City University of Hong Kong
Course Syllabus

offered by
Department of Mechanical Engineering
with effect from Semester A 2020 / 2021

Part I Course Overview

Course Title:	Engineers in Society
Course Code:	MNE2066
Course Duration:	1 semester
Credit Units:	3 credits
Level:	B2
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	MNE4066 Professional Engineering Practice
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course provides an over-arching coverage of the role of engineers in society. It strengthens students' assimilation of fundamental engineering and technical subject matters of a BEng programme and their appreciation of modern engineering's economic, political, environmental and ethical implications.

With the increasing integration of the industrial fabrics of Hong Kong and Southern China, the course will also examine on the role of engineering in the past and future development of the mechanical, manufacturing, power generation and healthcare industry in Hong Kong but with a global perspective.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Explain the impact of technology and engineering on the daily life, economy, and politics of today's society.		✓	✓	
2.	Discuss the role of an engineer in environmental protection and health and safety in the workplace.		✓	✓	
3.	Distinguish the legal responsibilities and ethical obligations of a professional engineer.		✓	✓	
4.	Describe the role of engineering in the development of related industries in Hong Kong and China.			✓	
5.	Communicate effectively the outcome of group work and individual assignment.			✓	
** If weighting is assigned to CILOs, they should add up to 100%.*		N.A.			

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.					Hours/week (if applicable)
		1	2	3	4	5	
Lecture	Made up of a mixture of lectures and group work. Professional engineers, eminent industrialists and ICAC officers will be invited as guest lecturers to enrich students' learning. Students' learning on each lecture topic is complemented by selected case studies, assignments and follow-up group work or individual assignments according to their Majors. Tutorials provide the forum for case analyses, topical discussions and interactions among students and tutor.	✓	✓	✓	✓		2 hrs/week
Tutorials (Group Work/ Individual Work)		✓	✓	✓	✓	✓	1 hr/week

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.					Weighting*	Remarks
	1	2	3	4	5		
Continuous Assessment: 70%							
Group Work	✓	✓	✓	✓	✓	40%	Case Analyses and Discussions + Presentation
Individual Assignments	✓	✓	✓	✓	✓	30%	Mini essays and Term Paper + Presentation
Examination: 30% (duration: 1.5 hours)							
Examination	✓	✓	✓	✓	✓	30%	
** The weightings should add up to 100%.*						100%	

For a student to pass the course, at least 30% of the maximum mark for both coursework and examination should be obtained.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Group Work	1.1 Ability to Identify and Balance between engineering development with broad spectrum of non-engineering issues including but not limited to cultural, professional, legal, social, economic, safety and health, and environmental aspects.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Individual Assignments	2.1 Ability to Identify issues related to environment, safety, ethnics, and impact of technology when developing an engineering product or service. 2.2 Ability to Balance between engineering ethnics and competitiveness.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Examination	3.1 Ability to identify broad spectrum of non-engineering issues including but not limited to cultural, professional, legal, social, economic, safety and health, and environmental aspects. 3.2 Ability to apply engineering ethics in engineering related works. 3.3 Ability to balance between engineering ethics and competitiveness.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

- Related industrial environment of Hong Kong, China and the world.
- Engineers in private practices and public sectors - safety and health, professional ethics and legal responsibilities.
- Innovative and creative design – patents and copyrights.
- Engineers in society – environment protection and social responsibilities.

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Charles E. Harris, Michael S. Pritchard & Michael J. Rabins, Engineering Ethics: Concepts and Cases, Belmont, California: Wadsworth, ISBN: 978-0495502791.
2.	Charles B. Fleddermann, Engineering Ethics, Upper Saddle River: Prentice Hall, ISBN: 9780132145213.
3.	Carl Mitcham & Shannon R. Duval, Engineer's Toolkit: A First Course in Engineering-Engineering Ethics, Upper Saddle River, N.J.: Prentice Hall, ISBN: 978-0805364361.