**Subject Description Form**

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| **Subject Code** | ENG1004 |
| **Subject Title** | Engineering Professionals in Society I |
| **Credit Value** | 1 |
| **Level** | 1 |
| **Pre-requisite/ Co-requisite/ Exclusion** | Nil |
| **Objectives** | Through a series of seminars, this subject enables students to understand:   1. the features and career development opportunities of various engineering disciplines 2. the responsibilities and accountability of engineering professionals 3. the organizational activities of professional engineering institutions   Furthermore, it will also:   1. Enthuse students about their major study in engineering as well as engage them in active, autonomous learning and deep understanding |
| **Intended Learning Outcomes** | Upon completion of the subject, students will be able to:   1. Describe the role and impact of engineers in a variety of professional fields in addressing contemporary societal needs at local, national and global levels 2. Identify the qualities and competences required to become a successful professional engineer and explain why they are important for professional work 3. Reflect on their professional aspirations and develop a personal development plan for pursuing their career goals in Engineering |
| **Subject Synopsis/ Indicative Syllabus** | 1. Features and Career Development Opportunities of Various Disciplines in Engineering   Features and career development opportunities of the disciplines under the Engineering Faculty, namely: Aeronautical and Aviation Engineering, Biomedical Engineering, Electrical and Electronic Engineering, Industrial and Systems Engineering, and Mechanical Engineering   1. Responsibilities and Accountability of Engineering Professionals   Responsibilities and accountability of the engineering professionals in social, political, legal, economic, safety and health, and environmental domains; professional ethics, the work of the Independent Commission Against Corruption (ICAC), the work of the Environmental Protection Department   1. Professional Institutions   International engineering agreements and the organizational activities of professional engineering institutions, professional accreditation, qualifications and criteria of engineering professionals |

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| **Teaching/Learning Methodology** | The subject will be offered in terms of a series of seminars conducted by representatives from academic departments in PolyU with invited guest speakers from professional institutions; HKSAR Government organisations such as the Independent Commission Against Corruption (ICAC) and Environmental Protection Department; experts/practitioners/alumni from the industry, etc. In each seminar, the speaker will introduce to students the various disciplines and the different topics listed in the section “Subject Synopsis/Indicative Syllabus” while addressing the three learning outcomes (a), (b) and (c). “Flipped Classroom” approach will be adopted to nurture active learning for students with emphasis in student engagement. An active learning classroom will compose of various activities, namely:   1. Pre-seminar reading, research, and quizzes, 2. In-seminar case study, discussions, Question and Answer, 3. Post-seminar reflection, reviewing, and quizzes | |
| **Assessment Methods in Alignment with Intended Learning Outcomes** | |  |  |  |  |  | | --- | --- | --- | --- | --- | | Specific assessment methods/tasks | % Weighting | Intended subject learning outcomes to be assessed | | | | a | b | c | | 1. Pre-seminar quizzes | 20% | 🗸 | 🗸 | 🗸 | | 2. Post-seminar quizzes | 50% | 🗸 | 🗸 | 🗸 | | 3. Case Study | 30% | 🗸 | 🗸 | 🗸 | | ***Total*** | 100% | 🗸 | 🗸 | 🗸 |   Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:   1. Pre-seminar quizzes can encourage students to engage in the “flipped classroom” mode of learning, whereby they prepare for the oncoming seminar by advance reading, and research for background information. 2. Post-seminar quizzes can encourage students to participate actively in the seminars and do extended reading and information search afterwards. They can also assess students’ understanding about the various topics introduced in the seminars and hence their achievement of the intended learning outcomes. 3. One case study to be conducted by students can assess students’ in-depth understanding about the various topics introduced in the seminars.   Pre-seminar and post-seminar quizzes assess foundational knowledge, measuring learning outcomes (a) and (b).  To assess learning outcome (c), a case study evaluates students’ ability to define their career aspirations and create a personal development plan, guiding their journey as professional engineers, researchers, engineering entrepreneurs, etc. | |
| **Student Study Effort Expected** | ***Class contact***: |  |
| * Seminars (7 sessions, 5 x 2 + 2 x 1.5 hours) | 13 Hrs. |
| ***Other student study efforts***: |  |
| * Pre-seminar reading and research for information | 7 Hrs. |
| * Post-seminar extended reading, information search, case report writing, and other learning and teaching activities | 19 Hrs. |
| **Total student study efforts:** | 39 Hrs. |
| **Reading List and References** | **Reference Books & Articles**   1. Holbrook, J. Britt, (ed), *Ethics, science, technology, and engineering: a global resource*, Farmington Hills, Mich.: Gale, Cengage Learning, 2015 2. Alam, Firoz, *Engineering education : accreditation & graduate global mobility*, Leiden: CRC Press/Balkema, 2021 3. Video (PolyU Library), Engineering – solving problems through science, San Francisco, California, USA: Kanopy Streaming; 2014   **Online Materials**:   1. Faculty of Engineering website: <https://www.polyu.edu.hk/en/feng/> 2. Departmental websites:  * 1. <https://www.polyu.edu.hk/en/aae/>   2. <https://www.polyu.edu.hk/en/bme/>   3. <https://www.polyu.edu.hk/en/eee/>   4. <https://www.polyu.edu.hk/en/ise/>   5. <https://www.polyu.edu.hk/en/me/>  1. HKIE Website: <https://www.hkie.org.hk/en/> 2. Websites of professional societies and institutions, such as:    1. The Chartered Institute of Logistics and Transport <https://www.cilt.org.hk/en-US/Default.aspx>    2. CMI-HK Website: <https://www.managers.org.uk/community/regional-networks/hong-kong/> 3. ICAC Website: <https://www.icac.org.hk/en/home/index.html> 4. Environmental Protection Department Website: <https://www.epd.gov.hk/epd/english/top.html> 5. TEDx Talks: Engineering for social impact: Randy Marsden at TEDx Edmonton, <https://www.youtube.com/watch?v=UCDwNWSXFHk> | |
| **Last Updated** | May 2025 | |
| **Prepared by** | C.K. Choi | |

*May 2025*