

OCES3003 Field Methods in Marine Studies

Course Schedule, Location and Instructor information

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 operation of a series of standard oceanographic equipment in the field.

Course Objectives

OCES3003 is a major required course for undergraduate students majoring in Ocean Science and Technology in the School of Science at the Hong Kong University of Science and Technology. The primary objectives of this course is to provide students with hands-on experience to deploy and operate standard oceanographic equipment, with strong emphases on safe deployment and responsible data logging. Students will learn about basic routine operations on ship decks, sample collection and preservations. They will also be exposed to standard ship-based and laboratory-based chemical and biological analysis.

Course Intended Learning Outcomes

Students will gain essential background knowledge and skills for conducting field and lab works in coastal environmental monitoring. Upon completion of this course, students should be able to

1. To understand the safe operation, underlying principles, and inherent limitations of standard oceanographic equipment.
2. To recognize the importance of and practice accurate data recording
3. To correctly interpret the data collected by standard oceanographic equipment
4. To effectively participate and contribute to field work in a team

Course Schedule

Week	Team	Topic	Format	Follow-up lab
1	A+B	Course Introduction	Lecture	/
2	A+B	Lab 1: Water Chemistry	Lab	/
3	A	Fieldwork 1: Water and sediment sampling	Fieldwork & Lab	/
4	B	Fieldwork 1: Water and sediment sampling	Fieldwork & Lab	/
5	A+B	Lab 2: Nutrient analysis	Lab	/
6	A+B	Lab 3: DNA extraction and PCR	Lab	/
7	A+B	Lab 4: Gel electrophoresis and data analysis	Lab	/
8	A+B	Lab 5: Primary Production	Lab	/
9	A+B	Lab 6: Pigment analysis and flow cytometry	Lab	yes
10	A	Fieldwork 2: Oceanographic instrumentation	Fieldwork	/
11	B	Fieldwork 2: Oceanographic instrumentation	Fieldwork	/
12	A+B	Lab 7: Grazing experiment & field trip analysis	Lab	yes
13	A+B	Project Presentation & course review	/	/

Course Attendance Requirements

Full attendance is necessary throughout the entire course. Absent for class/ lab session or being late for more than 10 minutes without reasons will lead to mark deduction in your lab report/ continuous assessment. Should you take any sick leave, please provide supporting document (e.g. doctor certificate for medical leave) to course instructor on the day of class/ lab session by email.

Course Assessment

Worksheets x 8 (50%)

Project Presentation (20%)

Written Project Report (20%)

Continuous Assessment (10%)

Submission of lab worksheets

Hard-copy of lab worksheets are required to submit to course instructor at the beginning of the next lab session or to OCES general office if no class is held on the due date. Class announcement will be made immediately if there is any change in submission date and/or submission method during the semester. All the submissions will be scanned through anti-plagiarism software to avoid plagiarism. Late submission or plagiarism will lead to mark deduction.