

City University of Hong Kong
Course Syllabus

offered by School of Energy and Environment
with effect from Semester A 2019/2020

Part I Course Overview

Course Title: Engineers in Society

Course Code: SEE4001

Course Duration: One semester

Credit Units: 1

Level: B4

Arts and Humanities

Proposed Area: Study of Societies, Social and Business Organisations

(for GE courses only)

Science and Technology

Medium of Instruction: English

Medium of Assessment: English

Prerequisites: Nil
(Course Code and Title)

Precursors: Nil
(Course Code and Title)

Equivalent Courses: Nil
(Course Code and Title)

Exclusive Courses: Nil
(Course Code and Title)

Part II Course Details

1. Abstract

(A 150-word description about the course)

The course is designed to provide students with knowledge in the role of professional engineers in practice and their responsibilities towards the profession, colleagues, employers, clients, the public and the contemporary society. Eminent professionals are invited to deliver some of the lectures, aiming to provide students with an insight into the roles and responsibilities of practicing professional engineers at work. It aims to enable students to:

1. Appreciate the historical context of modern technology and the nature of the process whereby technology develops and its relationship between technology and environment and the implied social costs and benefits.
2. Explain the social, political, legal, economic and ethical responsibility and accountability of a profession in engineering and the organizational activities of professional engineering institutions.
3. Know about the major safety, health, environment, ecology and sustainability considerations which influence engineering judgements.
4. Have knowledge of the capacity of energy and environmental engineers in the innovative development of green and low carbon economy.

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.	Discover and evaluate the effects on the use of technology relating to social, cultural, economic, legal, health and safety, environment, welfare and daily life of today's society.	20%	✓	✓	
2.	Explain the importance of professional training of institutions, professional conduct, ethical obligations and legal responsibilities in various local and overseas engineering activities.	20%			
3.	Discuss and assess the role of engineering in environmental and ecological protection, and health and safety in the workplace.	20%			
4.	Describe the capacity of energy engineers in the innovative development of green, clean, safe and sustainable energy business/industry and low carbon economy.	40%			
		100%			

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

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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	
Lecture	Professional engineers, eminent industrialists and other relevant professionals will be invited as guest lecturers to share their experience.	✓	✓	✓	✓	1 hour

The TLAs are made up of a mixture of lectures and a series of group work 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 1-5. Students' learning on each lecture topic is complemented by selected case studies and follow-up group work or individual assignments. Tutorials provide the forum for case analyses, topical discussions and interactions among students and tutor.

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		
Continuous Assessment: <u>100</u> %						
Assignments	✓	✓	✓	✓	100%	
Examination: <u>0</u> % (duration: N/A hours, if applicable)						
					100%	

** The weightings should add up to 100%.*

Examination duration: N/A

Percentage of coursework, examination, etc.: 100% by coursework

To pass a course, a student must do ALL of the following:

- 1) obtain at least 30% of the total marks allocated towards coursework (combination of assignments, pop quizzes, term paper, lab reports and/ or quiz, if applicable);
- 2) obtain at least 30% of the total marks allocated towards final examination (if applicable); and
- 3) meet the criteria listed in the section on Assessment Rubrics.

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)
Assignments	Ability to describe role and responsibilities of professional engineers.	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.)

- Impact of technology on society: Innovation and creativity, the history and the trend of technology on the social and cultural on society
- Role of professional engineers in practice and their responsibilities towards the profession, colleagues, employers, clients and the public
- Capacity of energy and environmental engineers in the development of clean and sustainable energy industry and low carbon economy

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.)

1.	Charles E. Harris, Michael S. Pritchard & Michael J. Rabins, Engineering ethics: concepts and cases, Publ. Boston, MA : Wadsworth Cengage Learning, 2014.
2.	John Dustin Kemper, Engineers and their profession 4th ed., Publ. Philadelphia : Saunders College Pub., 1990.
3.	Carl Mitcham, & R. Shannon Duval, Engineering ethics, Publ. Upper Saddle River, N.J. : Prentice Hall, 2000.
4.	Johnson, F. Stephen, Gostelow, J.P. and King, W. Joseph, Engineering and society challenges of professional practice, Upper Saddle River, N.J, Prentice Hall, 2000.
5.	Hjorth, Linda; Eichler, Barbara, Ahmed, Technology and Society Abridge to the 21st Century, Upper Saddle River, N.J. Prentie Hall, 2003.
6.	Munasinghe, M. Sustainable Development in Practice, New York: Cambridge, 2009.

2.2 Additional Readings

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

1.	Engineers by The Hong Kong Institution of Engineers
2.	Times
3.	South China Moring Post
4.	China Daily