

SIOG 269 – Marine Chemistry Laboratory

Winter qtr. 2020

Instructor: Todd Martz, MESOM 337, x47466, trmartz@ucsd.edu
Lab Location/Time: ODF (DSD Bldg)/Thursday 12-3 (may be rescheduled to suit students' schedules)

Theme

Apply modern and classic techniques for analysis of seawater, introducing concepts of signal transduction, calibration, and measurement quality control. Emphasis will be placed on using state-of-the-art instrumentation to perform several fundamental seawater analyses including salinometry, determination of dissolved oxygen, nutrients, and carbon system parameters.

Requirements

This is a hands-on laboratory course. Students will complete several 1-2 week laboratory exercises under the supervision of expert sea-going staff that regularly operate common oceanographic instruments. Class meets once per week for three hours including up to one hour to cover theoretical overview and open discussion of the experiment or data analysis, followed by a two-hour lab session. Homework will be in the form of laboratory preparation and completion of reports.

Laboratory time will be scheduled by the instructor based on availability of equipment and individual teams' schedules and is expected to require 2 hours per week of time spent in the lab. Grades will be based on participation in lab and clarity/quality of the reports. Grading considerations will include comprehension of the material, presentation of data (i.e. quality of graphs, figures, and tables), data interpretation, report organization & overall clarity.

Prerequisite Knowledge

No prerequisite courses are required, but the advanced nature of projects is intended for those with some background knowledge of general chemistry. Advanced concepts related to marine chemistry and quantitative analysis will be introduced and reviewed as needed.

Course Materials

- Instruments and computers will be available in the Oceanographic Data Facility and Scripps Makerspace.
- Directions and operating instructions will be provided by the instructor for each laboratory exercise.