

**MA2079 Engineering Innovation and Design  
Course Outline**

<b>Academic Year</b>	2017/18	<b>Semester</b>	2
<b>Course Coordinator</b>	Chou Siaw Meng		
<b>Course Code</b>	MA2079		
<b>Course Title</b>	Engineering Innovation and Design		
<b>Pre-requisites</b>	NIL		
<b>No of AUs</b>	2		
<b>Contact Hours</b>	Lecture: 4 hrs Project: 39 hrs		
<b>Proposal Date</b>	20 Nov 2017		

**Course Aims**

This core course aims to introduce you to essential engineering and technopreneurial skills that are not covered in the regular curriculum and to provide you with an opportunity to innovate. The curriculum is formulated to enable you to experience some of the practical engineering learning in preparation for an engineering or technopreneurial career in the new knowledge-based economy.

**Intended Learning Outcomes (ILO)**

By the end of the course, you should be able to achieve the following:

- a) Core Outcome: Define the steps in setting-up and managing a Techno-Business.
- b) i-Project (innovative-Project) Outcome:
  - i. Generate and propose an innovative engineering or technological idea.
  - ii. Create a project/business plan for your idea.
  - iii. Design and produce a working prototype.
  - iv. Present and market your project/business plan.

**Course Content**

Introduction to business planning, and project management; practice in generating ideas and creative products, and create innovative engineering solutions through i-Project.

**Assessment (100% continuous assessment [CA])**

Component	Course LO Tested	Related Programme LO or Graduate Attributes	Weighting	Team/ Individual	Assessment rubrics
- Progress and Participation	a, b	*SLO f, h, i, j, k	30%	Individual	
- Student Peer Assessment			5%		
- Prototype/Product	a, b	SLO a to k	35%	Team	
- Business Plan Report			15%		
- Industry Recognition			15%		
Total			100%		

\*Programme SLOs (Student Learning Outcomes) are listed in Appendix 2.

**Formative feedback**

Formative feedback will be given verbally and/or in writing through the second meet-the-mentor session acknowledgement form.

**Learning and Teaching approach**

Approach	How does this approach support students in achieving the learning outcomes?
Seminar/consultation	Lectures and consultation sessions include idea generation, innovation, intellectual property issues, ethics, business plan writing, prototyping and marketing.
i-Project	In teams, students will brainstorm ideas and design innovative solutions to solve real problems. With the assistance of a mentor and guidance from a technician, the team will build a prototype/product.

**Reading and References**

NIL

**Course Policies and Student Responsibilities**

As a student of the course, you are required to abide by both the University Code of Conduct and the Student Code of Conduct. The Codes provide information on the responsibilities of all NTU students, as well as examples of misconduct and details about how students can report suspected misconduct. The university also has the Student Mental Health Policy. The Policy states the University's commitment to providing a supportive environment for the holistic development of students, including the improvement of your mental health and wellbeing. These policies and codes concerning students can be found in the following link:

<http://www.ntu.edu.sg/SAO/Pages/Policies-concerning-students.aspx>

## Academic Integrity

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

## Course Instructors

Instructor	Office Location	Phone	Email
Chou Siaw Meng	N3.2-02-71	67904958	msmchou@ntu.edu.sg

## Planned Weekly Schedule (subject to changes due to guest lecturers' availability)

Week	Topic	Course LO	Readings/ Activities
1	Introduction and overview	-	NIL
2	Idea generation & IP	a, b	
3	Business Plan Writing	a, b	
4	Prototyping	a, b	
5	Marketing your idea	a, b	