

Course Syllabus Form

American University of Beirut
Faculty of Arts and Sciences
Department of Geology

Geol 103: Introduction to Marine Geology

1. Course Learning Outcomes

This course gives a summary of the tectonics and the morphology of the sea floor, of the geologic processes active in the deep sea and in shelf seas, and of the climatic record in deep-sea sediments. The importance of this course arises from the increasing awareness of the man's dependency on natural resources, including the ocean as a weather machine, a waste bin, and a source of energy and minerals. This course is designed to give freshman students a theoretical background on the geological processes acting in the oceans of today and learn about the oceans, the life and the climate of the past.

2. Resources Available to Students (required textbook: ***)

Seibold E., and Berger, W.H., 1996. The Sea Floor, an Introduction to Marine Geology. Third edition. Springer-Verlag. 356p.***

3. Grading Criteria

Class interest: 5%

Test 1: 25%

Test 2: 25%

Final exam: 45%

4. Schedule

Week	Topic
1, 2 and 3	Origin and Morphology of the Ocean Basins and Margins: general features of the sea floor and of continental margins, endogenic and exogenic processes, margin types.
4, 5, and 6	Sources, Composition, and Transport of Marine Sediments: major sediment types, sedimentation rates, effects of waves and currents, patterns of deep-sea sedimentation.
7, 8, and 9	Sea Level Change and Paleoceanography: sea level processes and indicators, coastal morphology and the recent rise in sea level, ancient oceans, the Pleistocene cycles, Tertiary Oxygen isotope record, fluctuations of the carbonate line and in deep ocean oxygenation.
10, 11, and 12	Distribution, Activity, and Environmental Reconstruction of Marine Organisms: organisms on rocky and on muddy bottom substrate, bioturbation, limits of paleoecologic reconstruction.
13 and 14	Resources from the ocean floor: petroleum, heavy metals, raw materials from shelves.

5. Course Policy

To ease task of reading of the textbook a lecture-note is provided for the course based on the textbook and information from other sources. All of the exam questions will be selected from the lecture-notes AND the issues discussed in the class and/or during the section sessions, as well as figures, tables and appendices selected from various sources. Lecture-notes are thus a great advantage for students who attend the classes and section sessions regularly.

Any student missing more than one fifth of the class sessions is required to withdraw from the course.