

Marine Biology and Ocean Sustainability:

Syllabus FALL TERM 2025

BIOL 4290 or 5290 – 001 CRE (44915) or CRE (45091)

University of North Texas, Denton, Texas 76203

Time: 5:30 – 8:20 pm Tuesdays Evenings

Location: ENV 115 (in person class)

Professor: Dr. Ione Hunt Von Herbing, Ph.D.

**Director: Marine Conservation and Aquatic Physiology Laboratory
& Associate Professor of Biological Sciences, UNT**

Office: Biology Dept. Rm LSCA 253, Phone number: 940-565-3595

Email: vonherbing@unt.edu

Office Hours: 3-5 pm Tuesdays. It is strongly recommended that students set-up a meeting time by email for a Zoom call.

Textbook: Jeffrey S. Levinton. Marine Biology. Function, Biodiversity and Ecology (2022). **6th Edition (required)**. Text Website: Web site: www.oup.com/us/levinton

Other Texts that might be useful:

Peter Castro, Michael Huber and William C. Ober. Marine Biology (2007) 7th Edition.
Paul R. Pinet. Introduction to Oceanography. (2008); Ecosystem Based Management for the Oceans (2009) (eds. McLeod, K. & Leslie, H.). Island Press.

Course Web Page: This syllabus, including the attached schedule, is subject to change as posted on the course web site on Canvas. Many essential course materials will be posted on the course web site.

Course description

Marine Biology covers the basics of marine biology with a global approach, using examples from numerous regions and ecosystems worldwide. Highlights interactions of physical and chemical factors and habitat diversity with the biological and physical components of the world's oceans. Environmental topics such as fisheries, mariculture, pollution and conservation. Course also includes significant discussion and lectures on topics relevant to Sustainability and Climate Change.

Prerequisite: 8 hours each of biology and chemistry. May not be repeated at the graduate level.

Course Procedure:

Attendance: Attendance is expected at all lectures - (**Tuesdays 5:30-8:20pm**) using

Examination and Grades: ALL EXAMS WILL BE TAKE-HOME & SUBMITTED THROUGH EMAIL TO: vonherbing@unt.edu.

AI use: All AI use is discouraged. Any work using AI other than grammar checks will be marked accordingly.

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Undergraduate: The course grade will be based ONE MID-TERM (25%); ONE FINAL (40%), & ONE ORAL PRESENTATION (30%) & ATTENDANCE (5%) of a peer-reviewed scientific paper (selected by the student) or other piece of writing and its presentation. Relevant to the topics covered in the course for discussion.

Exams will be based on ALL material covered in lectures, lecture notes reading assignments, handouts including journal articles.

Graduate: Same as above, but with an added essay (**Maximum 5 pages long** on any topic in marine sciences (10%) – can also be based on oral presentation. Total mark for graduate students will be out of 110%.

Grading: All exam grades and other grades are recorded as letter grades. At the end of the course, final numerical averages are used to determine final letter grades. Percentages used to divide letter grades will be at or below the following values: A 90-100%, B 80-90%, C 70-80% D 60-70%. These dividing points can vary from year to year because the dividing points are often lowered to allow a reasonable distribution of letter grades. There is always at least one "A", and there are usually several.

Exams: will be take home and consist of short-answer and long-answer essays.

The first part of the final exam will deal with material covered after the second mid-term. The second part of the exam will be essay questions covering any part of the course. Exams can be made up in the documented event of illness, death in family, or jury duty. Car trouble, visits by friends and relatives, weddings, travel plans, and other exigencies beyond serious illness or death in family will not be treated as reasonable excuses for missing exams. The meeting to schedule a make-up exam typically takes place at the end of the next class meeting after the exam, and any student wishing to take the make-up exam must justify doing so at least two hours before that class meeting and must be present at that scheduling meeting unless absent for reasons that justify missing an exam.

Withdrawal: The instructor reserves the right to submit statements of withdrawal for students who do not take the first mid-term examination. Students withdrawing before the midterm withdrawal deadline will be given grades of W.

Class etiquette: Class meetings are intended for lecture on and discussion of the subject matter, and for students to ask questions about that material. Students are strongly encouraged to ask questions and to remember that there are no stupid questions. To allow the students to hear all the lectures and participate in all the discussions for which they are paying, no private personal conversations can take place during class. Failure to adhere to this basic maxim of civilized behavior, or repeated disruption of the class by some other means will result in removal from the class.

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Accommodations for students with learning disabilities: **Students with learning disabilities must inform the professor of measures needed to account for those disabilities by the end of the third class meeting.**

Student Athletes: Students wishing that their course grades be released to advisors in the UNT athletics program must give the professor a signed dated letter indicating that wish and indicating the name and address of the person to whom the grades should be sent.

Expectations: The professor also assumes that the students want to learn and are willing to work in order to learn. Learning at the college level requires focused reading, daily review of lecture notes, and assimilation of the material covered. Students who want to learn and are willing to work will do well in the course.

Lecture Scheduling and Outline*:

***(the instructor reserves the right to change the course content at any time).**

Part One: First Principles of Marine Biology, Fisheries & Sustainability (Lectures I - III)

Note that reading assignments below are only a general guide. Much more information is scattered throughout the text, and on the companion website www3.eeee4w.oup.com/us/levinton, which will be relevant to the topics covered.

**(I - III) Introduction to Marine Biology & Ocean Sustainability
Spotlight on Global Fisheries, Aquaculture & Sustainability**

Chapters 1 & 21 Aug. 19, 26 & Sept. 2 (weeks 1-3)

Part Two: Marine Organisms: Function & Environment (Lectures VI – IX)

**(IV - V) Oceanic Environment & Climate Change
Spotlight on Paleohistory & Physics of the Oceans**

Chapters 2 - 5 Sept. 9, 16 (weeks 4-5)

(VI) Climate and the Oceans I

Chapters 2 – 5 Sept. 23 (week 6)

(VII - VIII) Climate Change & the Oceans II

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Chapter 3 Sept. 30 & Oct. 7 (weeks 7 & 8)

MID-TERM TEST (25% of mark) –
Posted on Canvas Oct. 7 - Due Oct. 21th, 2025

(IX) Spotlight - Pacific Ocean Garbage Patch
& Other Open Ocean Sustainability Issues - Coral reef Ecosystems

Chapters 10 & 17 Oct. 14 (week 9)

*Part Three: Marine Vertebrates: Adaptations to the Marine
Environment:*

Temperature, Salinity, Oxygen and pH (Lectures XI - XIII)

(X-XIV) Marine Fish, Sea Birds & Marine Mammals

Chapter 9 Oct. 21, 28 & Nov. 4, 11, 18 (weeks 10-14)

Thanksgiving Break Nov. 24 - Nov. 28, 2025

(XV) The Deep Sea & Bioluminescence

Chapter 18 & 20 Dec. 2 (week 15)

**Final Exam – Posted on Canvas on November 18th - Due December 9th,
2025 – emailed to vonherbing@unt.edu**

**Graduate essays submitted to vonherbing@unt.edu with completed
finals**