

FLORIDA ATLANTIC UNIVERSITY
Boca FL – SPRING 2017

COURSE SYLLABUS
PRINCIPLES OF ECOLOGY

INSTRUCTOR: Dale Gawlik, Ph.D.
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<http://www.science.fau.edu/biology/gawliklab/>
<http://www.science.fau.edu/biology/envirosoci/>

Course: PCB 4043-002-31358
Credits: 3
Time: T/TR 9:30-10:50
Location: BU 120

TEACHING ASSISTANT:

BSC 1010/1010L and BSC 1011/1011L)

PREREQUISITES: ~~8 credits of General Biology~~ and CHM 2045

COREQUISITES: None

**Online
resources**

Blackboard for PCB 4043 and Mastering Biology program. Students should check the Blackboard site at least weekly to keep current with changes in the course and to obtain course material. The web site contains the syllabus, lecture notes, handouts, and many useful links. It also offers students the opportunity to monitor their grades at any time. The Mastering Biology program is from Person Education Inc. and available for free at www.masteringbiology.com.

Required materials to be secured by the student

- Text “Ecology: the Experimental Analysis of Distribution and Abundance”. 2009. C. J. Krebs. Sixth edition. Benjamin Cummings, San Francisco, CA.
- SimUText program, SimBiotic Software, Ithaca, NY. Purchase through FAU Bookstore or direct from SimBio for \$10. See Blackboard Announcements for purchase instructions.
- I>clicker.
- Mastering Biology program from Person Education Inc. Detailed login instructions will be posted to Blackboard announcements.

Course Description:

A functional approach to the basic principles and concepts of modern ecology. Lecture and field trips

Course objectives

Students that have completed the course should be able to:

1. Recall the fundamental concepts of ecology.
2. Justify the use of models in ecology.
3. Differentiate between patterns and processes.
4. Understand how ecology is relevant to the quality of human life and the sustainability of all living things on the planet.

Course procedures

The course will be taught with a mix of active and passive teaching techniques. Passive techniques include traditional textbook material and lectures. *Lectures* will focus on selected concepts from the text as well as interesting case studies, some from my personal research program. You must know the lecture material thoroughly. Each week I will post on Blackboard an outline of my lecture notes the night before a given lecture. Students may choose to bring the lecture notes to class and fill in the voids with their own notes. Material from the *text* will be given as homework and covered on exams. In some cases I may ask students to read the text or other assigned reading on their own rather than to cover it in lecture. Students will be expected to complete homework assignments as assigned. The active teaching elements of the course are the *SimUText computer model exercises* and *Mastering Biology E-assignments* outside of class, and the *I>clicker questions* and *short peer to peer discussions* during class.

SimUText exercises: Each student is required to purchase the software and complete three assignments individually. Instructions for purchasing the software are available in the Announcements on Blackboard. SimUText exercises are not a team assignment. Each assignment requires the student to use a simulation model to explore the effects of various model parameters, which illustrate concepts presented in class or in the text book. The first two assignments, Understanding Population Growth Models and Isle Royale, each consist of 10 online graded questions. The third assignment, Intermediate Disturbance, consists of 10 online graded questions and an electronic report submitted through Blackboard Safeassignment. The report should have enough detail so that someone unfamiliar with the exercise could understand what was done and why. The report should have a cover page with the course information, exercise title and date, student name, etc... The body of the report will be responses to the questions in the SimUText Workbook, which can be printed or saved to a pdf when the SimUText software is opened. Detailed instructions on formatting will be available through Blackboard under assignments. The teaching assistant will be available during scheduled sessions to instruct students on how to use simulation model software. The material in the modeling exercises will be covered in exams.

Mastering Biology online E-assignments: Each student will be required to register at the website and complete 10 assignments. This software is free. E-assignments are not team assignments. Each assignment consists of about 10 online questions designed to illustrate concepts presented in class, the text book, or in additional required online reading from the eText available through Mastering Biology. Assignments are due Friday at midnight each week except during spring break and the 5 weeks in which we have exams. Each of the 10 assignments is worth 10 points.

I>clickers: I>clicker questions will be given daily during lectures. Some questions will be graded whereas others are to promote discussion or help me determine how well the class understands a concept. Five of the lowest scores on graded questions will be dropped from the calculation of the final grade. Each student must **REGISTER THEIR I>CLICKER THROUGH BLACKBOARD BY JANUARY 20** to receive the points for registration. Simply click on the link in Tools (I>Clicker remote registration) and enter your ID number. I>clicker questions cannot be answered without the I>clicker so students should bring the device to each lecture. Because an important value of an I>clicker question is the instant response I get during class, answers written on paper will not be accepted. Likewise, it is not possible to make up questions missed because of an absence. However, remember that I drop the lowest 5 I>clicker scores. Please be mindful that sharing I>clickers among students or using another student's I>clicker is a breach of academic integrity.

Class participation: Active teaching techniques rely heavily on student participation in discussions and demonstrations. Even though the class size is large, student participation is strongly encouraged. Each student brings to class their unique perspective on ecology. Sharing these diverse views will add greatly to the course content and it is a good habit for any student considering going on to graduate school. Students are expected to conform to FAU's attendance policy as described in the Undergraduate Catalog below.

Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.

Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University- approved activities. Examples of University- approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.

Time requirements

Students that want to receive an A should expect to spend about 4-6 hours per week on this course outside of class. Time should be allocated each week for reading the text, reviewing lecture notes, completing E-assignments, and working on simulation exercises.

Exams

There will be four multiple choice exams plus a comprehensive final exam. On test days, students are responsible for bringing a scantron sheet, pencil, and photo ID. No electronic devices of any type are allowed. Exams will include material from the text book, lectures, and simulation exercises. If the final exam score is higher than the lowest regular exam score, the final exam score will be substituted for the regular exam score. Because the final can substitute for a test, there will be **NO MAKE UP EXAMS**. The instructor should be notified of a missed exam prior to the absence. The instructor must be notified within 24 hours of the missed exam

period. If for some extraordinary reason a student misses more than one exam for excused absences, a makeup exam may be given in the testing center on reading day. Format will be short answer and fill in the blank. Any doctor's note to be used for an excuse absence must include a legibly written doctor's name, address, and a contact name and number for verification.

Code of Academic Integrity

Students at Florida Atlantic University are expected to maintain the highest ethical standards. Dishonesty is considered a serious breach of these ethical standards, because it interferes with the University mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Dishonesty is also destructive of the University community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see http://www.fau.edu/ctl/4.001_Code_of_Academic_Integrity.pdf

Letters of reference

One of the best measures of your performance in class is your final grade. Thus, I do not provide letters of reference based only on my knowledge of your class performance. I do provide letters of reference for students I observe participating in research projects or other professional activities outside the classroom.

Grading criteria

Grades will be based on a student's performance on 13 course components, with each component accounting for a percentage of the grade and total points as follows:

Course component	% of Grade (approximate)	Maximum Possible Points
I>clicker registration by Jan 20	3	20
SimUText graded questions Population Growth Models	1	10
SimUText graded questions Isle Royale	1	10
SimUText report Intermediate Disturbance	4	30
SimUText graded questions Intermediate Disturbance	1	10
Mastering Biology E-assignments	14	100
I>clicker questions	7	50
Exam 1	14	100
Exam 2	14	100
Exam 3	14	100
Exam 4	14	100
Final Exam	14	100
Total points		730

Final percentages of total points will be converted to letter grades as below.

Grade	Final Percentage of Maximum Possible Points
A	92-100
A-	90-91
B+	88-89
B	82-87
B-	80-81
C+	78-79
C	72-77
C-	70-71
D+	68-69
D	62-67
D-	60-61
F	<60

Communication devices

In keeping with University policy, cell phones should be disabled or set to silent in class.

Students with disabilities

In compliance with the Americans with Disabilities Act (ADA), students who require reasonable accommodations due to a disability to properly execute coursework must register with the Office of Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses: Boca Raton, Davie, and Jupiter, however, disability services are available for students on all campuses.

Religious Accommodations

Students who wish to be excused from coursework, class activities or examinations must notify the instructor in advance of their intention to participate in religious observation and request an excused absence.

Tentative course schedule (see Blackboard calendar for final details and updates). The schedule of topics to be discussed is subject to change during the semester, depending on the needs of the class; however, the exam dates are firm.

Date	Topics	Assigned Reading Chapters
Jan 9	Syllabus Scientific method and definition of ecology	1
11	Scientific method and definition of ecology (cont.) Evolution and natural selection	1 2 (E-assignment due Jan 9)
16	Martin Luther King, Jr. Holiday	
18	Evolution and natural selection (cont.) Behavioral ecology	2 3
23	Geographic distributions	4 (E-assignment due Jan 16)
20	Biotic factors that limit geographic distributions Clicker registration in Blackboard due	5
25	Abiotic factors that limit geographic distributions	6 (E-assignment due Jan 23)
27	Exam 1	
30	Abiotic factors that limit geographic distributions (cont.)	6
Feb 1	Distribution and abundance Population parameters and demographic techniques SimUText Population Growth Models and Isle Royale exercises	7 8 SimUText Population Growth and Isle Royale
6	Population parameters and demographic techniques (cont.)	8 (E-assignment due Feb 6)
13	Population growth	9
15	Species interactions: competition SimUText Population Growth Models online questions due	10 (E-assignment due Feb 15)
20	Species interactions: predation SimUText Isle Royale online questions due	11

22	Exam 2	
27	Species interactions: herbivory and mutualism	12
1	Species interactions: disease and parasitism	13 (E-assignment due Mar 1)
6&8	Spring Break	
13	Applied ecology: harvesting populations	15
15	Community structure in space and time: biodiversity and succession	18, 19 (E-assignment due Mar 15)
20	Applied ecology: conservation biology	Outside paper
22	Applied ecology: conservation biology (cont.)	Outside paper, (E-assignment due Mar 22)
27	Exam 3	
29	Community dynamics: Predation and Competition in Equilibrial Communities SimUText Intermediate Disturbance	20 SimUText Intermediate Disturbance
Apr 3	Community Dynamics: Disturbance and Nonequilibrium Communities	21
5	Community Dynamics: Disturbance and Nonequilibrium Communities (cont.) SimUText Intermediate disturbance report and online questions due	21, (E-assignment due Apr 5)
10	Ecosystem metabolism: secondary production	22, 23
12	Ecosystem metabolism: nutrient cycling	23, 24, (E-assignment due Apr 12)
17	Exam 4	
19	Synthesis of key concepts	“Key Concepts” for each chapter covered
26	Reading day (no class)	
May 1	Final Exam (7:45-10:15 AM) BU 120	