Subject Description Form

Subject Code	ENG1003
Subject Title	**Freshman Seminar for Engineering**
Credit Value	3
Level	1
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	The objectives of this subject are to: a. Introduce students to the engineering broad discipline and enthuse them about their major study b. Cultivate students' creativity and problem-solving ability, and global outlook c. Introduce students to the concept of entrepreneurship d. Engage the students in desirable forms of learning at university that emphasizes self-regulation, autonomous learning and deep understanding
Intended Learning Outcomes	Upon completion of the subject, students will: a. Be able to demonstrate an understanding and an enthusiasm about the engineering broad discipline and their major study b. Develop their problem-solving ability and global outlook c. Be able to demonstrate an understanding of entrepreneurship d. Be able to search for information, formulate a project plan, and manage a project with initiative e. Be able to demonstrate an understanding of academic integrity.
Contribution to Programme Outcomes (Refer to Part I Section 10)	▪ Programme Outcome 9: Demonstrate an ability to function in multi-disciplinary teams. (Teach and Practice) ▪ Programme Outcome 11: Demonstrate an ability to communicate effectively and advise clients, professional colleagues, and other members of the community. (Teach and Practice) ▪ Programme Outcome 12: Demonstrate an ability to recognize the need for, and to engage in life-long learning. (Teach) ▪ Programme Outcome 13: Demonstrate an understanding of contemporary issues. (Teach) ▪ Programme Outcome 14: Demonstrate an understanding of entrepreneurship and leadership. (Teach)

Subject Synopsis/ Indicative Syllabus	***1. Online Tutorial on Academic Integrity (4 hours*)*** Students will be required to complete successfully an Online *Tutorial on Academic Integrity* on or before week 5 of the first semester. The students will understand the importance of academic integrity by completing the Online Tutorial. ***2. Seminars (12 hours*)*** There will be seminars given by various speakers on various topics to introduce to students the engineering broad discipline, to enthuse them about their major study, to arouse students' interests in engineering and to cultivate their understanding of and sense of belonging to the discipline and the engineering profession, and to cultivate students' global outlook. The formats of the seminars may be, but not limited to, Departmental Seminars, and Renowned Speaker Seminar. ***3. Freshman Project (45 hours*)*** There will be practical workshops, presentation and demonstration sessions for the Freshman Project. The freshman project aims at developing students' creativity, problem-solving skills, and team-work abilities through practical and hands-on tasks at a level commensurate with their first-year engineering backgrounds. Students will work in small groups under the guidance of teachers/instructors to design and implement an engineering solution to some given problems. ***4. Entrepreneurship Project (45 hours*)*** The entrepreneurship project is designed to develop students' appreciation and understanding about entrepreneurship and the commercialization process by attending lectures, workshops and tutorials. In the course of the Entrepreneurship Project, students will identify technology opportunities and learn the skills of preparing a simple business plan. (* Note: hours indicate total student workload)
Teaching/Learning Methodology	***Online Tutorial on Academic Integrity*** The *Online Tutorial on Academic Integrity* is developed by the University to help the students understand the importance of academic integrity. By going through the Online Tutorial, students will be aware of the importance of upholding academic integrity during University study. They will also learn good practices by which to stay clear of dishonest behaviors and academic plagiarism. ***Seminars*** The seminars (such as renowned speaker seminars and departmental seminars) are designed to arouse students' interest about engineering. The delivery mode will be *interactive* and *engaging*. Students will be motivated to search for information and doing background reading. They will be encouraged to raise questions and discuss with the presenters. Assessment tasks (quizzes) will be designed to measure students' learning outcomes as well as to encourage participation and interaction.

Freshman Project

For the Freshman Project, students will work collaboratively with their group members to design and implement an engineering solution to a given problem under the guidance of instructors. There will be close staff-students and students-students interaction. Students will be given opportunities to develop creativity, problem-solving skills research for information and project management abilities. Assessment tasks will consist of demonstration, presentation, reports, and reflective essay writings. These are designed to evaluate individual student's performance and achievement of the relevant intended learning outcomes as well as to encourage active participation.

Entrepreneurship Project

There will be lectures, workshops, and tutorials. A general overview of the concepts required to conduct the project will be provided to students through lectures. They will then work in small groups in a workshop to appreciate the essential elements in the development of a business plan and subsequently to produce a simple business plan and to present it to fellow classmates. Assessment will focus towards students' understanding about entrepreneurship, innovation and creativity.

Assessment Methods in Alignment with Intended Learning Outcomes

Students' performance in this subject will be assessed by using a letter-grading system in accordance with the University's convention from grade F (failure) to A+. The relative weights of the different assessment components are as follows:

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)				
		a	b	c	d	e
Online Tutorial on Academic Integrity	0%					✓
Seminars Quizzes	10%	✓				
Freshman Project Project demonstration, presentation, report and reflective essay writing	45%		✓		✓	
Entrepreneurship Project Business plan	45%			✓	✓	
Total	100 %					

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

	Quizzes (online or paper-based) can measure the students' *understanding* about the engineering discipline. Through reflective essays, students can reflect on their appreciation and understanding about the *engineering* discipline. Through project demonstration, presentation and project reports, students can demonstrate their *creativity, problem-solving skills*. They can also demonstrate their *ability to search for information*, *formulate a project plan*, and *manage a project with initiative*. Through business plan, students can demonstrate their understanding about *entrepreneurship*. **Pass Conditions** In order to pass this subject, students must obtain a Grade D or above for total marks comprising the Seminars, Freshman Project and Entrepreneurship Project as described here AND pass the Online Tutorial on Academic Integrity on or before week 5 of semester 1 as described in the previous section.	
Student Study Effort Expected	Class contact:	
	▪ Introduction and Seminars (such as Departmental Seminars, Renowned Speaker Seminar)	6 Hrs.
	▪ Freshman project: 3 hours per week for 5 weeks	15 Hrs.
	▪ Entrepreneurship project: 3 hours per week for 5 weeks	15 Hrs.
	▪ Other student study effort: 4 hours for Online Tutorial on Academic Integrity; 6 hours for seminars quizzes preparation; 60 hours for Freshman project and Entrepreneurship project: background information search, project work preparation, meeting and discussions, presentation and demonstration, and report writing.	70 Hrs.
	▪ Total student study effort	106 Hrs.
Reading and References List	▪ H. Scott Fogler and Steven E. LeBlanc, *Strategies for creative problem solving*, Upper Saddle River, N.J. : Prentice Hall, 2008 ▪ N.J. Smith (ed), *Engineering project management*, Oxford, UK; Malden, MA: Blackwell, 2008 ▪ Gene Moriaty, *The engineering project: its nature, ethics, and promise*, University Park, Pa.: Pennsylvania State University Press, 2008.	

	▪ K. Allen, *Entrepreneurship for scientists and engineers*, Upper Saddle River, N.J.: Prentice Hall, 2010. ▪ The Hong Kong Institution of Engineers, "Engineering Our City", Youtube clip ref. no. nYMmI6vlVeQ ▪ HKIE Corporate Video, Youtube clip ref. no. lNMVl8MuNEY
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