

OCES 4974 Ocean Science and Technology Research Project I

Course Description

Students will undertake a research project in ocean science and technology under faculty supervision. OCES 4974 is the first part of a two-term project. After completion of OCES 4974 in the Fall semester, students will need to register for OCES 4984 in Spring. Through the reading of scientific literature, field/laboratory studies, meetings with supervisors, and presentations in laboratory meetings, students will learn:

- (i) the latest knowledge in their chosen field of research,
- (ii) skills in hypothesis synthesis and testing,
- (iii) experimental design,
- (iv) data collection and analysis, and
- (v) scientific communication. Students will be evaluated for their performance through continuous assessment by the supervisor and an oral presentation held at the end of the Fall semester. For third-year or fourth-year OCES students only. Instructor's approval is required for enrollment.

Intended Learning Outcomes

On successful completion of this course, students are expected to be able to

- 1) Explain in detail the current and emerging trends in the area of ocean science and technology research chosen by the student.
- 2) Demonstrate basic skills in formulating objectives, making hypotheses and designing experiments for a scientific investigation.
- 3) Conduct independent lab experiments and/or field studies.
- 4) Critically analyze and interpret the data of the experiments and/or field studies, address the limitations and biases of the investigation methods, draw scientifically valid conclusions, and explain the importance of the research findings by making reference to existing knowledge.
- 5) Effectively communicate the research findings in oral presentations and in written reports.
- 6) Work independently and collaborate effectively.

Assessment

1. Experiment (continuous assessment by project supervisor(s)) (30%)
2. Oral presentation (30%)
 - Presentation will be scheduled in **early December**
 - Presentation duration: Each student 10 min + 5 min Q&A
 - The content of the presentation should include:

- i. Introduction to the research topic
- ii. Project objectives
- iii. Research methodology

3. Written report (40%)

- Report will be due on **14th December 2023 (Thursday)**
*Students should submit their written reports to their corresponding supervisor(s) directly for grading.
- Word limit: 1000 words
- The content of the report should include:
 - i. A short literature review related to the research topic
 - ii. Project objectives
 - iii. Research methodology
 - iv. Preliminary results (if any)