well as in public, semi-public and humanitarian organisations. These environments set many types of requirements for innovation, including price points, brand requirements, competition, technological and brand legacies, government regulations, and ethics. They almost always require an analysis of the ethical environment, which is often but not always coded into professional rules and regulations.

These environments are usually ambiguous, dynamic and reactive, and designers cannot control them. To innovate in these environments, designers need strategies for identifying and managing these contextual requirements.

DESN3000 teaches you skills in strategic design innovation. These include: skills for capturing the boundary conditions that create conditions for innovation; skills for creating design concepts that provide a fit to the strategic environment; skills for creating innovation strategies that help them to innovate in with multiple stakeholders who often have conflicting values and shifting interests; skills for identifying ethical problems involved in design decisions; and skills for managing teams and projects in strategic context.

Course Aims

DESN3000: Strategic Design Innovation gives students skills to manage and communicate design processes in the context of business and ethical drivers they cannot control. The students will learn: strategic design skills; business and ethical skills; management and communication skills in multifaculty environment.

Course Learning Outcomes

Course Learning Outcomes
CLO1 : Employ strategic design skills to create design concepts in ambiguous business and social deployment contexts.
CLO2 : Analyse and identify ethical, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.
CLO3 : Employ strategies to identify and examine ethical problems in design and to engage in a respectful and inclusive dialogue to formulate a consistent, coherent response to these problems by applying codes of ethical conduct and ethical decision models.
CLO4 : Develop management techniques and leadership strategies for working within multidisciplinary teams with a variety of skills and objectives.
CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Course Learning Outcomes	Assessment Item
CLO1 : Employ strategic design skills to create design concepts in ambiguous business and social deployment contexts.	• Engineering proposal • Engineering plan
CLO2 : Analyse and identify ethical, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.	• Engineering pitch • Engineering proposal • Engineering plan
CLO3 : Employ strategies to identify and examine ethical problems in design and to engage in a respectful and inclusive dialogue to formulate a consistent, coherent response to these problems by applying codes of ethical conduct and ethical decision models.	• Ethics report • Engineering plan
CLO4 : Develop management techniques and leadership strategies for working within multidisciplinary teams with a variety of skills and objectives.	• Engineering pitch • Engineering plan
CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.	• Ethics report • Engineering proposal • Engineering pitch • Engineering plan

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams | Echo 360

Additional Course Information

Each week, students are expected to meet independently with their team. Arranging these regular meeting should be one of your first actions after teams are formed.

The normal workload expectations of a student are approximately 25 hours per term for each UOC, including class contact hours, other learning activities, preparation and time spent on all assessable work.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates
Engineering proposal Assessment Format: Individual	20%	
Ethics report Assessment Format: Individual	25%	
Engineering plan Assessment Format: Group	30%	
Engineering pitch Assessment Format: Group	25%	

Assessment Details

Engineering proposal

Assessment Overview

Assessment length: 3 minutes

Present an engineering proposal that involves an engineering product . Students individually submit a short video recording of the presentation to Moodle

Course Learning Outcomes

- CLO1 : Employ strategic design skills to create design concepts in ambiguous business and social deployment contexts.
- CLO2 : Analyse and identify ethical, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.
- CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Assessment Length

3 minutes

Submission notes

Submission on Moodle

Assignment submission Turnitin type

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

Ethics report

Assessment Overview

Assessment length: 2000 words

Write a report on an engineering ethical dilemma. Students may choose a topic from a list or have their own topic pre-approved by their demonstrator before submission. Students individually submit the report to Moodle.

Course Learning Outcomes

- CLO3 : Employ strategies to identify and examine ethical problems in design and to engage in a respectful and inclusive dialogue to formulate a consistent, coherent response to these problems by applying codes of ethical conduct and ethical decision models.
- CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Assessment Length

5 pages

Submission notes

Submission on Moodle

Assignment submission Turnitin type

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

Engineering plan

Assessment Overview

Assessment length: 30 pages

Students write an engineering plan that covers design, business and ethical aspects of their project. The plan will require empirical evidence to back up the argumentation regarding business, including target market analysis, product strategy, social and ethical constraints, and finance. Team evaluation is used to ensure equitable participation of members. Students complete a questionnaire, quantifying the relative contribution of team members. Qualitative comments provide a cross-reference for conflicting cases. A member from each student team will submit the report document to Moodle.

Course Learning Outcomes

- CLO1 : Employ strategic design skills to create design concepts in ambiguous business and

social deployment contexts.
- CLO2 : Analyse and identify ethical, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.
- CLO3 : Employ strategies to identify and examine ethical problems in design and to engage in a respectful and inclusive dialogue to formulate a consistent, coherent response to these problems by applying codes of ethical conduct and ethical decision models.
- CLO4 : Develop management techniques and leadership strategies for working within multidisciplinary teams with a variety of skills and objectives.
- CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Assessment Length

10 minutes

Submission notes

Live presentation + submission of slides on Moodle

Assessment information

Integrated Team evaluation for Business Pitch and Business Plan.

Students evaluate the relative contribution of each team member after submission. The results are used to moderate marks with a weighting of ± 25 %. In extreme cases, we reserve the right to award fewer marks, i.e. someone was found to contribute very little to the project.

Assignment submission Turnitin type

This is not a Turnitin assignment

Engineering pitch

Assessment Overview

Assessment length: 10 minutes

Present an engineering proposal that involves an engineering product and system behind it. A member from each student team will submit a recording of the video presentation to Moodle. Marks and feedback from the task will be returned within 1-week, to allow teams to implement the feedback in their Engineering Plan assessment task.

Course Learning Outcomes

- CLO2 : Analyse and identify ethical, business, regulatory and social constraints needed to develop a detailed design specification and a business plan that supports its goals.
- CLO4 : Develop management techniques and leadership strategies for working within

multidisciplinary teams with a variety of skills and objectives.
- CLO5 : Communicate complex concepts for business, engineering and design viewpoints in key presentation formats: oral, textual, and electronic.

Assessment Length

30 pages

Submission notes

Submission on Moodle

Assessment information

Integrated Team evaluation for Business Pitch and Business Plan.

Students evaluate the relative contribution of each team member after submission. The results are used to moderate marks with a weighting of ± 25 %. In extreme cases, we reserve the right to award fewer marks, i.e. someone was found to contribute very little to the project.

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 0 : 20 May - 26 May	Other	No activities
Week 1 : 27 May - 2 June	Lecture	Monday: Introduction Tuesday: Engineering case study
	Workshop	Workshop: times depend on team
Week 2 : 3 June - 9 June	Lecture	Monday: Engineering planning Tuesday: Engineering planning (cntd)
	Workshop	Workshop: depends on team
Week 3 : 10 June - 16 June	Lecture	Monday: public holiday Tuesday: Introduction to Engineering Ethics
	Workshop	Workshop: depends on team
Week 4 : 17 June - 23 June	Lecture	Monday: Engineering ethical theory Tuesday: free working time for assignment
	Workshop	Workshop: depends on team
Week 5 : 24 June - 30 June	Lecture	Monday: design and systems engineering Tuesday: scheduled free time for preparing assignment
	Workshop	Workshop: depends on team
Week 6 : 1 July - 7 July	Other	No scheduled activities
Week 7 : 8 July - 14 July	Lecture	Monday: Entrepreneurship panel Tuesday: Student indusry and design panel
	Workshop	Workshop: depends on team
Week 8 : 15 July - 21 July	Lecture	Monday: system integration Tuesday: scheduledfree time for teamwork
	Workshop	Workshop: depends on team
Week 9 : 22 July - 28 July	Lecture	Monday: teamwork lecture Tuesday: communication lecture
	Workshop	Workshop: depends on team
Week 10 : 29 July - 4 August	Lecture	Monday: networking lecture Tuesday: consultation time with course demonstrators and convenors
	Workshop	Workshop: depends on team

Attendance Requirements

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

Course Resources

Prescribed Resources

Please consult Moodle.

Recommended Resources

- UNSW Library website: https://www.library.unsw.edu.au/
- Microsoft Teams: https://teams.microsoft.com
- Moodle: https://moodle.telt.unsw.edu.au/course/view.php?id=59791

Course Evaluation and Development

Feedback - Feedback on the course is gathered periodically using various means, including the UNSW myExperience process, informal discussion in the final class for the course, and the School's Student/Staff meetings. Your feedback is taken seriously, and continual improvements are made to the course based, in part, on such feedback. In this course, recent improvements resulting from student feedback include the streamlining of assessments, implementation of more detailed workshop activities and retention of the thesis, industrial training and job skill lectures.

MechSoc - You can also provide feedback to MechSoc who will raise your concerns at student focus group meetings. As a result of previous feedback obtained for this course and in our efforts to provide a rich and meaningful learning experience, we have continued to evaluate and modify our delivery and assessment methods including updated lecture notes, workshops, blended learning resources, in-class demonstrations, and industry guest lectures.

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	Imrana Kabir		Room 505, Level 5, Ainsworth Building J17	Microsoft Teams	Consultations available during usual business hours upon request	No	No
Demonstrator	Lauren Wood		NA	Microsoft Teams	During demonstration hours	No	No
Convenor	Ilpo Koskinen		Room 505, Level 5, Ainsworth Building J17	Microsoft Teams	Consultations available during usual business hours upon request	Yes	Yes
Head demonstrator	Lauren Wood				During demonstration hours	No	No
Demonstrator	Sherry Zhang				During demonstration hours	No	No
	Kei-fu Low				During demonstration hours	No	No
	Shaun Wang				During demonstration hours	No	No
	Christian Arango				During demonstration hours	No	No
	Zac Roucheouste				During demonstration hours	No	No
	Oltan Sevinc				During demonstration hours	No	No
	John Nalus				During demonstration hours	No	No

Other Useful Information

Academic Information

I. Special consideration and supplementary assessment

If you have experienced an illness or misadventure beyond your control that will interfere with your assessment performance, you are eligible to apply for Special Consideration prior to, or within 3 working days of, submitting an assessment or sitting an exam.

Please note that UNSW has a Fit to Sit rule, which means that if you sit an exam, you are declaring yourself fit enough to do so and cannot later apply for Special Consideration.

For details of applying for Special Consideration and conditions for the award of supplementary assessment, please see the information on UNSW's Special Consideration page.

II. Administrative matters and links

All students are expected to read and be familiar with UNSW guidelines and polices. In particular, students should be familiar with the following:

- Attendance
- UNSW Email Address
- Special Consideration
- Exams
- Approved Calculators
- Academic Honesty and Plagiarism
- Equitable Learning Services

III. Equity and diversity

Those students who have a disability that requires some adjustment in their teaching or learning environment are encouraged to discuss their study needs with the course convener prior to, or at the commencement of, their course, or with the Equity Officer (Disability) in the Equitable Learning Services. Issues to be discussed may include access to materials, signers or note-takers, the provision of services and additional exam and assessment arrangements. Early notification is essential to enable any necessary adjustments to be made.

IV. Professional Outcomes and Program Design

Students are able to review the relevant professional outcomes and program designs for their streams by going to the following link: https://www.unsw.edu.au/engineering/student-life/student-resources/program-design.

Note: This course outline sets out the description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle or your primary learning management system (LMS) should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline/Moodle/LMS, the description in the Course Outline/Moodle/LMS applies.

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing them off as your own.*

Plagiarism is a type of intellectual theft. It can take many forms, from deliberate cheating to accidentally copying from a source without acknowledgement. UNSW has produced a website with a wealth of resources to support students to understand and avoid plagiarism, visit: student.unsw.edu.au/plagiarism. The Learning Centre assists students with understanding academic integrity and how not to plagiarise. They also hold workshops and can help students one-on-one.

You are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting and the proper referencing of sources in preparing all assessment tasks.

Repeated plagiarism (even in first year), plagiarism after first year, or serious instances, may also be investigated under the Student Misconduct Procedures. The penalties under the procedures can include a reduction in marks, failing a course or for the most serious matters (like plagiarism in an honours thesis or contract cheating) even suspension from the university. The Student Misconduct Procedures are available here:

www.gs.unsw.edu.au/policy/documents/studentmisconductprocedures.pdf

Submission of Assessment Tasks

Work submitted late without an approved extension by the course coordinator or delegated authority is subject to a late penalty of five percent (5%) of the maximum mark possible for that assessment item, per calendar day.

The late penalty is applied per calendar day (including weekends and public holidays) that the assessment is overdue. There is no pro-rata of the late penalty for submissions made part way through a day. This is for all assessments where a penalty applies.

Work submitted after five days (120 hours) will not be accepted and a mark of zero will be awarded for that assessment item.

For some assessment items, a late penalty may not be appropriate. These will be clearly indicated in the course outline, and such assessments will receive a mark of zero if not completed by the specified date. Examples include:

- Weekly online tests or laboratory work worth a small proportion of the subject mark;
- Exams, peer feedback and team evaluation surveys;
- Online quizzes where answers are released to students on completion;
- Professional assessment tasks, where the intention is to create an authentic assessment that has an absolute submission date; and,
- Pass/Fail assessment tasks.

Faculty-specific Information

Engineering Student Support Services – The Nucleus - enrolment, progression checks, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries e.g. admissions, fees, programs, credit transfer

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)