The Hong Kong University of Science and Technology

UG Course Syllabus Template

Course Title: Field Methods in Marine Studies

Course Code: OCES3003

No. of Credits: 3

Pre-/co-requisites: None

Name: Prof. Charmaine Yung

Email: ccmyung@ust.hk

Office Hours: CYT5004 (Availability based on request)

Course Description

The field course is designed to provide students the opportunity to collect, process and interpret oceanographic data. Students will be exposed to basic oceanographic sampling methods and participate in shipboard laboratory operations to gain experiences with deployment of modern oceanographic equipment and collection of scientific data at sea. The course content will focus on practicing consistent methods and ensuring data fidelity. Students will gain practical experiences in safely operating a series of standard oceanographic equipment in the field.

Intended Learning Outcomes (ILOs)

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

1. Understand the safe operation, underlying principles, and inherent limitations of standard oceanographic equipment.
2. Recognize the importance of and practice accurate data recording.
3. Correctly interpret the data collected by standard oceanographic equipment.
4. Effectively participate and contribute to fieldwork in a team setting.

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
Lab Worksheets (4)	20%	See Course Schedule
Lab Reports (2)	10%	See Course Schedule

Fieldwork Worksheets (2)	10%	See Course Schedule
Pre-lab Quizzes	10%	See Course Schedule
Project Presentation	20%	See Course Schedule
Written Project Report	20%	See Course Schedule
Continuous Assessment (Lab Performance)	10%	Throughout the course
Total	**100%**	

* Assessment marks for individual assessed tasks will be released within two weeks of the due date.

Mapping of Course ILOs to Assessment Tasks

Assessed Task	**Mapped ILOs**	**Explanation**
Lab Worksheets & Lab Reports	ILO-1, ILO-2, ILO-3	These tasks assess students' ability to operate equipment, record data accurately, and interpret the results from lab exercises.
Fieldwork Worksheets	ILO-1, ILO-2	These tasks assess the ability to apply knowledge in the field, focusing on safe operation and precise data logging during fieldwork.
Project Presentation	ILO-3, ILO-4	The presentation assesses students' ability to interpret and synthesize findings (ILO-3) and their ability to collaborate effectively as a team (ILO-4).
Written Project Report	ILO-1, ILO-2, ILO-3	This task assesses the ability to analyze and interpret collected data (ILO-3) while demonstrating an understanding of the equipment used (ILO-1) and proper data handling (ILO-2).
Pre-lab Quizzes	ILO-1	These quizzes assess the foundational understanding of lab and fieldwork procedures before the sessions begin.
Continuous Assessment	ILO-4	This assesses students' ability to work effectively with others, participate actively, and adhere to safety protocols during all practical sessions.

Grading Rubrics: Detailed rubrics for each assignment will be provided. These rubrics clearly outline the criteria used for evaluation. Students can refer to these rubrics to understand how their work will be assessed.

Final Grade Descriptors:

Grades	**Short Description**	**Elaboration on subject grading description**
A	**Excellent Performance**	Demonstrates a comprehensive grasp of subject matter, expertise in problem-solving, and significant creativity in thinking. Exhibits

		a high capacity for scholarship and collaboration, going beyond core requirements to achieve learning goals.
B	**Good Performance**	Shows good knowledge and understanding of the main subject matter, competence in problem-solving, and the ability to analyze and evaluate issues. Displays high motivation to learn and the ability to work effectively with others.
C	**Satisfactory Performance**	Possesses adequate knowledge of core subject matter, competence in dealing with familiar problems, and some capacity for analysis and critical thinking. Shows persistence and effort to achieve broadly defined learning goals.
D	**Marginal Pass**	Has threshold knowledge of core subject matter, potential to achieve key professional skills, and the ability to make basic judgments. Benefits from the course and has the potential to develop in the discipline.
F	**Fail**	Demonstrates insufficient understanding of the subject matter and lacks the necessary problem-solving skills. Shows limited ability to think critically or analytically and exhibits minimal effort towards achieving learning goals. Does not meet the threshold requirements for professional practice or development in the discipline.

Course AI Policy

Students are permitted to use generative artificial intelligence (AI) tools to assist with brainstorming and refining their work, provided they adhere to strict guidelines for responsible use. It is mandatory for students to acknowledge all AI assistance by including a declaration in their submissions that specifies the tool used (e.g., ChatGPT-4) and describes the extent of its involvement. Ultimately, students are fully responsible for their submitted work. Students must critically verify all AI-generated content for accuracy and quality, as they will be held accountable for any errors, omissions, or plagiarism. The final submission must represent the student's own effort and understanding of the course material.

Communication and Feedback

Assessment marks for individual assessed tasks will be communicated via Canvas within two weeks of submission. Feedback on assignments will include strengths and 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. Medical leave must be supported by documentation and emailed to the instructor on the same day.

Resubmission Policy

Late submissions or plagiarism will result in mark deductions. There are no general opportunities for resubmitting work.

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.

Course Schedule

Week	Date	Team	Topic	Format	Follow-up lab	Worksheet due date
1	1 Sep	A+B	Course Introduction + Lab 1 (Procedure A: Proper usage of pipette)	Lecture	/	
2	8 Sep	A+B	Lab 1: Water Chemistry	Lab	/	15 Sep
2	13 Sep Sat	A	Fieldwork 1: Water and sediment sampling	Fieldwork & Lab	/	22 Sep (Team A)
3	20 Sep Sat	B	Fieldwork 1: Water and sediment sampling (No class on 15 Sep)	Fieldwork & Lab	/	29 Sep (Team B)
4	22 Sep	A+B	Lab 2: Nutrient analysis	Lab	/	6 Oct
5	29 Sep	A+B	Lab 3: DNA extraction and PCR	Lab	/	13 Oct
6	6 Oct	A+B	Lab 4: Gel electrophoresis and data analysis	Lab	/	13 Oct
7	13 Oct	A+B	Lab 5: Primary Production	Lab	/	20 Oct
8	20 Oct	A+B	Lab 6: Pigment analysis and flow cytometry	Lab	yes	27 Oct
9	27 Oct	A	Fieldwork 2: Oceanographic instrumentation	Fieldwork	/	3 Nov (Team A)
10	3 Nov	B	Fieldwork 2: Oceanographic instrumentation	Fieldwork	/	10 Nov (Team B)
11	10 Nov	A+B	Lab 7: Grazing experiment & field trip analysis	Lab	yes	17 Nov
12	17 Nov	A+B	In class discussion for the project presentation	/	/	/
13	24 Nov	A+B	Project Presentation & course review	/	/	