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# 1. Staff contact details

Contact details and consultation times for course convenor

Name: Dr. Ang Liu

Office Location: Ainsworth Building (J17) Level 4, Room 408

Tel: (02) 9385 4080

## Contact hours

	Section	Day	Time	Location	Week
Lectures	A and Web	Tue			

## Summary and Aims of the course

This course focuses on the subject of engineering design, which plays the role in guiding an engineer or a team of engineers to think like a designer along a systemic, rational, and creative pathway, towards breakthrough innovations of new product/service. The course

## 4. Teaching strategies

Design is the hallmark of human creativity in general and the essence of the engineering profession in particular. Engineering students can learn “design” most effectively when they:

- x Profoundly understand the social-technical nature of engineering design, as well as the fundamental difference between “do the right thing” and “do the thing right”.
- x Actively engage in continuous interactions with instructor, classmates, teammates, and practitioners to construct not only novel artifacts but also new knowledge, skill, wisdom, and entrepreneurship.
- x Proactively employ the design insights gained in classroom to frame their daily life struggles, decisions, and observations as a unique innovation opportunity and to create both purposeful and functional “artifacts” to capture the opportunity.

Based on the above teaching philosophy, this course adopts the following teaching strategies: face-to-face lecture, demonstration, project-based learning, etc.

**Face-to-Face Lecture:** the purpose of lectures is to deliver design knowledge and deepen understanding of the delivered knowledge. Generally speaking, there are two kinds of lectures for this course: content-oriented and context-focused. The former is intended to deepen your theoretical understanding of relevant design theory and methodology, whereas the latter focuses on enhancing your practical skills of using design methods to address real-world problems. During the lecture time, you are expected to pay 100% of your attention. You are highly encouraged to take notes.

**Demonstration:** during demonstration sessions, the demonstrators will showcase how to use the design methods covered in the lectures to address real-world design problems, answer any questions about the course assignments, and provide guidance for your team project. Different from the lectures, there is no standard format for a demonstration session. The demonstrators should be treated, with full respect, as your “coach” who can only guide you through the practice instead of competing/ 11.04cw 0.337 ( )Tj -6.6( )11.3(t)-6.6ou the(f)-17.5(o)10.5n t

## 5. Course schedule

Week <sup>a</sup>	Date	Lecture Topic	Demonstration Topic	Deliverable Due
1	07/24--07/30	Definition of design, innovation, and design thinking	NO demonstration session in week 1	
2	07/31--08/06	Solicit customer voices and identify an innovation opportunity	Team building and logbook writing	Team Formation
3	08/07--08/13	Formulate a design problem as a set of functional requirements	Demonstrate functional modelling and report writing	
4	08/14--08/20	Map customer needs to functional requirements	Demonstrate QFD and report writing	T1: Design Exercise (1)
5 <sup>b</sup>	08/21--08/27	Ideate design concepts by systemic design methods	Demonstrate concept generation and sketching	







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Where there is no special consideration granted, the 'deadline for absolute fail' in the table above indicates the time after which a submitted assignment will not be marked, and will

9.

## 11. Administrative matters and links

All students are expected to read and be familiar with School guidelines and policies, available on the intranet. In particular, students should be familiar with the following:

- x [Attendance, Participation and Class Etiquette](#)
- x [UNSW Email Address](#)
- x [Computing Facilities](#)
- x [Assessment Matters](#) (including guidelines for assignments, exams and special consideration)
- x [Academic Honesty and Plagiarism](#)
- x [Student Equity and Disabilities Unit](#)
- x [Health and Safety](#)
- x [Student Support Services](#)

# Appendix A: Engineers Australia (EA) Competencies

## Stage 1 Competencies for Professional Engineers

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals PE1.2