The Hong Kong University of Science and Technology

UG Course Syllabus

Investigation Project

CENG4980Z

3 Credits

No pre-/co-requisites

Instructor Name: LINARDI, Darwin

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Office Hours: By appointment

Course Description

Students will conduct in-depth experimental or computational investigations on selected topics in one of the departmental research areas. Students work under supervision and are encouraged to use their initiative to complete an appropriate program of work within the time allocated. Enrollment is subject to approval by the department and supervisor. Graded Distinction/Pass/Fail. May be repeated for credits.

Intended Learning Outcomes (ILOs)

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

1. Students will demonstrate the ability to conduct in-depth experimental or computational investigations, applying appropriate methodologies within their selected departmental research areas.

2. Students will critically analyse and interpret experimental or computational data, drawing meaningful conclusions and effectively communicating their findings.

3. Students will exhibit self-directed learning and initiative in developing research questions, managing their projects, and engaging constructively with their supervisors throughout the investigation process.

Assessment and Grading

This course will be assessed using criterion-referencing and grades will not be assigned using a curve. Detailed rubrics for each assignment are provided below, outlining the criteria used for evaluation.

Assessments:

Assessment Task	Contribution to Overall Course grade (%)	Due date
Logbook	40%	Each week
Report	30%	End of semester
Presentation	30%	End of semester

Mapping of Course ILOs to Assessment Tasks

Assessed Task	Mapped ILOs	Explanation
Logbook	ILO1, ILO3	The logbook serves as a detailed record of the experimental or computational work conducted by students. It encourages them to document their methodologies, observations, and any modifications made during their investigations. This ensures that students apply appropriate methodologies and reflect on their research processes.
Report	ILO2, ILO3	The report is a formal document where students compile their research findings. It allows them to present a comprehensive overview of their investigations, including methodologies, data analysis, and conclusions.
Presentation	ILO2, ILO3	The presentation allows students to showcase their research findings in a structured format. It requires them to clearly articulate their data analysis and interpretations while engaging with the audience, answering questions, and discussing their methodologies, enhancing their communication skills.

Grading Rubrics

Logbook				
Criteria	Excellent (3)	Good (2)	Needs Improvement (1)	Unsatisfactory (0)
Documentation	Comprehensive and detailed records of methodologies, observations, and modifications; well-organized and easy to follow.	Clear records with most methodologies and observations documented; generally organized.	Basic documentation present, but lacks detail or organization; some important aspects missing.	Incomplete or poorly organized records; lacks clarity and essential information.
Reflection	Insightful reflections on the research process and personal learning; demonstrates critical thinking about methodologies used.	Clear reflections on the research process; some evidence of critical thinking.	Minimal reflection on the process; lacks depth in critical thinking.	Little to no reflection; does not engage with the research process.
Timeliness	All entries made in a timely manner, adhering to deadlines consistently.	Most entries made on time; minor delays present.	Some entries missing deadlines; inconsistent adherence to schedule.	Many entries missing or significantly delayed; poor time management.

Report				
Criteria	Excellent (3)	Good (2)	Needs Improvement (1)	Unsatisfactory (0)
Content and Depth	Comprehensive coverage of the topic; thorough analysis and interpretation of data; insightful conclusions.	Good coverage of the topic with clear analysis; conclusions generally well-supported by data.	Basic coverage of the topic; some analysis present, but lacks depth or clarity in conclusions.	Limited coverage of the topic; minimal analysis; conclusions are unsupported or unclear.
Organization and Structure	Well-organized with a clear structure; logical flow of ideas; sections clearly defined.	Generally organized; most sections clear, with a logical flow; minor issues in structure.	Some organization present, but lacks clear structure; ideas may be difficult to follow.	Poorly organized; lacks clear structure; difficult to understand the flow of ideas.
Clarity and Style	Exceptionally clear writing with appropriate style and tone; minimal grammatical errors.	Clear writing, generally appropriate style; few grammatical errors.	Some clarity in writing; several grammatical errors that may distract the reader.	Writing is unclear; frequent grammatical errors that hinder understanding.

Presentation				
Criteria	Excellent (3)	Good (2)	Needs Improvement (1)	Unsatisfactory (0)
Content and Understanding	Thorough understanding of the topic; presents comprehensive information with insightful analysis.	Good understanding of the topic; presents clear information with some analysis.	Basic understanding of the topic; information presented is somewhat clear but lacks depth.	Limited understanding of the topic; information is unclear or incomplete.
Delivery and Engagement	Engaging delivery with confident body language; effectively interacts with the audience.	Good delivery; mostly confident; engages the audience with occasional interaction.	Adequate delivery; some confidence; limited audience engagement.	Poor delivery; lacks confidence; minimal to no audience engagement.
Visual Aids and Organization	Excellent use of visual aids that enhance understanding; well-organized presentation flow.	Good use of visual aids; generally organized presentation with minor flow issues.	Some use of visual aids; presentation organization is unclear at times.	Little to no visual aids; poorly organized presentation; difficult to follow.

Final Grade Descriptors:

Grades	Short Description	Elaboration on subject grading description
A	Excellent Performance	Logbook is comprehensive and well-documented; report provides in-depth analysis with insightful conclusions; presentation is engaging and clear, demonstrating mastery of the topic.
B	Good Performance	Logbook is mostly complete and organized; report includes solid analysis with minor gaps; presentation is clear with good engagement, but may lack some depth in content.
C	Satisfactory Performance	Logbook meets basic documentation requirements, but lacks detail; report provides basic coverage with some analysis but unclear conclusions; presentation is adequate, though may lack organization or engagement.
D	Marginal Pass	Logbook is incomplete or poorly organized; report shows limited analysis and unclear conclusions; presentation lacks clarity and engagement, with minimal connection to the topic.
F	Fail	Logbook is missing significant entries; report fails to cover key aspects or lacks coherence; presentation is unclear and does not demonstrate understanding of the topic.

Course AI Policy

ChatGPT, Poe, etc. can be used to refine your own writing and presentation or help you learn. They should not be used to complete your assignments for you.

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 or the announced deadline, whichever is earliest, after the feedback is received.

Resubmission Policy

Only the latest work submitted by the deadline will be graded. Submissions after the deadline will be subject to grade penalties without valid reasoning.

Required Texts and Materials

No specific texts required.

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.