

Paleoceanography – 3 credits

Lecturers: Prof. Revital Bookman, Charney School of Marine Sciences, University of Haifa; Prof. Adi Torfstein, The Interuniversity Institute for Marine Sciences in Eilat.

Office Hours: Prof. Revital Bookman: Multipurpose Building – Room 268, tel. 04 8288792, email: rbookman@univ.haifa.ac.il

Course Type: Lectures/Research cruise/Student presentations/Research project and lab work/Group presentations. The course is in Eilat.

Course Level: MSc/ PhD/ 3rd year BSc students

Prerequisites: The course is limited to 18 graduate (MSc/PhD) students from all institutions of higher education. Exceptional 3rd year undergraduate (BSc) students might be accepted depending on availability.

Course Description:

A 6-day course at the Interuniversity Institute for Marine Sciences, including lectures, research cruise, student presentations, research project and lab work, group presentations.

The objectives of the course are to:

1. Study research methods in paleoceanography.
2. Study the paleoceanographic history of global oceans.
3. Study regional paleoceanography based on sediment sampling and processing.

Topics:

1. Methodologies in paleoceanography.
2. Bio tracers and micropaleontological proxies.
3. Mineralogical and sedimentary tracers in deep sea environments.
4. Stable isotopes and paleotemperatures: from Emiliani to Shackleton.
5. Ice cores and glacial cycles.
6. The history of the marine carbon cycle, atmospheric CO₂ levels and global climate change.
7. Radiogenic isotopes and geochronology.
8. Paleomagnetism, magnetic stratigraphy.
9. History of sea level change.
10. Dust in the oceans.
11. Global climate change: anthropogenic processes and future trends.
12. Paleoceanography of the Red Sea.

Language:



The language of instruction is Hebrew, however, if students who do not speak Hebrew will take part in the course, the language of instruction will be English. If the language of instruction will be English, all the course assignments will be done in English.

Grading:

Presentations and reports during the course - 40%, final project report - 50%, participation - 10%.

Reading List:

Proxies in Late Cenozoic Paleoceanography/ Hillaire-Marcel & de Vernal and selected papers.