

UH @ SEA - A Field Course in Ocean Conservation
University of Hawai'i at Mānoa and Sea Education Association
Summer 2010

UH INSTRUCTORS: Alison Rieser (rieser@hawaii.edu)
David Hyrenbach (khyrenba@gmail.com)
Graduate Teaching Assistants:
Rebecca Prescott (rebeccap@hawaii.edu)
Matt Iacchei (m_iacchei@yahoo.com)

SEA INSTRUCTORS: Elliot Rappaport, Captain (erappaport@sea.edu)
Jan Witting, Chief Scientist (jwitting@sea.edu)

WEB SITE: <http://groups.google.com/group/uhsea2010>

CONTEXT: This field course in ocean conservation will allow students sailing through the Hawaiian archipelago to assess the health of the marine environment, and to compare the diverse ways we currently protect and manage this vast and heterogeneous ecosystem.

Coupled with two weeks on campus, first to prepare for the voyage and then to synthesize and communicate our observations and cruise results, this course will give students a new perspective on our islands and our ocean home. This program is a partnership between the University of Hawaii at Manoa and the Sea Education Association.

To understand the functioning of the archipelago's complex ecosystem, it is essential to determine which processes shape its physical and biological environment, the extent of current and future anthropogenic impacts, and which approaches are most effective to protect and manage different ecological and cultural resources. Developing an integrated understanding of the physical, biological, social and economic drivers of ecological processes in the region is critical to monitoring and managing future changes in the structure and function of this ecosystem.

COURSE OBJECTIVES: Our primary educational goal is to examine the spatial heterogeneity in biological / physical / socioeconomic / management seascapes across the study area, to highlight the need for management actions best suited to the various conditions that we will encounter. To this end, students will work together to:

- Assess the physical and biological oceanographic conditions and the distributions and population structure of focal species of interest using standardized techniques.
- Quantify human activities on land and at sea, and evaluate their actual and potential impacts on the marine environment.

- Compare physical (e.g., marine debris, sedimentation) and biological (e.g., species abundance, community structure) ecosystem attributes under contrasting management scenarios.
- Critically evaluate the diverse ways currently being used to protect and manage marine resources and the ocean environment.
- Appreciate the diverse ways people interact with the ocean, and how culture influences these experiences.

STUDENT LEARNING OBJECTIVES: At the end of this course, students will be able to:

- Perform a battery of standardized scientific measurements to assess the health of the ocean environment (e.g., assess ocean productivity / temperature, conduct surveys of marine debris, quantify coral / algae abundance, conduct seabird surveys, measure the number and size of intertidal invertebrates)
- Interpret and evaluate standardized observations used to monitor ocean health and ecosystem structure throughout the Hawaiian archipelago
- Describe the diverse ways currently being used to protect and manage the marine environment throughout the Hawaiian archipelago, and discuss how they relate to practices in other regions of the U.S. and the world
- Compare and contrast these current resource management practices with traditional resource management approaches used in Hawaii
- Evaluate current resource management approaches used in the Hawaiian archipelago in terms of their objectives, governance, and socio-economic and ecological outcomes

METHOD OF INSTRUCTION:

This course will focus on both individual skill achievement and group projects.

Skill Achievement:

Students will practice and acquire these skills during the cruise and field work activities:

- navigation*
- ship safety*
- ship operations*
- weather observations*
- oceanographic instrument operation and deployment*
- neuston / plankton / nekton net operation and deployment*
- seabird survey and i.d.*
- coral and algae survey and i.d.*
- invertebrate survey and i.d.*
- plankton / neuston / nekton sorting and i.d.*

*kupuna interview on ocean conservation awareness
(e.g., fishers, tourists, tour operators, resource managers)*

Final Essay - take home - due on the last day of class:

Students will write an individual synthesis essay, addressing the question:

"How were your perceptions of ocean conservation changed during this course? Provide three specific examples."

Final Report: Students will develop a brief public presentation (up to 20 minutes, including Question / Answer period), to showcase the objectives and results of their individual projects. Students working on related projects will develop a group presentation. One or more group members will give the talk on behalf of the entire group.

Final Presentation: Each student will write a personal contribution to a final group report (10-15 pp in length). The format of the final paper will be agreed upon with the instructors.

COURSE POLICIES:

Grading: Grades will be based on the following criteria:

Skill Achievement	50 %
Project	20 %
Presentation	10 %
Final Essay	10 %
Participation	10 % (Logbook & Discussions)
Total Points	100 %

Participation points will be evaluated on the basis of student effort and commitment to learning.

Evidence of this includes participating in all field activities, on land and at sea, engaging group discussions, and keeping a logbook with observations and experiences

Class Project

The group project, addressing a topic and dataset approved by the instructors, will involve the following:

Project Proposal	5 %	Week 1
		- Briefly describe the Motivation (why this is important), Hypotheses (specific questions), and Methods (approach)
Data Report	5 %	Week 4/5
		- Briefly document the available data and the proposed methods for testing the working hypotheses

