

# ECOLOGY

## Instructor

Dr Yannis Papastamatiou

## Office

Marine Science Building, BBC, Rm 355

Contact: Tel 305 919 4017, email:ypapasta@fiu.edu

## Office hours

Tuesday 2-4 pm or by appointment

## Lecture and discussion

TR 11-12:15, AC1-264

## Introduction and goals

We will cover an overview of how organisms and their environment interact. By the end of the course you should have a basic understanding of ecological concepts and why these are important to us. You should also gain an understanding of the scientific method through experimental case studies. Topics you should have an understanding of include:

- 1) How are organisms adapted to their environment?
- 2) How do organisms interact with each other and what role do they play in the ecosystem?
- 3) How do humans 'fit' into nature?

## Textbook

The economy of Nature, 7<sup>th</sup> edition, Robert Ricklefs & Rick Relyea

## Clickers

We will use **i-clickers** to gauge your progress. **You will earn regular and extra credit by using the clickers.** Clicker questions might appear *in any class meeting*. You are responsible for the proper functioning of your clicker.

## Blackboard:

Here you will find the course website, which includes updated syllabus and schedule, course announcements, lecture powerpoints, supplemental resources, discussion board, and gradebook. Go to [fiu.blackboard.com](http://fiu.blackboard.com)

### Grading:

Midterm exams (2@ 20%):	40%
Cumulative final exam:	20%
PLTL*	10%
Written assignments (2@ 5%)	10%
Class participation activities	15%
Clicker participation (use)	5%
Clicker extra credit (correct answers)	up to 5% extra

*\*If you do not do PLTL, or do not pass it, then that 10% of the grade will be added to your final exam grade instead (i.e. the final would count for 30% of your grade).*

### Grade scale

A = 90-100%, B= 80-89%, C = 70-79%, D = 60-69%, F = 0-59%.

Course grades will be rounded to the nearest 1%. So, for example, if your course grade comes out to 89.5, that will round up to 90 and an A, but an 89.4 will round down to 89 and a B. **There will be no exceptions, no curving, no points added, no grades dropped, and no additional extra credit besides that earned from the clickers.**

### Exams:

Midterm exams will last 60 min, and will consist of about 50 scantron questions (T/F, multiple choice, matching). The final will last the full 2¼ hours, with about 100 questions total: about 50 questions on the new material, and about 25 questions each on the material covered by exams 1 and 2. The final will be similar in format to the midterms.

Everything covered or done in lecture and in the corresponding reading will be on the exams. You are expected to know each topic to the breadth and depth that we cover it in class. Exam questions will vary in difficulty from easy to challenging. A solid understanding of the concepts and examples discussed should be enough to pass (C), but to achieve a superior grade (A), you will also need to synthesize concepts and apply them to new situations.

Please bring a #2 pencil, eraser, and photo ID to all exams. Allow extra time to arrive on exam days. If you are more than 30 minutes late for an exam or the first person has completed it and left the room, you will not be able to take the exam.

***Don't miss an exam.*** In the event of a valid university-approved reason (medical emergency, serious accident, death in the immediate family, unavoidable jury duty, etc.), you would *need to let me know ASAP* (beforehand if possible) and provide official documentation (hospital admit, police report, death certificate, etc.). This is the only way to receive any consideration other than a zero for a missed exam.

### **Written assignments:**

There will be two outside-of-class written assignments. Bring both to class as hard copies (we will discuss them), and also submit to turn-it-in on Blackboard. See the schedule for start and due dates.

- 1) “**Find and interpret a graph**” from an ecological journal paper of interest. Please see Blackboard for the assignment form and instructions. Then, find a results graph from a primary research paper. Cut and paste the figure (graph) onto the form, and explain the graph by answering the questions right on the form. Finally, print and attach the abstract of the paper. Further instructions will be given in class. ***You must use the form and you must type to receive credit.*** No handwritten responses can be accepted.
- 2) Take an online “**Ecological footprint quiz**” and write a reaction. Please see Blackboard for the assignment form and instructions. Take the quiz on the website link provided and then answer the questions right on the form. ***You must use the form and you must type to receive credit.*** No handwritten responses can be accepted.

### **Class participation activities:**

During most class hours, we will do an in-class interactive activity. This may be a discussion of an ecological controversy, a case study, a current event, or feedback about the lecture or reading and your understanding of it. For each such activity, you will write and hand in a brief response in class. ***You must be present to participate, and you cannot make up participation activities afterwards!***

To earn full credit, you must show clear evidence of thought and engagement, and communicate that in concise, complete sentences. At the end, your participation activity grade will be the percentage you earned of the total possible points. For example, if there were 20 activities total and you earned 16 points, your participation activity grade would be  $16/20 \times 100 = 80$ . Using this formula, if you miss fewer than 2 activities, you could earn extra credit

### **Clicker participation (use):**

You will earn the clicker participation part of your grade simply by interacting with your colleagues and voting on all or most of the clicker questions in each class hour. At the end, your clicker participation score will be the number of class hours you used your clicker / the number of class hours we used them. So for example, if you used your clicker in 26 class hours out of 27, your clicker use grade would be  $26/27 \times 5 = 4.81$  points out of 5.

### **Clicker extra credit:**

You will earn 1 raw clicker point for every correct answer. At the end, your raw point total will be scaled to a maximum of 5% extra credit, with the highest total in the class scaling to the full 5%. So for example, if you earn 100 raw clicker points and the person with the highest total of raw points got 120, then you would get  $100/120 \times 5 = 4.17$  points added to your course grade.

### **General expectations and how to succeed:**

- **Invest study effort.** *Be sure that you schedule enough time to read, study and keep up.*
- **Watch Dr. Chew and do it:** <http://www.samford.edu/how-to-study/>
- **Read the chapters *before*** the corresponding lectures.
- **Attend every class** and *actively* participate in discussions, interactive questions, and activities. Research by Dr. Helen Young (Middlebury College) showed a 2% lower grade for each missed hour of class in a similar course. Likewise, many studies show that active, social engagement with the material produces meaningful, enduring learning. *Bottom line: don't miss any classes!*
- **Take good lecture notes.** Indicate any areas of difficulty to look up after class. Structure your notes as lists, outlines, or in some other form that is useful to you. This initial processing of the information begins the process of making it your own, aka *learning* it!
- **Ask questions;** ask for clarification if you don't understand something.
- **Help your neighbor** and contribute to the group. If you help each other, everyone will do better including you.
- **Review concepts ASAP** after class, using the book and other resources to clarify any hazy areas. For the most enduring learning, try to find the answers to your questions yourself, or through active participation in a study group.
- **Assess your knowledge** continuously. Ask yourself questions and use the questions in your book. To practice concepts: diagram it, describe it, explain it, and discuss it.
- **Come to office hours** or make another time to see me with any questions or concerns ASAP
- **Read all course emails and announcements** on Blackboard. You are responsible for all information in them, as well as anything announced or posted in class.

### **Associated Laboratory:**

The laboratory (PCB 3043L) is a separate one credit course taught by a graduate teaching assistant. The courses are completely independent, although many of the concepts and themes are mutually reinforcing. ***I strongly recommend that you take the lab at some point.*** Although I welcome your feedback about lab as well as lecture, please ask your TA first about any lab-specific questions or concerns.

### **Honor and safe place policies:**

As scientists and scholars, we hold ourselves to the highest standards of integrity. The FIU honor policy will apply fully to our work in this class. Any cheating on exams or plagiarism on written work will result in a grade of F for the assignment and the course. We will use turn-it-in.com to ensure that no inadvertent plagiarism creeps into your writing. Using more than one clicker will result in temporary confiscation of the outlaw clicker, and permanent loss of clicker points for the owner and user.

Likewise, as a progressive learning community, FIU does not tolerate sexual harassment or any other civil rights violation against any student or course personnel.

See the FIU Student Code of Conduct at:

[http://www2.fiu.edu/~jms/standards\\_of\\_conduct.htm](http://www2.fiu.edu/~jms/standards_of_conduct.htm)

FIU's discrimination and sexual harassment policies are available at:

<http://regulations.fiu.edu/regulation>

*This syllabus information, including course requirements and grading, may change at any time to better meet the needs of the group, or due to unforeseen circumstances.*

The most current version will be kept updated on Blackboard, so check there if in doubt.

Proposed schedule (note: this may not be exact and could change slightly. Updated versions will be posted on Blackboard)

Day	Date	Topic	Chapters
1	Tue 1/9	Course Introduction: what is Ecology?	1
2	Thur 1/11	Adaptations to water	2
3	Tue 1/16	Adaptations to land	3
4	Thur 1/18	Adaptation to change	4
5	Tue 1/23	Climate	5,6
6	Thur 1/25	Biomes/Evolution and adaptation	7, 8
7	Tue 1/30	Life History	8
8	Thur 2/1	Reproductive strategies	9
9	Tue 2/6	Reproductive/social behavior	10
10	Thur 2/8	Mid-term 1	
11	Tue 2/13	Population distribution	11
12	Thur 2/15	Population structure and growth	12
13	Tue 2/20	Population dynamics	13
14	Thur 2/22	Population genetics	

15	Tue 2/27	Predation and herbivory	14
16	Thur 3/1	Parasites	15
17	Tue 3/6	Competition	16
18	Thur 3/8	Mutualism	17
	Spring Break		
19	Tue 3/20	Community structure pt1	18
20	Thur 3/22	Community structure pt 2	18
21	Tue 3/27	Midterm exam	
22	Thur 3/29	Succession	19
23	Tue 4/3	Energy and elements in ecosystems pt 1 "Interpret graph" assignment due in class	20, 21
24	Thur 4/5	Energy and elements in ecosystems pt 2	20, 21
25	Tue 4/10	Landscape Ecology and biogeography	22
26	Thur 4/12	Global Conservation and Biodiversity	23
27	Tue 4/17	Marine conservation "Ecological footprint quiz" is due in class	
28	Thur 4/19	Finish/Review	