



TEL AVIV אוניברסיטת
UNIVERSITY תל אביב

Full Syllabus



Course Syllabus

Marine systems of the Mediterranean Region: Environmental challenges

Instructors: Prof. Yehuda (Hudi) Benayahu and Dr. Zafrir Kuplik

Academic year: 2024/25

Semester: Spring

Course number: 0920.6300.01

Credit hours: 2

Lecture times: Wednesday, 10:15-11:45

Classroom: Porter building, Room 101

Lecturer information

Office hours: by appointment

Phone: Prof. Hudi Benayahu 03-6409090, 0504480900

Dr. Zafrir Kuplik 0522306903

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kuplik3@gmail.com

Course policies

Requirements: Attendance is required in **all** classes and field trip.

A 10-12 min presentation on topics related to the respective class will be led by the students during designated classes. Students should assign themselves in pair to topics mentioned in the course outline. Original reading material is e provided for each topic in the course outline. It is expected that each student will search for an additional relevant peer reviewed article to be included in the presentation. The web has very useful instructions how to prepare a scientific presentation e.g.,

https://dornsife.usc.edu/assets/sites/605/docs/Tips_10_minute_Scientific_PowerPoint_Presentation

Grading: Final exam 70%, oral presentation during designated classes 15%, 3 quizzes - 5% each.



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Course description

Over 70% of the earth is covered with seas and oceans at an average depth of over 2,000 m. The oceans thus offer a much larger habitable area, both in terms of surface area and volume, than all continents put together. The Mediterranean Sea, covering an approximate area of 2.5 million km² (965,000 sq mi), although technically a part of the Atlantic Ocean, is usually identified as a completely separate body of water. The Mediterranean basin covers portions of three continents, Europe, Asia, and Africa, and includes several seas such as the Ligurian Sea, the Tyrrhenian Sea, the Ionian Sea, the Adriatic Sea, and it is also linked to other seas such as the Black Sea and the northern Red Sea. As indicated by its name, derived from the Latin *mediterraneus*, meaning "in the middle of the earth" (from *medius*, "middle" and *terra*, "earth"), the Mediterranean Sea is almost completely enclosed by land: on the north by Anatolia and Europe, on the south by North Africa, and on the east by the Levant. As such, it constituted an important route for merchants and travelers of ancient times that allowed for trade and cultural exchange between various communities of the region (e.g., Phoenicians, Greek, Roman, Egyptian, Levantine, Muslim, and Jewish cultures). The immense cultural, social and economic value of the Mediterranean Sea, it directly linked to its environmental, ecological, hydrological and geomorphologic traits.

The course will provide a short introduction dealing with the above-mentioned fields, giving a whole perspective of the Mediterranean basin, including the Gulf of Aqaba (northern Red Sea). Then, students will get to know the various habitats present in the area (such as rocky bottom, sandy bottom, coral reefs, seagrass beds, mangroves, etc.), as well as their biological inhabitants. Moreover, the course will provide students with current issues related to global human impacts on the marine environment, including overexploitation of natural resources in the area, effects of climate change and sea level rise, ocean acidification, as well as coastal management and marine conservation issues.

The course will include a field trip to the Mediterranean coast of Israel. It is mandatory to take part in this field trip.



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Course outline**

* Classes where students need to sign up for a 10-12 min presentation and 3 min discussion on the relevant subject. Each of the presentations should be a joined effort of 2 students- preparation and presentation. Papers for presentations are added in Reading material as internet links. It is expected that each student will search for an additional relevant peer reviewed article to be included in the presentation.

#	Date	Topic	Lecturer	Reading material
1	19/3/2025	World Oceans and an overview of the Mediterranean Sea	H. Benayahu	Lalli & Parsons: 8.1, 8.2 https://www.pnas.org/cgi/doi/10.1073/pnas.2005485117
2	24/3/2025 Monday 10:00-12:00 instead of 26/3	The abiotic and biotic features in marine environment*	H. Benayahu	Lalli & Parsons: 1.2: p. 2-3, 2.1- 2.4, 2.6 https://doi.org/10.1016/j.marpolbul.2022.114401
	26/3/2025 No class			
3	2/4/2025	<u>Marine invasive species</u> *	Z. Kuplik	Lalli & Parsons: 9.3 https://onlinelibrary.wiley.com/doi/full/10.1111/maec.12583
4	23/4/2025	Fisheries* Quiz 1	Z. Kuplik	Lalli & Parsons: 6.6, 6.7, 6.8, 9.1 https://www.frontiersin.org/articles/10.3389/fmars.2017.00244/full
	30/4/2025 No class, Memorial Day			
5	7/5/2025	Corals and coral reefs*	H, Benayahu	Lalli & Parsons: 8.6 http://dx.doi.org/10.3390/d12040153
	14/5/2025 No class			
6	21/5/2025	Marine invertebrates and their role in ecosystems*	H. Benayahu	Lalli & Parsons: 7.2 https://doi.org/10.1016/j.msec.2019.110467



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7	25/5 or 8/6	Field trip (08:30-13:00)		
8	28/5/2025	Sea grass beds, sea weeds, mangroves* Quiz 2	H. Benayahu	Lalli & Parsons, 8.3, 8.7 http://dx.doi.org/10.3390/md18110560
9	4/6/2025	Global change and its impact of marine ecosystems*	Z. Kuplik	Hoegh-Guldberg et al. 2007 https://www.annualreviews.org/doi/abs/10.1146/annurev-marine-041911-111611
10	11/6/2025	Mesophotic reefs, deep ocean, hydrothermal vents*	H. Benayahu	Lalli & Parsons 8.8, 8.9 https://doi.org/10.1111/conl.12875
11	18/6/2025	Zooplankton, phytoplankton and jellies*	Z. Kuplik	Lalli & Parsons: 3.1, 3.2, 3.6, 4.1-4.3, 5.2.1 https://bg.copernicus.org/articles/7/1543/2010/ https://link.springer.com/article/10.1007/s10750-008-9620-9
12	25/6/2025	Marine conservation. Concepts, current issues of sustainable management of resources, international conventions* Quiz 3	Z. Kuplik	Crain et al. 2009 https://www.sciencedirect.com/science/article/pii/S0964569118305052
13	2/7/2025	Marine pollution*	Z. Kuplik	Lalli & Parsons: 9.2 https://www.sciencedirect.com/science/article/pii/S0025326X18307033

**Lectures listed by date are subject to change throughout the semester.

Final Exam:

Date A: July 17, 2025, 09:00 AM

Date B: August 17, 2025, 09:00 AM



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Course book:

Lalli CM, Parsons TR, editors (2002) Biological Oceanography: An Introduction. 2 ed. Vancouver, Canada: Butterworth Heinemann. 314 p (internet edition).

Additional reading:

Crain CM, Halpern BS, Beck MW, Kappel CV (2009) Understanding and Managing Human Threats to the Coastal Marine Environment. Year in Ecology and Conservation Biology 2009. pp. 39-62.

Plagiarism Policy:

The strength of the university depends on academic and personal integrity. In this course, you must be honest and truthful. Plagiarism is the use of someone else's work, words, or ideas as if they were your own. Here are three reasons not to do it: 1. By far the deepest consequence to plagiarizing is the detriment to your intellectual and moral development: you won't learn anything, and your ethics will be corrupted. 2. Giving credit where it's due but adding your own reflection will get you higher grades than putting your name on someone else's work. In an academic context, it counts more to show your ideas in conversation than to try to present them as sui generis. 3. Finally, Tel Aviv University punishes academic dishonesty severely. The most common penalty is suspension from the university, but students caught plagiarizing are also subject to lowered or failing grades as well as the possibility of expulsion.

Source: <http://writing.yalecollege.yale.edu/example-plagiarism-warning-might-appear-syllabus>.