

BOT 4404 Phycology Spring 2018

Instructor: Dr. Ligia Collado-Vides-(Claudia)

Date: January 8th – April 23th, 2018

Lecture: Monday and Wednesday 9:00-10:15 CP 117

Lab section: Thursday 12:00- 2:50 PM, second section 3:00 to 5:50 OE 169

Office: MMC- OE 211

Office Hours: T 3:00 to 5:00 PM and W 11:00-1:00 PM

By appointment only

Email: colladol@fiu.edu

Introduction

This course is an introduction to the world of algae. It will cover algal systematics, biogeography and taxonomy; will address algal physiological and ecological aspects, and will discuss algal responses to human dimension issues such as global change, nutrient cycling, biogeochemical products and toxicity with an emphasis on marine macroalgae.

Course description

The course employs active learning and sometimes group strategies to increase students' engagement. Learning will be achieved through lectures, invited speakers and different learning strategies that will provide information on biological concepts as well as methods for the study and use of algae.

Objectives

- 1- Provide students with a basic knowledge of the evolution, taxonomy and biogeography of major algal groups. This will be achieved by critically reading scientific literature and analyzing particular cases.
- 2- Provide students with a good understanding of the anatomical, morphological and physiological features of major algal groups. This will be achieved through active learning exercises and linking structure and function aspects of algae.
- 3- Prepare students to critically analyze the role of algae in ecological processes related with global change. This will be achieved by understanding algal responses to global change analyzing study cases.
- 4- Discover and understand the applied aspects of phycology including the value of secondary compounds, ecotoxicology and risk assessment, the potential of algae as biofuels, the industries of agars, alginates, and the use of algae as bioindicators.

Learning outcomes

- 1- Through the study of evolutionary processes, and taxonomic case analysis students should be able to understand the major processes that explain the presence-absence of species at the biogeographic level of the major algal groups.

2- By the end of the course students should be able to explain the interaction between structure and function of algae and develop potential scenarios resulting from global change analyzing possible algal responses to different environmental drivers.

3- Students will be able to describe and analyze the role of algae in different ecosystems under global change context.

4. Students will be able to integrate and have a global perspective of the link of the world of algae and human dimensions. Students will be able to analyze the potential use of algae at the ecosystem and industry level, as well as provide the elements related with non-desirable responses of algae to human stressors to the environment.

TEXTBOOK:

We will not have a single text book, therefore only recommended are:

Algae (2nd Edition); Graham, Graham and Wilcox (2009) and **Seaweed Ecology & Physiology, Lobban and Harrison (2000)**.

COURSE ACTIVITIES AND ASSIGNMENTS

In class and homework

Class participation will be evaluated based on mandatory readings, quizzes and class participation using Clickers.

Mandatory Readings

Instructor will provide scientific articles related with the class topics. (PDF uploaded in Blackboard/Mandatory readings section). Student will present the abstract of all the papers, **minimum of 250** words and 500 maximum words per paper, you should **NOT add any title or author of the paper, no name of student or quiz number**. A quiz for each paper will be conducted online. Abstracts will be returned using Turnitin using Blackboard link.

Quizzes

A quiz will be also provided via online on Blackboard associated with each reading.

*Clickers: **Use of clickers is mandatory***

Each class a series of questions will be addressed to stimulate discussion and debate. Each class you can earn 3 clicker points. Two questions will count **ONLY** if you get the correct answer adding for 2 point, and 1 point will be earned if you participate up to 75% of the questions each class day.

Essay

Research Paper: Students will write a 5 page (double spaced) research paper on an alga species or genus of their choice. Students should select their algal species (or genus) based upon the alga's importance from a biological, ecological, economic, societal or cultural perspective. For each paper the student must introduce the basic biology, taxonomy, life history characteristics, anatomy, morphology and ecology of their species (or genus). The paper should also discuss the reasons why this species is of particular importance. Papers should be in essay format fully referenced with literature cited. **Graduate students will instead write a 10 page research proposal on a topic of interest related to algae. The proposal should be in**

standard National Science Foundation format. Papers for all students are due on **Monday April 16th, 2018**-no exceptions, using Turnitin link in Blackboard

Due DATE: Monday April 16th, 2018.

Your project has to be submitted using Turnitin tool in your Blackboard web site.

Guidelines:

Five pages of double-spaced text + figures, maps & tables as needed

Must include a minimum reference list of 10 citations, all 10 must be scientific papers. You may use websites but they do not count for the MINIMUM of 10 peer review papers.

Please number pages & use 12-point font, Times New Roman

Your paper must be submitted to turnitin.com for an authenticity check before it will be graded. If any of the paper is **plagiarized (> 15% similarity)**, you will get a 0 for the assignment and you will fail the class. REMEMBER: You must cite and paraphrase all work appropriately, otherwise its plagiarism (= *the wrongful appropriation and publication as one's own, of the ideas or the expression of the ideas of another*).

Your paper must be posted by the due date, **Monday April 17th by 5 PM**. Within 30 minutes of submission you will be able to see the same originality report that the instructors will see. You are encouraged to submit your paper early and ensure do not have plagiarism above 15%. You must ask the instructor to delete earlier versions before you submit your final version.

Assessment of how you are doing (Grading)

Keep track of your activities, be sure you are reaching the goal you set for this class. Understand the value of each activity and plan according to the schedule.

In class and homework: 40%

Online abstracts 15%

Online quizzes 15%

Clicker in class participation 10%

Exams: 40%

Two midterm exams 10% each, and a final exam 20%

Essay and Presentation: 20%

An individual or group (max of 3) final essay submitted via Turnitin that will count up to 20% of your grade, and a poster in class presentation will be conducted by the end of the semester, the poster will count up to 20% of your grade. Your poster presentation will be collectively graded.

Grading:

A	B+	B	C+	C	D+	D	F
90-100	85-89	80-84	75-79	70-74	65-69	60-64	< 59

Grades are not negotiable. I do not curve grades. I do not allow students to complete extra credit assignments to bring up their final grade. You must attend lectures, participate in discussions, and study throughout the semester. **** Important!** If you are struggling in the course, please come for help *during* the semester when there is still time for me to help you.

Take advantage of my office hours or make an appointment with me. Do not wait until the end of the semester and ask me to change your grade; by then it is too late.

Exam Make-up Policy: Make-up exams are given only for emergency reasons or University-recognized religious holidays. You must contact me as soon as possible if you are aware of any potentially excusable missed exams prior to the exam time. **No make-up exams will be provided, instead your final exam will be used to substitute your missing grade, plus the final** . For this course, “emergency” is defined as an unpreventable event that impedes your attendance.

Emergency situations are:

1. Medical emergency with Medical Doctor’s note/emergency room.
2. Automobile accident with police report (lack of ride is NOT an emergency case).
3. Death of immediate family members.

Late Assignment Policy: Late assignments (essays, homework, etc.) will be penalized by 10% for each day late.

Instructors Communication: All instructor communication and announcements will be done by email and through the blackboard section of the course web site. Only students’ FIU email address will be used. If students do not use their FIU email account, use the easy to set up automatic mail forwarding option to the email account you are using regularly. **Students are required to maintain a functional FIU email account and to observe the “News” web page.** Emails that are returned due to “over quota” email accounts will not be re-sent. All email from students must contain “**Phycology**” in the subject line; student emails without proper subject line and without the student’s **name** will **not** be answered!

Help with Writing: If you need additional assistance with writing, please contact the Center for Excellence in Writing (305-348-6634).

Academic Integrity: **There is a zero tolerance policy for cheating in this course!** Cheating during exams (e.g., looking at another’s paper, possession of notes, talking) and on assignments is unacceptable, will result in an automatic zero on the assignment, and will be reported to University Officials. Plagiarism on written assignments (passing off another person’s ideas as your own) will result in the same actions. If you are unsure whether an action is considered plagiarism, please see the PLAGIARISM POLICY in the Student handbook or ask me.

Student Disability: Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact DRC (Disability Resource Center) within 1 week of the beginning of this course to make the necessary accommodations.

Sexual harassment policy: FIU is committed to eliminating sexual harassment. In accordance with the FIU Faculty Senate guidelines, this syllabus includes a warning that any misconduct will be reported.

Academic misconduct: FIU is committed to not tolerating any academic misconduct by students. In accordance with the FIU Faculty Senate guidelines, this syllabus includes a warning that any academic misconduct, particularly cheating in exams, will be reported and penalized.

Schedule might have unexpected changes.

ALWAYS STAY INFORMED!

Please check your Blackboard site regularly

PLEASE BE RESPECTFUL WITH YOURSELF, PROFESSOR AND PEERS

No cell phones or beepers, chatting, surfing internet are tolerated during class.

Schedule

week	Day	Class #	Topic	Mandatory Reading/Quiz	Written Essay	Lab session
1	Monday Jan 8	1	Introduction Generalities of algae			
	Wednesday Jan 10	2	Different algal forms and shapes			
	Thursday Jan 11					no lab
2	Monday Jan 15	3	no class	Guiry/1		
	Wednesday Jan 17	4	Algal Classification systems			
	Thursday Jan 18	1				Introduction how to prepare herbarium collections, where to collect algae in south Florida
3	Monday Jan 22	5	Algal life cycles/recruitment	LeClerck/2		
	Wednesday Jan 24	6	Cyanobacteria			
	Thursday Jan 25	2				Form and Shape of Algae/ cyano/ diatoms
4	Monday Jan 29	7	Diatoms	/3		
	Wednesday Jan 31	8	Green Algae			
	Thursday Feb 1	3				Green Algae
5	Monday Feb 5	9	Green Algae	/4		
	Wednesday Feb 7	10	EXAM 1			
	Thursday Feb 8	4				Green Algae
6	Monday Feb 12	11	Red Algae	/5	Select Topic for Essay	
	Wednesday Feb 14	12	Red Algae			
	Thursday Feb 15	5				Red algae
7	Monday Feb 19	13	Brown Algae	/6		
	Wednesday Feb 21	14	Brown Algae			
	Thursday Feb 22	6				Red Algae
8	Monday Feb 26	15	Form and Function Generalities	/7	Have 5 approved peer review citations for your essays	
	Wednesday Feb 28	16	From and Function Light			
	Thursday March 1	7				Brown Algae
9	Monday March 5	17	Form and Function Nutrients	/8		
	Wednesday March 7	18	Algae and CaCO3 production			
	Thursday March 8	8				Brown Algae
10	WEEK of March 12 - 16 Spring Break					
11	Monday March 19	19	EXAM 2			
	Wednesday Mar 21	20	Algae on Coral Reefs		Have all 10 approved peer review citations for your essay	
	Thursday March 22	9				Field Trip
12	Monday March 26	21	Algae on coastal lagoons and estuaries	/9		
	Wednesday March 28	22	Algae on coastal lagoons and estuaries			
	Thursday March 29	10				Finalize Herbarium collection
13	Monday April 2	23	Harmful algal blooms	/10	Finalize frst draft of your essay	
	Wednesday April 4	24	Human Dimension fuels and secondary compounds			
	Thursday April 6	11				Lab presentations
14	Monday April 9	25	Human Dimension Climate Change	/11	Finalize second draft of your essay	
	Wednesday April 11	26	Human Dimension case study			
	Thursday April 12	12				Lab presentations
15	Monday April 16	27	Student Presentations		Submit Essay by 5:00 PM	
	Wednesday April 18	28	Synthesis class			
	April Thursday 19					No Lab
16	Week of April 23 FINAL EXAM					