



Marine Ecology (MSC 310WR)



GENERAL COURSE INFORMATION

Lecture: Tuesday and Thursday. 11:00 am-12:15 pm, Mote classroom

Lab: Thursday 1:30-4:30 pm, Mote Lab

Instructor: Dr. Daniel A. McCarthy

Office: Mote Office; **Phone:** 904-635-3776

Email: dmccart1@ju.edu

Office Hours: Mon (9:30-2:30 pm) & by appointment

REQUIRED TEXT:

-P. Humann & N. Deloach. 2014. Reef Fish Identification: Florida Caribbean Bahamas. 4th Edition
New World Publication, Inc., Jacksonville, Florida.

-P. Humann & N. Deloach. 2013. Reef Creature Identification: Florida Caribbean Bahamas. 3rd.
Edition. New World Publication, Inc., Jacksonville, Florida.

-P. Humann & N. Deloach. 2002. Reef Coral Identification Enlarged: Florida Caribbean Bahamas
including Marine Plants. 2nd Edition.
New World Publication, Inc., Jacksonville, Florida.

-There will be assigned readings for each topics addressed in the course on blackboard.

Optional texts:

-McMillan, V.E. 2011. *Writing Papers in the Biological Sciences*, Fifth Edition. Bedford/St. Martin's.
Boston, MA

-Kaplan EH. 1982. *A Field Guide to Coral Reefs: Caribbean and Florida*. Peterson Field
Guides New York. Houghton Mifflin.

-Gosner, K.L. 1999. *A Field Guide to the Atlantic Seashore*. Houghton Mifflin Co.

COURSE OVERVIEW

This course will cover ecological and ecosystem processes in the major marine habitats from the shore to the coast. We will explore, and learn to assess, the use of laboratory and experimental techniques in understanding the structure, adaptations, interaction, and life styles of marine organisms among the different marine and estuarine habitats.

STUDENT LEARNING OUTCOMES (SLO)

SLO One - Critical Thinking: Students will use critical thinking skills during : 1) several class field projects that they will develop during the semester, 2) one major small group project that they will be required to do and present results, and 3) on numerous group discussions on a series of peer-reviewed journal articles on current issues in coral reef ecology.

SLO Two - Diversity: Students will demonstrate knowledge and skills in working with diverse populations by the high level of interactions with diversity associated with fellow students, staff and visiting speakers of the course. They will be aided by working in assigned groups and learning how to complete assignments in a high quality and timely manner.

SLO Three - Communication: Students will use written and oral communication during : 1) several class field projects that they will develop short reports for during the semester, 2) one major small group project that they will be required to do and orally present results, and 3) on numerous group discussions on a series of peer-reviewed journal articles on current issues in coral reef ecology and management.

SLO Four -Teamwork: Students will develop their skills in working as a team during: 1) several class field projects that they will together collect and analyze data for the development of short reports for during the semester and 2) one major small group project that they will be required to do and orally present results at the end of the semester.

Lecture and Lab Schedule

This schedule is tentative and subject to change

<u>Week</u>	<u>Lecture Topic</u>	<u>Reading</u>	<u>Lab/field activities</u>
Week 1	Arrive from Jacksonville Introduction to class, logistics and safety	Reading Packet 1	Lab/Field: Discussion of group projects. Snorkeling Checkout. Explore NHB near Mote.
Week 2	Graphing and report format review Discuss techniques, experimental design & stats.	Reading Packet 1	Field: Fish/reef survey at Barrow Pit/NHB near Bahia Honda
Week 3	The use of CPC software & starlet coral photo quadrat analysis Role of Grazers in Ecosystems	Reading Packet 2	Field: Fish/reef survey at Molasses reef
Week 4	Production and consumption of resources	Reading Packet 3	Field: Fish/reef survey at Alligator reef Starlet Coral Report Due
Week 5	Reproduction of marine organisms Exam #1	Reading Packet 3	Field/lab: Plankton tows and urchin spawning
Week 6	Coral reef ecosystems	Reading Packet 4	Field: Fish comparison at protected and non-protected reefs in Newfound Harbor Key area Research topic & plan due
Week 7	Nearshore hardbottom communities Threats to coral reefs	Reading 5 Packet 5	Field/lab: Community analyses overview and assist with coral restoration at Fort Taylor Rocky Intertidal Report Due
Week 8	Intertidal rocky shores	Reading	Field: Fish/reef Survey at Sombrero

		Packet 6	Reef
Week 9	Seagrass communities (Process intertidal data)	Reading Packet 7	Field: Sea grass & rocky intertidal surveys
Week 10	Exam # 2	Reading Packet 8	Field: Fish/reef survey at Looe Key
Week 11	Coral restoration event	None	Staghorn coral restoration event
Week 12	Marsh and mangrove communities	Reading Packet 9	Field: An exploration of diversity at a mangrove area <i>Rocky intertidal report due</i>
Week 13	Soft-sediment habitats	Reading Packet 9	Field: Fish/reef survey at Sand Key Light
Week 14	Pelagic and deep-sea connections	Assigned readings	Lab: Project presentations
Week 15	Overview/discussion of latitudinal differences in reefs along the Florida Keys Final Exam	Assigned readings	Depart for Jacksonville

GRADING: Final grades will be assigned as A: 95-100, A-: 90-94, B+: 86-89, B: 83-85, B-: 80-82, C+: 76-79, C: 73-75, C-70-72, D+: 66-69, D: 63-65, D-: 60-62, F: <60). Your final grade in this class will be based on the following graded items.

Three lecture exams	30% (10 % each exam)
Three lab reports	40% (13.3 % each)
Project oral presentation	
-Topic, references & plan	2%
-Draft presentation	6%
-Final version	10%
Attendance & participation	12%
Total	100%

EXAMS

The three in class exams count for 30% of the total grade. **No Make-up exams will be given!!** Students who miss a test for legitimate reasons will be excused from the test and their grade will be prorated.

GENERAL LAB REPORT GUIDELINES (See handout for more specific instructions)

- 1) All reports will be due one week after completion of project.
- 2) All reports will follow the scientific format.
- 3) Each assignment must be computer-generated.
- 4) All margins are to be 1 inch wide.

- 5) You must use a plain font (something like the one on this page).
- 6) The font must be 12 pt.
- 7) Lab reports assignments should be 5 to 8 pages of text (not counting the title page, tables or graphs).

RESEARCH PROJECT AND PRESENTATION

Students will do a group research project where they will develop and conduct a small coral reef related research project. Towards the end of the semester, each group will develop a 15-minute presentation on the findings of their research.

ATTENDANCE

You are expected to be at class! There is a great deal of material covered during this class. To maximize your chances of excelling in this course it is best that you attend class! In the case of excused absences, please inform me of the nature of the absence before you miss class. You should be advised that having an officially excused absence means that you are excused from being in attendance for the day in question, but you are still responsible for the material covered that day.

POLICY ON LATE WORK AND MAKING UP MISSED WORK

All late work will be assessed a 20% penalty. Late work will be accepted until the assignment in question has been graded and handed back, or made available to be picked up. The turn-around time between an assignment's due date or an exam date and their return can be quite short, so you must contact me immediately in order to schedule a time to make up missed work. If you know you will miss class due to an officially excused activity, you **MUST** arrange to take care of assignments, exams, etc., **BEFORE** you go! If you are sick or other situations beyond your control prevent you from completing required work by the due date, let me know immediately either via phone message or e-mail (the preferred method), and arrangements can be made for you to complete the required work.

PLAGIARISM AND CHEATING

Plagiarism and cheating will not be tolerated in this class! Plagiarism and cheating are defined as follows: Plagiarism is the presentation of information as one's own when in reality some or all of the information was derived (or copied) from some other source (including work of other members of the class). Cheating consists of any unauthorized use of notes, texts, or other sources (including copying answers completed by others) so as to give an unfair advantage to a student in completing a class assignment or an examination. Intentionally aiding another student in cheating is also considered cheating.

LEARNING DISABILITIES

A student with a documented, professionally diagnosed disability is entitled to certain special consideration under federal law, to assist with completing the requirements of the course. All reasonable assistance will be given to help a learning disabled student to meet the course requirements. A student with a documented learning disability who wishes to receive such consideration must make his or her condition known to the instructor(s) before completion of the first graded assignment in the course. In no way does a learning disability exempt a student from course or degree requirements.