Syllabus SIO 176 – Spring 2019
Observational Physical Oceanography

Professor Fiamma Straneo
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Lectures: Tuesday/Thursdays 2:00-3:20 pm - Location Spiess Hall 330
Lab Times: 3 hours per week in the Makerspace at Scripps (Time TBD)

Prerequisite SIO 171 or permission of instructor.

Office Hours:
Prof Straneo: Friday 10-11am MESOM 208, also available before/after class or via email.

Consult TritonEd for course materials and email for announcements.
There is no assigned textbook for this course. Readings will be assigned throughout the course and posted on TritonEd.

Course Description:
This course gives an introduction to the methods and measurements used by observational physical oceanographers. Topics covered include: 1) sensors such as conductivity-temperature-depth (CTD), acoustic Doppler current profiler (ADCP); 2) platforms such as autonomous gliders and ships, and services such as satellite measurements; 3) planning and execution of fieldwork. The course includes a lab-project, participation in a one day oceanographic cruise and several additional hands on activities.

Credit & Homework
Grades will be based on the midterm (20%), homework (20%), in-class presentations (10%), cruise project (20%), and a final project report + presentation (30%).

Midterm Exam: Tuesday May 7th Spiess 330
Research Cruise: Saturday June 1st on R/V Sproul 8am to 6pm
Project Presentations: June 4th and June 6th
Research Project Report: due June 12th

Research Cruise: We will board the R/V Sproul for a one-day cruise on Saturday June 1st and collect data near the mouth of San Diego Bay. Students will take a part in the planning and execution of the fieldwork. All students are expected to participate.

Draft Syllabus

Instrumentation and Platforms

1. Conductivity Temperature Depth Recorder (CTD)
2. Acoustic Doppler Current Profiler (ADCP)
3. Argo Floats
4. Wave Moorings
5. Surface Drifters
6. Autonomous surface platforms
7. Ship Based Measurements
8. Moorings

Planning and Executing Fieldwork

1. Programming and deployment of basic instruments
2. Calibration of measurements
3. Fieldwork planning (station position, sampling, safety)
4. Checklists and Field Reports
5. Measurements at Sea on the R/V Sproul

Lab Project – Building a CTD

1. Assembly
2. Programming and calibration
3. Deployment and recovery
4. Report: Writing an instruction manual