OCEANOGRAPHY HOUSE (11:628:100, 1.5 credits, Pass/No Credit)

Instructors
Professor Josh Kohut
Professor Scott Glenn
Professor Oscar Schofield

Prerequisites
None

Course Materials
All assignments available through course website

Description
The ocean is critical to life on Earth. It is a source of oxygen, water, food and energy that sustains life. It influences our weather and regulates our climate. It is the primary transportation pathway for commerce between continents. It absorbs the environmental impact of our sprawling mega-cities. Scientists require a better and more detailed understanding of the ocean to continue to unravel the complex dynamics of our Earth system. Political leaders worldwide require this knowledge to build sound policies that meet the needs of growing human populations on a planet with increasingly limited resources and a rapidly changing climate. Yet the ocean is vast, often harsh, and largely unexplored. To better understand the ocean, a new global generation of scientific explorers is needed.

The Rutgers University Center for Ocean Observing Leadership operates one of the world’s most advanced ocean observatories. Sustained spatial sampling of the coastal ocean is accomplished with a variety of new platforms and sensors that include: the local acquisition of satellite imagery from the international constellation of thermal infrared and ocean color sensors, a triple-nested multi-static HF radar network for surface current mapping and waves, a fleet of long-duration autonomous underwater gliders equipped with physical and optical sensors.

This seminar will introduce first-year students to the many research opportunities and career building opportunities available to them while pursuing their undergraduate degree. Students will be introduced to various ocean technologies, conduct a river survey on the R/V Rutgers, and summarize their work in a final group scientific poster.

Schedule:
The seminar is team taught by professors from the Center for Ocean Observing Leadership. Students participate in weekly discussions around different aspects of undergraduate student research. Mid-way through the semester, students conduct a Raritan River research cruise aboard the RV Rutgers. During that survey students learn the proper operation of water quality probes used by the New Jersey Department of Environmental Protection. These data build upon the time series of surveys conducted by previous classes. The latter half of the semester focuses on the analysis and interpretation of the data collected on the survey, culminating in preparing and presenting a poster of the results.
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), Goal 2 (analyze and interpret contemporary oceanographic datasets), Goal 3 (show evidence of scientific literacy, and communicate the information effectively both orally and in writing), Goal 4 (develop, conduct, and report on an applied research experience in marine science in collaboration with a scientific mentor), and Goal 5 (evaluate contemporary global issues and the ethics of how the ocean’s resources are used).

Evaluation and Grading

Each student will be evaluated based on their participation in class. Students will participate in weekly discussions, on the Raritan River survey and be an active team member in the analysis and interpretation of the survey data. This course is graded as pass/no credit.