

Marine Botany Syllabus

Bio 412, Fall 2023

Jessie C. Jarvis, PhD



COURSE DESCRIPTION

This course will introduce coastal marine plant communities, including how the marine environment affects plant community dynamics. Emphasis will be placed on classification and identification, morphology, physiological ecology, importance to humans, and current hot topics. The laboratory will provide hands on experience with the major plant community types to illustrate how to identify marine plant communities and quantify their responses to environmental factors. Students will gain a knowledge and proficiency on the use of dichotomous keys and the preparation of herbarium specimens.

COURSE OBJECTIVES

1. Explain how the marine environment and marine plants interact.
2. Recognize the main biochemical, morphological and life history characteristics that taxonomically separate marine and coastal plants.
3. Access and summarize scientific literature dealing with marine plants.
4. Utilize a dichotomous key to identify local marine macroalgae.
5. Prepare properly labeled marine plant herbarium specimens.

MEETING TIMES AND LOCATION

Lecture: Tuesday and Thursday 9:30-10:45 am in KE 1111

Lab: Tuesday OR Wednesday 2:00 – 4:50 pm in FH 3014

INSTRUCTOR INFORMATION

Instructor: Dr. Jessie Jarvis

Office: CMS 2329

Virtual Office Hours: T/TH 8:30-9:30 am or by appointment; Link in Canvas

Office Phone: 910.962.2839

E-mail: jarvisj@uncw.edu*

*Please allow 24 hours for a response. If you require a faster response, you may call my office phone. Also, please include BIO 412 and an informative subject title in the subject line of the email. Failure to do so may result in substantially longer response times

Course-specific SLOs are:

1. Students should have the ability to demonstrate a fundamental level of academic competence on biochemical, morphological and life history characteristics that taxonomically separate marine and coastal plants. (Foundational Knowledge)
2. Students should be able to utilize biological literature to examine scientific questions and present biological information orally as demonstrated through their final presentations on a research topic related to marine plants. (Critical Thinking, Foundational Knowledge, Thoughtful Expression, Information Literacy)
3. Students should be able to competently critique biological literature as part of a series of 3 journal article review homework assignments. (Critical Thinking, Foundational Knowledge, Information Literacy)
4. A student should have the ability to understand basic biological experimental design and quantitative methods as demonstrated by completing a series of lab assignments culminating in one final lab report. (Critical Thinking, Foundational Knowledge)

MATERIALS AND READINGS

Textbook: Marine Botany, 2nd Edition, C. J. Dawes, Wiley ISBN: 9780471192084 We will be using it extensively throughout the course as supplemental reading material.

Website: Additional materials and study materials will be made available via Canvas.

SUGGESTED ADDITIONAL READING:

The texts listed below would be helpful both for this course and in your future science careers. These texts are NOT required, and you do NOT need to purchase them for this class. However, they are extremely helpful texts and would provide a valuable resource for you as you move through the course.

- Valiela I. 2009. Doing Science: Design, Analysis, and Communication of Scientific Research. Oxford University Press, USA.
- Ambrose HW, Ambrose KP. 2007. A Handbook of Biological Investigation, 7th Edition. Hunter Textbooks, Incorporated, USA.

ABOUT THE COURSE**Course Approach:**

In class meetings there will be lectures, readings, student presentations, discussions, problem– solving, and more. I expect you to work cooperatively in our meetings as well as study together outside of class. I also expect you to read assignments ahead of the class meeting scheduled to address the topic. In class, we will often discuss only parts of a chapter or advanced topics that build upon the reading. Thus, we may not review all the reading in class, but you remain responsible for this material for quizzes and exams. If you don't read prior to class and laboratory you should not be surprised if you become lost during the discussions and activities. This is your course and I expect you to accept responsibility for your own learning.

Lab Approach:

The lab portion of this course is **absolutely interconnected** with the lecture material. Therefore, all students are expected to attend ALL labs. You will be part of a lab team and your absence will require the other members of your team to perform extra work. **For every unexcused absence your grade for that lab will be reduced by 5%.** Lab work will vary between labs and will include microscope work, written reports, and trips out to marine plant environments. Each student will turn in all lab work at the date given in the syllabus. All work that is not turned in will be considered late and cannot be made up later.

EVALUATION

Your final grade will be based on three lecture tests (30%); a cumulative final exam (15%); lab work (30%); journal article reviews/homework questions – including final presentation (15%), and class participation (10%). The points for your grades are broken down as follows:

Course Grade

3 lecture exams (100 points each)	300 pts
1 final exam (140 points)	140 pts
7 lab assignments (25 points each)	175 pts
1 Final lab report	50 pts
Group Presentation	125 pts
Class participation points (5-10 points each)	<u>100 pts</u>
Total	890 pts

Lecture Tests:

Tests I, II, and III will not be cumulative. *The final exam will be cumulative.* My expectation is that you will be present for all the exams. *If you have a planned absence that is part of official university business, please let me know immediately so that we can schedule a time for you to take the exam early.* Otherwise, there will be no make-up exams. If you miss one exam, you may write a 15-page research paper (not including figures, tables, or references) on a topic to be chosen with me. I will then substitute your grade on the paper for the exam you missed.

Homework:

In addition to the required reading, homework assignments will be posted on Canvas under the assignments folder and under your weekly course pages. The homework will be directly related to your group presentations on your designs for a new exhibit at the fictional Marine Botanical Gardens (see more info in Canvas). All assignments will have a posted due date. Pay close attention to the due date as *NO late assignments will be accepted.*

Class Participation:

As this will be a highly active class, participation is a significant part of your evaluation. It is also part of professional behavior. I will assess your participation through periodic in-class quizzes and assignments, many of which will be accomplished with apps that require a phone or tablet. Make sure you bring your phone or tablet to each class, and that you can connect your device to the internet.

Lab Participation:

1. The lab and field portions of the course are **absolutely interconnected** with the lecture material. Therefore, all students are expected to attend ALL labs.
2. For all labs that are field trips students are expected to be at the assigned meeting points ON TIME. If you are not there on time, we will leave you and you will NOT be able to make up that week's lab. Transportation will be provided for field trips in weeks 9 & 10. For weeks 11 & 14 you are expected to either take the CREST Shuttle or provide your own transportation to the Center for Marine Science.
3. Lab work will vary between labs and will include worksheets, microscope work, field trip reports, and pressed herbarium samples.
4. Each student will turn in all lab work at the assigned date and time. All work that is not turned in will be considered late and cannot be made up later. See Canvas for more information.

Grading Scale:

The grading scale is based on the weighted percentage of your total earned points as breaks down as follows:

A	93-100 %
A-	90-92 %
B+	87-89 %
B	83-86 %
B-	80-82 %
C+	77-79 %
C	73-76 %
C-	70-72 %
D+	67-69 %
D	63-66 %
D-	60-62 %
F	below 59 %

POLICIES AND RESOURCES:**Canvas & email:**

It is critical to ACTIVELY CHECK your UNCW e-mail account as part of this course. Announcements, review materials, supplementary readings, as well as grades are maintained on Canvas for your convenience. A large percentage of the reading assignments for this course are dispensed as PDF documents through Canvas. I understand that not every student has access to a computer at home, however, if you come to UNCW for classes regularly – there are plenty of computers available to check e-mail or access an assignment from Canvas. It is your responsibility to let me know immediately if you are having trouble receiving class e-mails or accessing Canvas information.

Disabilities:

If you anticipate needing accommodations of any type for this course, you must first notify Disability Services (DePaolo Hall, <http://uncw.edu/disability/about/index.html>), provide the necessary documentation of the disability, and arrange for the appropriate authorized accommodations. Once these accommodations are approved, please identify yourself to me in order that we can implement these accommodations.

UNCW Community Safety & Resources:

UNCW is against violence and harassment of any kind. If you are concerned about a harassment situation, resources are available from [CARE](#) (Collaboration for Assault Response & Education; 910-962-2273) or through the [Campus Police](#) (910-962-3184). To officially (but anonymously) report any incident of gender-based discrimination or sexual misconduct/harassment, [fill out this report](#). Any other concerns or suggestions can be reported anonymously via our [Departmental Comment Card](#).

UNCW Code of conduct:

We will uphold the values endorsed in the [Seahawk Respect Compact](#) regardless of the mode of instruction. Any student behavior deviating from this code will be reported to the Dean of Students and may result in academic penalties up to and including academic suspension and dismissal.

COVID-19:

Please do not come to class when you are not feeling well or are experiencing any COVID-19 symptoms. *Email Dr. Jarvis immediately to discuss next steps.* If you have been exposed to COVID-19 or are concerned about exposure, please contact the Student Health Center at (910) 962-3280 for specific information about testing, contact tracing and quarantine/isolation requirements, which differ for vaccinated and non-vaccinated individuals, according to CDC guidance. Remember, keeping healthy is essential to keeping campus open! Thank you for your help and compliance.

The University Learning Center:

University Learning Center (ULC) academic support services are based on the principle that quality learning takes place when peers work collaboratively. We focus on high-quality individual and group student-centered learning that helps students become independent, life-long learners.

SCHEDULE AN APPOINTMENT

- Via the [ULC Appointments](#) page
- Phone the ULC office: 910-962-7857
- In person: the ULC office is located on the first floor of DePaolo Hall, suite #1056

IF YOU NEED ASSISTANCE WITH ULC SERVICES

- Phone: 910-962-7857
- In person: In the ULC office
- [Email](#) the ULC

[ACADEMIC ACHIEVEMENT SERVICES](#): Students work with peer mentors to develop individual plans for time management, note-taking, and test preparation. In-person & online appointments available.

[MATH SERVICES](#): Students get help with course tutoring, study skills, and math anxiety. Drop-in STEM Lab, in-person & online appointments, and select Study Sessions available.

[SUPPLEMENTAL INSTRUCTION \(SI\)](#): A series of peer-facilitated group review sessions designed to help students succeed in historically difficult courses. SI Leaders help students as they review lecture notes, discuss textbook reading assignments and review for tests. No appointments are necessary.

[TUTORING SERVICES](#): Qualified tutors support students in most University Studies courses, seamlessly integrating *what* to study with *how* to study. In-person & online appointments and select Study Sessions available.

[WRITING SERVICES](#): Students receive feedback and learn strategies for successful writing at any stage in the process. A drop-in Writing Lab and appointments (both online and in-person) are available. Students can also submit papers online (OWL) for emailed asynchronous response.

Diversity, Equity, and Inclusion Statement: What to expect of your instructor

I embrace diversity, equity, and inclusivity in the classroom and in academia. I strive to make this classroom an inclusive space for all students, free of discrimination based on race, gender identity, national origin, ethnicity, religion, social class, age, sexual orientation, political background, or physical and learning ability. I value your presence and contributions to this course and our department. If you think I can improve the accessibility and inclusivity of our learning environment, please reach out to me with suggestions.

Diversity, Equity, and Inclusion: What to expect of your department

The Department of Biology and Marine Biology at UNCW seeks to promote equity and diversity. We respect and welcome all people, with zero tolerance for discrimination of any kind. Discrimination includes all derogatory, inappropriate, and negative incidents including, but not limited to, words and actions based on personal biases related to race, color, gender, gender identity, national origin/ancestry, citizenship, religion, age, maternity, marital status, indigenous status, social origin, disability, sexual orientation, or veteran status. It is your right to learn in a safe environment and to be treated with dignity and respect, no matter your visible or nonvisible differences.

Diversity, Equity, and Inclusion: What we expect of you

It is expected that students and instructors collaborate to foster an equitable and inclusive learning environment and hold themselves accountable for being respectful. Members of the UNCW community coexist with those who are different from themselves and it is our responsibility to nurture, respect, and appreciate those differences. We engage in civil discourse as a part of the learning enterprise, but do not tolerate harassment or discriminatory behavior that seeks to marginalize or demean members of our community.

Land Acknowledgement:

The Department of Biology and Marine Biology pursues education and research on organisms and ecosystems locally, regionally, and globally. We recognize that the campus and associated properties and intellectual capital of UNC Wilmington are a product of the land and history that brings us here today. UNCW and associated properties are located within the home of the Catawba, Lumbee, and Waccamaw Siouan People, and North Carolina is home to the Coharie, Lumbee, Meherrin, Occaneechi Saponi, Haliwa Saponi, Waccamaw Siouan, Sappony, and the Eastern Band of Cherokee ([Oxendine](#), n.d.; [Native Land](#), 2021). We recognize the historical injustices and violence brought through purposeful erasure of indigenous people, communities, and culture of our region. We acknowledge the contributions of indigenous people and we honor their history, cultural wisdom, and environmental stewardship that are vital for us to enact restorative change. ([U.S. Department of Arts and Culture Honor Native Land Guide](#)). See Land Acknowledgement at [UNCW Office of Diversity and Inclusion](#) for more information.

Wilmington History

The Department would like to recognize that Wilmington and UNCW have benefitted from the impacts of racism and slavery, specifically the abuses and human rights violations perpetuated against Black people. Research shows that up to 45 percent of white households in 1860 benefited directly from slavery, which includes white families who owned the land on which UNCW and its properties now exist ([Davidson](#), n.d.). In 1898, white supremacists murdered countless black citizens, displaced thousands, and overthrew the government in the Wilmington Massacre of 1898 (see [Zucchini, 2020](#)). The Wilmington Massacre led to a state-wide disfranchisement campaign that stripped political power from African American community members for decades. It resulted in land and property loss, and supported laws and practices that gave white residents social, political, and economic power. The gains received by white residents would later benefit UNCW via land, donations, and funding to the university.

In light of historical and modern events, the department commits to acknowledging and to overcoming these inequities via educating department community members on our history and diversity and inclusion topics, developing stronger ties to underrepresented Wilmington community groups, uplifting BIPOC voices, and more actions that can be found on the [SAND webpages](#).

Bio 412 Marine Botany Course Schedule

Fall 2023

Week	Date	Lecture (Reading Assignment)	Lab
1	24-Aug	Overview; Intro to Marine Bot (Ch.1)	No Lab
2	29-Aug 31-Aug	Marine Plant Environment (Ch.1) Abiotic Factors: Geological/Physical (Ch.2)	Marine Botany Basics: Dichotomous Key
3	5-Sep 7-Sep	Abiotic Factors: Physical/Chemical (Ch.2) Biotic Factors (Ch.3)	Marine Botany Basics: Microscopes
4	12-Sep 14-Sep	Exam 1 Review; Topic Selection Due Exam 1	Bluegreen Algae
5	19-Sep 21-Sep	Algae Introduction (Ch.6) Chlorophyta (Ch.6)	Field Trip to Coquina Outcrop: Algal Zonation/ID
6	26-Sep 28-Sep	Phaeophyta (Ch.6) Rhodophyta (Ch.6)	Chloro, Rhodo, Phaeophyta
7	3-Oct 5-Oct	Macroalgal Communities (Ch.7); Preliminary Proposals Due Exam 2 Review	CMS/South Masonboro Inlet Jetty: Algal Zonation/ID
8	10-Oct 12-Oct	Exam 2 NO CLASS - FALL BREAK	No Lab - Work on Algal Zonation/ID lab
9	17-Oct 19-Oct	Salt Marsh Introduction (Ch.9) Salt Marsh Ecology (Ch.9)	Field Trip to WB: Salt Marsh ID & Monitoring Part 1
10	24-Oct 26-Oct	Salt Marsh Management (Ch. 9); Practice Presentations Due Seagrass Introduction (Ch. 11)	Marine Botany Basics: Excel Refresher
11	31-Oct 2-Nov	Seagrass Ecology (Ch.11); Presentation Critiques Due Seagrass Management (Ch.11)	CMS/Masonboro Island: Salt Marsh ID & Monitoring Part 2
12	7-Nov 9-Nov	Mangals Ecology and Management (Ch. 10); Brochure Blurb Due Marine Plants of Coral Reefs (Ch. 12)	Salt Marsh Lab Data Analysis
13	14-Nov 16-Nov	Virtual Exam 3 Review Exam 3 ONLINE	No lab – Dr. Jarvis at CERF
14	21-Nov 23-Nov	Virtual Lecture: Discovering New Species NO CLASS - THANKSGIVING	No lab – Thanksgiving Break
15	28-Nov 30-Nov	Class Presentations Class Presentations	Seagrasses vs Terrestrial Plants
16	5-Dec	Final Exam Review	No lab – Salt Marsh Lab Write Up Due
17	12-Dec	Final Exam 8:00-11:00 am	