OCEANOGRAPHIC METHODS & DATA ANALYSIS: PHYSICAL PROCESSES (11:628:364, 3 credits)

Instructors
Professor David Bushek
Professor Oscar Schofield

Prerequisites
Dynamics of Marine Ecosystems 11:628:320

Course Materials
All required reading will be available through the course website

Topics
Basics of Matlab and Google Earth
Navigation and the Global Positioning System
Using and analyzing data from CTDs (Conductivity, Temperature, Depth instruments)
Using and analyzing data from ADCPs (Acoustic Doppler Current Profilers)
Optical sensors
High-frequency radar, satellites, remote sensing

Course Learning Goals and Assessment
The Learning Goals for the Marine Science Program are posted on our website at http://marine.rutgers.edu/main/academics/undergraduate/program-description. The learning goals for this course apply to Program Learning Goal 1 (master the basic biological, chemical, physical, and geological principles of marine science) and Goal 2 (analyze and interpret contemporary oceanographic datasets).

Students completing this course will be able to:

Goal A. Make use of software for entering, organizing, and analyzing oceanographic data
Instructional Activities: lectures
Assessment Method: performance on lab reports, class participation

Goal B. Demonstrate ability to use oceanographic instruments and equipment to collect field data
Instructional Activities: lectures, field trips
Assessment Method: performance on lab reports, class participation

Goal C. Design a research question centered on modern techniques for collecting and analyzing oceanographic data, evaluate the relevant literature, and communicate the results in a poster, oral report, and written term paper
Instructional Activities: guidance on using databases available through the Rutgers libraries, guidance on proper citation procedures
Assessment Method: performance on oral and poster presentations, performance on term paper
Grading
- Lab reports 25%
- Participation 25%
- Oral and poster presentations 25%
- Final paper 25%