

**City University of Hong Kong
Course Syllabus**

**offered by Department of Mechanical and Biomedical Engineering
with effect from Semester B in 2015 / 16**

Part I Course Overview

Course Title:	Professional Engineering Practice
Course Code:	MBE4066
Course Duration:	1 semester
Credit Units:	3 credits
Level:	B4
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	Normative 4-year degree and ASI students must complete a minimum of 45 CUs to be eligible
Precursors: <i>(Course Code and Title)</i>	Nil
Equivalent Courses: <i>(Course Code and Title)</i>	MEEM4066/SEEM4066/JC4066 Professional Engineering Practice
Exclusive Courses: <i>(Course Code and Title)</i>	Nil

Note: Students may repeat a course, or an equivalent course, to improve course grade only if the previous course grade obtained is D or below.

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 manufacturing and industry in Hong Kong and the Pearl River Delta.

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.	10%	✓	✓	
2.	Discuss the role of an engineer in environmental protection and health and safety in the workplace.	30%	✓	✓	✓
3.	Clarify the legal responsibilities and ethical obligations of a professional engineer.	30%	✓	✓	✓
4.	Describe the role of engineering in the development of manufacturing and industry in Hong Kong and China.	20%		✓	
5.	Communicate effectively the outcome of groupwork and individual assignment.	10%		✓	
		100%			

* If weighting is assigned to CILOs, they should add up to 100%.

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 a series of groupwork and individual assignments in tutorials. Professional engineers, eminent industrialists and ICAC officers will be invited as guest lecturers to enrich students' learning of the CILO 1-4. Students' learning on each lecture topic is complemented by selected case studies and follow-up groupwork or individual assignments. 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: 100%							
Groupwork	✓	✓	✓	✓	✓	40%	Case Analyses and Discussions + Presentation
Individual Assignment	✓	✓	✓	✓	✓	60%	Mini essays and Term Paper + Presentation
Examination: 0%							

* The weightings should add up to 100%.

100%

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-)	Adequate (C+, C, C-)	Marginal (D)	Failure (F)
1. Groupwork	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 Assignment	2.1 Ability to Identify issues related to environment, safety, ethnics, and impact of technology when developing an engineering product. 2.2 Ability to Balance between engineering ethnics 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.)

- Industrial and manufacturing 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, Publ. Belmont, California: Wadsworth, 1995.
2.	John Dustin Kemper, Engineers and their profession, 4 th ed., Publ. Philadelphia: Saunders College Pub., 1990.
3.	Carl Mitcham & R. Shannon Duval, Engineering ethics, Publ. Upper Saddle River, N.J.: Prentice Hall, 2000.