

The Hong Kong University of Science and Technology

UG Course Syllabus

Academic and Professional Development for Engineering + AI

ENGG 1050

1 Credit

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Course Description

This course is designed to provide academic advising to Engineering students enrolled in the extended major in artificial intelligence, to enhance their sense of identity and belonging, to familiarize them with various engineering disciplines and their connections with the emerging technologies of artificial intelligence. Activities include meetings with faculty advisors, senior students and alumni, seminars and workshops, and various community building activities. Graded P or F. For engineering students with extended AI major only.

Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

- 1) Be integrated into a community of faculty, staff and students in the “Engineering + AI” program.
- 2) Develop a study plan and set worthwhile goals for their entire university experience.
- 3) Make informed decisions about their engineering major selection.
- 4) Appreciate the broad applicability and potentially far-reaching impact of artificial intelligence in all engineering disciplines and beyond.

Assessments and Grading

Assessments:

Grading: Pass/Fail

Assessment Task	Contribution to Overall Course grade (%)	Assessment Timeline
Participation & Course work	50%	Semester Long
Group Project	40%	December 2026
Peer Review	10%	December 2026

Attendance is mandatory unless by special arrangement as specified. Missing more than one class without a valid reason may result in a penalty.

If you are unable to attend a class, you must inform your instructor in advance wherever possible. For any absence, you are required to provide supporting documentation. For instance, in the case of illness, you must supply a medical certificate issued by a recognized medical practitioner.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Group Project	ILO 4	This task assesses students' ability to understand and apply AI concepts and evaluate their potential across all engineering disciplines (ILO 4)
Peer Review	ILO 1	Peer evaluation fosters critical evaluation of group members' contributions to the project, aligning with ILO 1, and promoting the development of evaluative and communicative skills
Participation and Course Work	ILO 2, ILO 3	In class participation and class work helps inform the students about different engineering majors (ILO 3) and helps students develop a future plan (ILO 2)

Grading Rubrics

Group Project Poster:

The following rubric will guide the evaluation of your poster.

Area for evaluation	Excellent	Can Be Improved	Needs Improvement
1. Understanding of Community & Challenge (20 pts) <i>Depth of research and empathy for the chosen community and its specific urban challenge.</i>	The chosen target community is clearly and specifically defined. The group demonstrates a comprehensive, empathetic understanding of the community's unique needs, challenges, and opportunities. Findings are supported by a robust mix of both quantitative (e.g., data, statistics) and qualitative (e.g., interviews, observations) data from highly relevant and credible sources. The urban challenge is critically analyzed and framed from the community's perspective.	The target community is identified but could be more specifically defined. The group shows a good understanding of the community's needs, but the analysis may lack depth or rely heavily on one type of data (either quantitative or qualitative). Sources are relevant but could be more diverse. The urban challenge is described but its direct impact on the community could be better articulated.	The community is vaguely defined (e.g., "the elderly"). Understanding of the community's needs is superficial, based on assumptions or limited, non-credible sources. Data is missing, irrelevant, or not effectively used to define the problem. The connection between the broad urban challenge and the specific community is weak.

2. AI Solution Design & Critical Analysis (30 pts) <i>Creativity, appropriateness, and critical evaluation of the proposed AI-driven solution, including its desirability, viability, and feasibility.</i>	The proposed AI solution is highly innovative, directly tailored to the defined challenge, and clearly explained (a generated image of the prototype or flowchart is effectively used to illustrate the AI's function). A sophisticated and critical analysis of the solution's desirability (user need), viability (long-term sustainability), and feasibility (technical implementation) is presented. Potential biases, ethical considerations, and trade-offs are thoroughly addressed.	The proposed AI solution is relevant and addresses the challenge but may be somewhat generic or lack specific technical detail. The solution is explained, but the solution may be unclear or overly simplistic. The analysis of desirability, viability, and feasibility is present but may be uneven—strong in one area but weak in another. Some ethical or practical challenges are mentioned but not deeply explored.	The proposed solution is vague, not genuinely AI-driven, or is a poor fit for the stated challenge. A solution is missing, irrelevant, or confusing. The analysis of the three criteria (desirability, viability, feasibility) is minimal, missing, or consists of unsupported claims. Significant practical or ethical hurdles are ignored.
3. Clarity of Communication & Poster Quality (20 pts) <i>Quality of the final project deliverable (e.g., report, presentation deck) and the clarity of the written and visual communication.</i>	The poster is exceptionally clear, professional, and easy to follow. The structure is logical, with a compelling narrative flow from problem to solution. Visuals (diagrams, charts, images) are used effectively to enhance understanding. Language is precise, and AI-related terminologies are used accurately. The document is polished and free of errors.	The poster is clear and organized but could be more engaging or polished. The structure is logical but the flow between sections could be smoother. Visuals are included but may not be fully integrated or explained. There are minor issues with language or terminology.	The poster is difficult to follow, poorly organized, or lacks a coherent structure. Visuals are missing, poorly designed, or distract from the content. Numerous errors in language or misuse of technical terms hinder understanding.

4. Presentation (15 pts) <i>Effectiveness of the oral presentation and ability to engage with questions.</i>	All group members are well-prepared, confident, and speak clearly. They explain concepts beyond the slides, demonstrating deep mastery of the subject. The presentation is engaging, well-paced, and highlights the most critical points. The team provides thoughtful, collaborative, and valuable responses to all questions, further clarifying and defending their project.	Group members are somewhat prepared and speak clearly. They mostly explain what is on the slides but have limited ability to elaborate further. The presentation covers the main points but may lack dynamism. Team members provide adequate answers to questions but may defer to one expert or struggle with more challenging queries.	The presentation is unclear, poorly paced, or simply reads off the slides. Members demonstrate a superficial understanding of their own project, unable to explain core concepts. Responses to questions are weak, evasive, or incorrect, showing a significant gap in knowledge.
5. Teamwork & Peer Evaluation (15 pts) <i>Contribution and professional conduct of each team member throughout the project lifecycle.</i>	All members contributed equally to the project's research, development, and execution. The group managed their time effectively, met all deadlines, and maintained excellent, professional communication. Peer reviews consistently reflect full participation, punctuality, and valuable contribution from all members.	Most members contributed fairly, though some imbalance may be evident. The group mostly managed time well but may have faced minor coordination issues. Peer reviews indicate generally good participation, with some members contributing more significantly than others.	Significant inequity in workload and contribution. The group struggled with time management, missed deadlines, or had poor communication. Peer reviews indicate minimal contribution, poor attendance at meetings, and a lack of reliability from one or more members.

Final Grade Descriptors:

Grades	Short Description	Elaboration on Subject Grading Description
P	Pass	Completed all course requirements and attended all mandatory sessions. Shows a solid grasp of AI's basics and its potential applications in various engineering disciplines. Communicates effectively about AI's social, economic, and ethical implications and applies AI tools to support learning and problem-solving.
F	Fail	Did not complete all course requirements and did not attend all mandatory sessions. Demonstrated insufficient understanding of AI's basics and its potential applications in various engineering disciplines. Communicates poorly about AI's social, economic, and ethical implications and unable to apply AI tools to support learning and problem-solving.

Course AI Policy

The use of Generative AI is permitted and expected to assist you with brainstorming, participating in class activities, and collaborating on your group project. While AI is a valuable tool for ideation and development, your final submissions must demonstrate your team's original synthesis and critical analysis.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include [specific details, e.g., strengths, areas for improvement]. Students who have further questions about the feedback including marks should consult the instructor within five working days after the feedback is received.

Academic Integrity

Students are expected to adhere to the university's academic integrity policy. Students are expected to uphold HKUST's Academic Honor Code and to maintain the highest standards of academic integrity. The University has zero tolerance of academic misconduct. Please refer to [Academic Integrity | HKUST – Academic Registry](#) for the University's definition of plagiarism and ways to avoid cheating and plagiarism.