

Ecology - PCB 3043 - Summer "A" 2017

Syllabus & Schedule—modified May 25

Please read this syllabus and schedule *thoroughly* by the first day of class and ask any questions ASAP. You are responsible for knowing this information!

Your instructor:

John Cozza, jcozza@fiu.edu (for quickest response use this address, not Blackboard)
Please include "ECOLOGY" in the subject line of all emails

Office hours in 216 OE:

Mon: 10:30-11:30 am & 2:30-5+ pm; Weds: 10:30-11:30 am; Thurs 4-5+ pm; Fri: 2:30-5+ pm. Other times by appointment. Exam review Q-&-A sessions TBA. No office hours on exam days. *I am here for you! Please come see me!*

Lecture and discussion (required and essential!):

MWF 12:00 – 2:15 in SIPA 125.

Do not sit by yourself in the back. Do sit near neighbors!

Introduction and learning goals:

We will explore the science of ecology: how organisms interact with their environment and with each other. Why study ecology? In the words of FIU's own Steve Oberbauer, it is "*how the planet works!*" By the end of the course, you will be able to discuss major ecological concepts and applications, and gain skills in interpreting research. You will be able to consider hypotheses and evidence for key questions in ecology such as:

- How are organisms adapted to their environment? For example, what kind of diet are humans adapted for (and how do we figure that out)?
- What are the advantages and disadvantages of sex?
- What limits populations? How many people can the Earth accommodate?
- Why don't predators eat up all their prey? How can competitors coexist?
- What determines which species live together? What is the role of biodiversity?
- How do energy and nutrients flow among species? Could we "use up" the Earth?
- How do humans "fit" into nature? How might biodiversity loss and climate change affect us? What can we do about it?

We will employ active and interactive learning to explore these and other crucial questions.

Textbook (required):

Ricklefs, R. & R. Relyea, 2014. *The Economy of Nature*, 7th edition. W.H. Freeman & Co.

Clickers (required; you must use the device, not the app):

We will use **i-clickers** to gauge your progress, and to stimulate thought and discussion. **You will earn extra credit by using the clickers.** Clicker questions might appear *in*

any class meeting. You are responsible for the proper functioning of your clicker. See me if cost is an issue.

PLTL (strongly recommended):

This stands for 'Peer Led Team Learning.' It gives students the opportunity to master the material covered in lecture by meeting outside of class time in small groups, and learning from each other. Groups of 8-12 students are led by a former student of Ecology who did well in the course. **PLTL leads to better understanding of concepts and higher grades!** This is especially true in summer Ecology, because your workshop will be customized to our version of the course, and no other. Your PLTL section will meet once a week on Friday, Monday, or Tuesday for 2½ hours—*time well spent!* Section times, and instructions for registering for a section, will be provided at the first lecture meeting. *Be sure to register on time for best choice of sections!*

Blackboard:

Here you will find the course website, which includes updated syllabus and schedule, course announcements, lecture powerpoints, required readings and supplemental resources, PLTL info, discussion board, and gradebook. Go to fiu.blackboard.com

<u>Grading:</u>	<u>with PLTL</u>	<u>without PLTL</u>
Exam 1	15%	20%
Exam 2	15%	20%
Cumulative final exam	20%	30%
PLTL	20%	0%
Written assignments (2@ 5%)	10%	10%
Class participation activities	20%	20%
Clicker extra credit	up to 5% extra	up to 5% extra

Grade scale: A = 93-100%, A- = 90-92%, B+ = 87-89%, B = 83-86%, B- = 80-82%, C+ = 77-79%, C = 70-76%, D = 60-69%, F = 0-59%.

A grade of "C" or better is required to pass the course and earn credit in the biology major. 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 grades dropped, and no unearned points will be added** to anyone's grade. The only extra credit available will be that earned by using your clicker, and by participating in and writing about selected enrichment activities announced in class.

Exams:

Exams 1 & 2 will each last 60 min, and will consist of 50 scantron questions (T/F, multiple choice, matching). The final will last the full 2¼ hours, with about 100 questions total: 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 relevant 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 even think of missing an exam—because of the nature of the summer course, *there will be no make-ups.* In the event of a valid university-approved reason (medical emergency, serious accident, death in the immediate family, unavoidable military or 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 this summer. 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 the ecological literature. Please see Blackboard for the assignment form and instructions. Then, find a novel (i.e. not covered in class or your book) results graph from a primary research paper of interest. Cut and paste the figure (graph) onto the form, and explain the graph by answering the questions right on the form. Finally, print the abstract of the paper (print the page right from the journal pdf; *do not* cut and paste) and attach this page to the hard copy of the form to hand in. 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.

How to use turn-it-in:

On the “originality report” that turn-it-in provides, consider each highlight. If it's coincidental (something anyone could say, e.g. “the consequences of biodiversity loss”) then it's OK. But if it's the specific wording of your author or website, or another student, then you have to remove it. And you can't just change a few words—turn-it-in will still detect this—you must completely rewrite the highlighted sentence(s) in your own words. *If in doubt—rewrite! The best way to avoid plagiarism is simply not to have the source in front of you (or up on the screen) while you are writing! And you can never cut-and-paste an author's text into your document--ever!*

Class participation activities:

On most days, we will do an in-class interactive activity. This may be a discussion of an ecological issue, a case study, 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. Participation activities may appear at any time—but often they will be at the end of class, so do not leave early! ***You must be present to participate, and you cannot make up participation activities afterwards!***

Your written responses will be graded as “full effort” (1 point), “partial effort” (0.5 point) or “minimal effort, copied, or fraudulent” (0 point). To earn full credit, you must show clear evidence of thought and engagement, and communicate that in concise, complete sentences. You may discuss your ideas with your neighbor, but your written response must be entirely your own original work.

At the end, your participation activity grade will be the percentage you earned of the total possible points. You may miss one participation without penalty. For example, if there were 20 activities total and you earned 16 points, your participation activity grade would be $(16 + 1)/20 \times 100 = 85$. The maximum participation grade is 100.

*Participations count as much as an exam, and are an easy way to **raise your grade** if you attend every class, or conversely, a sure way to lower your grade if you miss class.*

Clicker extra credit:

You will earn 1 raw clicker point for participating in each question, and 1 additional point if you answer it correctly. 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 145 raw clicker points and the person with the highest total of raw points got 172, then you would get $145/172 \times 5 = 4.22$ points added to your course grade.

General expectations and how to succeed:

- **Invest huge study effort!** Because of the compressed summer schedule, the course will be fast-moving and intense. *Be sure that you schedule enough time to read, review, study and keep up!* This is especially true if you are taking another challenging course in Summer A.
- **Watch Dr. Chew and do it:** <http://www.samford.edu/how-to-study/>
- **Read the chapters *before*** the corresponding lectures.
- **Attend every class on time** 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, preferably handwritten.** Indicate any areas of difficulty to look up after class. Structure your notes as lists, outlines, concept maps, or in some other form that is useful to you. This initial processing of the information helps you begin to make it your own, aka *learn* it!
- **Ask questions;** ask for clarification ASAP. There are no stupid questions!

- **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, links on slides, 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, as well as (once you grasp the concepts) the practice exam questions that will be posted on Blackboard. To *actively* practice concepts as you study: 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—or just to talk about ecology!
- **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.
- **The prime directive** is for you to have a valuable experience and succeed! I am here to work together with you, and I am most happy to do so, but you must tell me what you need and do your part, too.

Associated Laboratory:

The laboratory (PCB 3043L) is a separate one credit course taught by a graduate teaching assistant. The courses are completely independent, although the concepts and themes are mutually reinforcing. ***I strongly recommend that you take the lab at some point!*** Although I am always eager to hear your feedback about the lab as well as the 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 or fraud on written work, will result in a grade of F for the assignment and, if warranted, the course. Using more than one clicker will result in temporary confiscation of both clickers, and permanent loss of clicker points for the owner and perpetrator. All course materials are for your use only—do not share, post, or sell (it's stealing). *Serious dishonor or cheating will result in academic misconduct charges.*

As a progressive learning community, FIU values diversity, and does not tolerate sexual harassment or any other civil rights violation against any student or course personnel.

Academic misconduct definitions and procedures are detailed at:

<http://academic.fiu.edu/academicbudget/misconductweb/1acmisconductproc.htm>

FIU's student code of conduct, and policies on discrimination and sexual harassment, 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.

Schedule of lecture topics, readings, and exams

(any additional readings TBA)

DAY	DATE	TOPIC	CHAP	PERSPECTIVE
1	M 5/8	Course introduction; What is ecology?	1	
2	W 5/10	What is ecology; Adaptations to water	1, 2	Organism
3	F 5/12	Adaptations to land, and to change	3, 4	
4	M 5/15	Climate and biomes	5, 6	
5	W 5/17	Evolution and adaptation; life history <i>Introduce "Find & interpret an ecology graph"</i> <i>You must use the form on Blackboard</i>	7, 8	5/15: last day to add/drop 5/16: \$\$\$ due
6	F 5/19	Sex, kin and sociality	9, 10	
7	M 5/22	Population structure	11	
8	W 5/24	1 st hour: EXAM #1 (days 1-5, chap. 1-8) 2 nd hour: More on sex, kin and sociality	9, 10	
9	F 5/26	Population growth and dynamics	12, 13	
	M 5/29	Memorial Day (holiday)		
10	W 5/31	Predation, herbivory, and parasitism	14, 15	Community
11	F 6/2	Competition and mutualism <i>"Find & interpret a graph" is due in class</i>	16, 17	
12	M 6/5	Community structure <i>Introduce "Ecological footprint quiz"</i> <i>You must use the form on Blackboard</i>	18	6/5: last day to drop w/DR
13	W 6/7	1 st hour: EXAM #2 (days 6-11, chap. 9-17) 2 nd hour: More on species interactions (movie: <i>The Queen of Trees</i>)	Van Noort 2004 (<i>posted</i>)	
14	F 6/9	Succession and biogeography	19, 22	
15	M 6/12	Energy and elements in ecosystems	20, 21	Ecosystem & Biosphere
16	W 6/14	Biodiversity conservation <i>"Ecological footprint quiz" is due in class</i>	23	
	F 6/16	Final EXAM (days 12-16, chap. 18-23) + cumulative		

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