

**Valdosta State University**  
**Department of Biology, College of Arts and Sciences**  
BIOL 3250 A, B, C, D: Ecology and Evolution  
Lecture and Lab Syllabus, Spring 2014

---

**Instructor:** Dr. Cy L. Mott

**Office:** Bailey Science Center 1212

**Office Hours:** Monday 4:00 – 5:00 P. M., Wednesday 1:00 – 2:00 P. M. or by appointment

**Phone:** 229-333-7851

**E-mail:** [clmott@valdosta.edu](mailto:clmott@valdosta.edu)

Note: Please DO NOT send messages through BlazeVIEW, as they are not automatically forwarded to my VSU email account. Using the email address above will result in the most prompt response.

**Course Time and Location:** Lecture (BSC 1023): MWF 11:00 – 11:50 A. M.

Labs (BSC 2073):

A: Monday, 1:00 – 3:50 P. M.

B: Tuesday, 9:30 A. M. – 12:20 P. M.

C: Thursday, 9:30 A. M. – 12:20 P. M.

D: Thursday, 1:00 – 3:50 P. M.

**Prerequisites:** BIOL 1100, 1107, 1108, and BIOL 3200, each with a grade of “C” or higher, or permission of instructor.

**Required Textbook/Equipment:**

*VSU, Ecology and Evolution* (a custom book designed specifically for this course; available at the VSU bookstore and Dorks Books’ Valdosta location). A copy has also been placed on reserve at the library.

Personal Response System (“Clickers”): ResponseCard NXT

Registering your clicker: <http://www.valdosta.edu/academics/elearning/documents/nxt-student-response-guide.pdf>

You are required to have access to the course textbook in order to complete assigned readings. Readings are to be completed ***before*** class in order to be able to participate in class activities. Homework, quiz, and exam questions will be based on readings from the text as well as in-class material. Each student must also have their own individual ResponseCard clicker in order to actively participate in class activities and have their attendance recorded.

**Recommended Textbooks:**

*A Primer of Ecology* (any edition). Gotelli, N. J. Sinauer Associates, Inc.

This textbook highlights the mathematical basis of many ecological and/or evolutionary theories and may be useful for students having difficulty with the theoretical modeling aspects covered during the course.

**Course Description (from the course catalog):** An introduction to major topics in ecology and evolution, including population, community, and ecosystem ecology; Darwinian theory of evolution through natural selection; microevolution and macroevolution. Computer and field labs will provide exposure to both evolutionary theory and field ecology.

**Course Objectives:** Upon completion of this course, students will be expected to:

- 1) display an understanding of key concepts in ecology/evolution and associated theoretical and empirical evidence, while demonstrating a knowledge that evolutionary theory underlies all phenomena in biology
- 2) display an understanding of the scientific method as applied to ecological and evolutionary questions,
- 3) gain experience in reading, interpreting, and presenting information found in the primary literature, as well as build upon this information to design and conduct a service learning project that demonstrates tangible and relevant benefits to the local community

**Attendance:** Attendance in lecture and lab is expected of all students and will be verified through participation in class using clicker responses; students responding to < 80% of clicker questions throughout the semester will automatically receive an “F” for the course due to non-attendance (updated records of your attendance **will not** be provided throughout the semester, therefore students who frequently miss class must be responsible for keeping track of their own attendance habits). If you do not have a clicker for a particular day in class, you will be recorded as “absent”. Students arriving > 15 minutes late to lab will not be permitted to participate in lab activities and will be recorded as “absent”. **UNDER NO CIRCUMSTANCES MAY A LAB BE “MADE UP” AFTER THE WEEK OF THAT LAB HAS PASSED!!!** The VSU policy of 80% minimum attendance will be strictly enforced, and the 20% allowable absences include any and all classes missed due to: a) illnesses; b) athletic activities; c) “family emergencies”, and any other events. No absences will be deemed “excused” simply because they place a student over the 20% mark, and therefore students must be responsible enough to monitor their absences. No sharing of clickers is permitted, and any students caught “clicking in” for another student will immediately fail the course, as will the student whose clicker is being used...therefore, guard your clicker with your life!

Absences for college-approved activities and in cases of personal emergencies (i.e., death in the immediate family or student hospitalization) on exam/quiz days will be approved at the discretion of the instructor if provided with suitable documentation (which may include doctors’ notes, hospital admittance forms, or obituaries). In the case of college-approved activities, students must provide a minimum notice of five (5) business days to the instructor so that accommodations can be made. Lecture exams missed without prior approval cannot be made up, and all points associated with missed lectures will be forfeited. Students missing lecture exams with prior approval must take exams **before** their scheduled absence; no student will be permitted to take a lecture exam after it has been administered to the rest of the class. Students missing lab with prior approval due to college-approved activities and/or personal emergencies as described above may have the opportunity to attend another lab section during the week if available, but travel to any field sites will be the responsibility of the student due to limited seating in the university vans. Students with potential course conflicts that restrict them from arriving or leaving class on time should consult with the instructor immediately.

### **Assessments:**

**Exams (300 points):** The dates for all exams are included in the Tentative Schedule (i.e. subject to change). **YOU MUST BRING A PENCIL WITH YOU.** All cell phones must be turned off during exams, and students using cell phones during an exam will automatically earn a zero (0) for that exam. All book bags, books, purses etc. must be placed at the front or back of the room at the start of the exam; **NO EXCEPTIONS.** If you do not feel comfortable putting your purse, bag, books, etc. on the stage, do not bring them with you to class. Hats, sunglasses, or other cryptic attire cannot be worn during exams, earphones may not be used during an exam,

and students will be required to sit in every other seat. Students are not permitted to leave the classroom during an exam once it has begun, and any students doing so will earn a zero (0) for that exam. **Once the first student has turned in their exam, no students arriving late after this time will be permitted to take the exam.**

Exam I.....50 points  
Exam II.....75 points  
Exam III.....100 points  
Exam IV.....125 points  
Final..... Will replace either: a) lowest exam; or b) exam for which replacement will result in the most points.

Given that all exams are semi-cumulative (i.e. include the major learning outcomes of previous topics), if students are satisfied with their grades on the first four exams and all lab grades, the cumulative final is not mandatory. **NO EARLY FINALS WILL BE GIVEN UNDER ANY CIRCUMSTANCES!** Having multiple finals on a single day does not constitute a special circumstance; it constitutes being a typical college student. Any student attempting to copy, take pictures or steal a hard-copy of any test or quiz will receive an automatic “F” for the entire course and face disciplinary action for student misconduct.

**Quizzes (50 points):** Throughout the semester, six lecture quizzes dealing with the vocabulary from the textbook will be administered, with the lowest quiz score being dropped. Quizzes will be administered on days when we begin a new chapter, though not all chapters will begin with a quiz. These quizzes will assess students’ knowledge of concepts/terms and their ability to provide and/or recognize examples, not their ability to simply regurgitate definitions.

**Service Learning Project (Paper 50 points; Poster 50 Points):** Throughout the semester students will work in small groups to design and complete a service learning project that directly addresses a topic from the course material, utilizes independent data collection and statistical analyses, and provides a tangible benefit to the local community (VSU, city of Valdosta, Lowndes County, etc.) Additional details will be provided throughout the semester.

**Lab Homework (50 points):** Throughout the semester, students will be assigned a relatively short series of homework problems dealing with the activities of six labs, with the lowest homework grade being dropped. Students absent or arriving > 15 minutes late to lab on these days are not eligible to complete the homework and will automatically receive a zero on these assignments.

Your current grade in the course can be calculated at any time by dividing the number of points you have earned (which will appear in BlazeVIEW) by the total points possible for assignments, exams, etc. completed to date (Total points possible for each assignment will also be shown in BlazeVIEW). Consequently, I will not calculate grades for students or determine what a student needs to earn a particular grade, as these are simple (i.e. grade school) mathematical calculations.

**THERE IS NO EXTRA CREDIT FOR THIS COURSE!!! DO NOT EVEN BOTHER ASKING!!!**

**Grade Scale:**

A = 90-100%	(495.00 – 550.00 points)
B = 80-89%	(440.00 – 494.99 points)
C = 70-79%	(385.00 – 439.99 points)
D = 60-69%	(330.00 – 384.99 points)
F = < 60%	(0.00 – 329.99 points)

**THERE WILL BE NO “ROUNDING” OF GRADES; PLEASE PLAN ACCORDINGLY!!!**

**Withdrawing from the course:** The last day to withdraw without penalty is Thursday, March 6, 2013. If you do not officially withdraw, and instead just stop coming to class, you will receive an “F” for the course.

**Academic conduct:** Cheating / plagiarism will not be tolerated and may result in a failing grade for the assignment, exam, or the class. The Department of Biology has a plagiarism policy, which can be viewed at any time on the department homepage.

**Privacy Act (FERPA):** The Family Educational Rights and Privacy Act (FERPA) prohibits the public posting of grades by social security number or in any manner personally identifiable to the individual student. No grades can be given over the telephone or email because positive identification cannot be made.

**Students with disabilities:** Students requiring special accommodations because of disability should discuss their needs with me as soon as possible. Those needing accommodations that are not registered with the Special Services Program must contact the Access Office for Students with Disabilities located in Farber Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).

**Student Conduct:**

- 1) Children, friends, or pets are not allowed in lecture or lab.
- 2) **No active cell phones, iPods, or other electronic/multimedia devices in lecture** without instructor approval. This rule is in effect at the time class starts, and all electronic devices, if present, should be placed in bags or otherwise out of site. Beginning January 20<sup>th</sup> (the 2<sup>nd</sup> week of school), students observed using cell phones during lecture or lab will lose 2% from their final grade for the course for each offense. Repeat offenders may be dropped from the class.
- 3) Each homework assignment will have a set number of days during which it can be completed, and students will always be made aware of the “completion window”. Online assignments will never be “reopened” once the completion window has closed, regardless of any reason students may provide for failing to complete an assignment. In addition, no student will be provided early access to online assignments.
- 4) Students that wish to bring laptop computers to class should seat themselves so as to eliminate distractions to classmates; if students are using such equipment in a distracting manner (i.e. checking email, web-surfing, listening to music, etc.) laptops will be banned from the classroom for all students.
- 5) Cheating of any kind will not be tolerated; this includes copying another student’s material, cheat sheets, electronic devices, etc. There will be no first warning, and I will recommend the maximum penalty for the first violation, up to and including **expulsion from the university**. As students, you are also responsible for policing each other. Consequently, anyone aiding a “cheater” or not reporting observed cases of cheating to the instructor will be considered an accomplice and subject to similar penalties as those actually cheating.

I maintain office hours for students needing to discuss course material, and these hours will always be available unless students are otherwise notified in advance. Office hours are meant to address specific questions students may have, not to re-teach lecture material in the case of student absence. If students cannot attend these scheduled office hours, they may make an appointment for an alternate time. However, if a student schedules an appointment outside of scheduled office hours and does not arrive, that student will lose the opportunity to schedule appointments outside of established office hours in the future.

**NEVER, EVER, EVER, EVER EMAIL ME TO ASK WHAT YOU MISSED IN LECTURE OR LAB IF YOU ARE ABSENT; IT IS YOUR JOB TO CONSULT WITH CLASSMATES AND DETERMINE WHAT YOU MISSED!!!**

**Notes/Study Tips:**

- a) Remember when sending an email that your professor's name is not "Hey"; an email should begin with Dear Dr. (insert name), then continue with your message written in actual English words (not text language), and conclude with terms such as "Sincerely", "Thanks in advance", etc. Realize that many older people (i.e. your professors) are not biologically linked to their phones in the ways observed in younger generations...please allow up to three (3) business days before sending a follow-up email if you haven't received response.
- b) There is a documented positive relationship between how often you attend class and your grade...why pay thousands of dollars a semester to not take advantage of someone that you are paying to educate you?
- c) Educators recommend studying 2-3 hours per week for each credit hour, which means you should be studying 8-12 a week for this class, not counting the time spent in class. Without fail, the number one thing students say when describing why they did not achieve the academic goal they had set for themselves: "I should have studied more!"
- d) Don't simply write down the things that the instructor writes down; believe it or not, they may be saying something important even when they don't write it down! If you are not sure if it's important, write it down anyways, just to be sure. If your instructor talks too fast, ask (don't tell) him/her to slow down...this is your very expensive education, so get what you need out of it.
- e) The phrase "***I don't know***" is the most powerful phrase in the sciences, because it allows us to push past the boundaries of current knowledge. Students are often embarrassed to admit they don't know something, but not knowing is what has allowed the world's greatest scientists to uncover new things. Odds are if you don't know, half of the class does not know either...
- f) When students say "I can multi-task while studying", what they really mean is "I enjoy doing twice as much work for half of the result". If you eliminate distractions (TV, music, crowds, etc.) your increased focus will allow you to absorb the information much faster and more completely, allowing you time for more enjoyable activities (unless studying is your most enjoyable activity).
- g) **BIOLOGY IS HARD!** Few students ever list something in the sciences as an "easy major", so the earlier you realize the difficulty of the field, the less likely you will be to panic, become unorganized, or, most often, blame the instructor for being "too tough".
- h) The phrase "*D for Degree*" no longer applies, as approximately 120,000 students a year are graduating with a biology degree, to such extent that just having the degree is no longer the easy way into getting a job. Due to the overabundance of degree-holders, those with lower GPAs will only have those jobs available to them that better students did not want (DON'T salt your food during an interview before you taste it)...
- i) Most students view higher education as the way to get a job...but you have a job right now as a student, and you should get into the habit of practicing good workplace ethics now: be on time, be prepared, and take responsibility for yourself (because no one else will!)

**PENALTIES:** In recent years, increasing numbers of students have made a habit of asking questions that are already answered in detail by the syllabus, either because they do not read the syllabus or they assume the rules outlined in the syllabus are flexible or mere suggestions...the most common student justification for such behavior is that “it doesn’t hurt to ask”. However, in this class, “it doesn’t hurt to read and understand directions”, and **a 1% reduction in the final grade will be applied to any student asking questions that are directed address by the syllabus (1% per each offense)**. In addition, students sending emails to the professor in an unacceptable manner (i.e. no subject, no salutation, no signature, incoherent / text language, demand of immediate response, etc.) will receive a succinct email reminding them to read the syllabus and try again; no response will be sent until a suitable revision has been received.

### **Educational Outcomes Relevant to this Course:**

#### **VALDOSTA STATE UNIVERSITY GENERAL EDUCATIONAL OUTCOMES (GEO)**

4. Students will express themselves clearly, logically and precisely in writing and in speaking, and they will demonstrate competence in reading and listening. They will display the ability to write coherently in standard English; to speak well; to read, to understand, and to interpret the content of written materials in various disciplines; and to listen effectively and to understand different modes of communication.
5. Students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices. They will understand the basic concepts and principles underlying scientific methodology and be able to collect, analyze, and interpret data. They will learn a body of scientific knowledge and be able to judge the merits of arguments about scientific issues. They will be able to perform basic algebraic manipulations and to use fundamental algebraic concepts to solve word problems and equations. They will be able to use basic knowledge of statistics to interpret and to analyze data. They will be able to evaluate arguments based on quantitative data.
7. Students will demonstrate the ability to analyze, to evaluate, and to make inferences from oral, written and visual materials. They will be skilled in inquiry, logical reasoning, and critical analysis. They will be able to acquire and evaluate relevant information, analyze arguments, synthesize facts and information, and offer logical arguments leading to creative solutions to problems.

#### **DEPARTMENT OF BIOLOGY EDUCATIONAL OUTCOMES (BEO)**

1. Develop and test hypotheses, collect and analyze data, and present the results and conclusions in both written and oral format used in peer-reviewed journals and at scientific meetings.
2. Describe the evolutionary process responsible for biological diversity, explain the phylogenetic relationships among the other taxa of life, and provide illustrative examples.
3. Demonstrate an understanding of the cellular basis of life.
4. Relate the structure and function of DNA/RNA to the development of form and function of the organism and to heredity
5. Interpret ecological data pertaining to the behavior of the individual organism in its natural environment; to the structure and function of populations, communities, and ecosystems; and to human impacts on these systems and the environment.

Date	Topic	Reading	Lab Activity
13-Jan	Course Introduction	1	Introduction to Service Learning and Scientific Writing
15-Jan	Ecology, Evolution, and Scientific Inquiry		
17-Jan			
20-Jan	<b>NO CLASS</b>		<b>NO LAB</b> - Time to Develop Service Learning Projects
22-Jan	Variation as the Basis for Natural Selection and Evolution	2	
24-Jan			
27-Jan			
29-Jan	<b>EXAM 1</b>		Natural Selection Simulation Activity
31-Jan	Artificial and Natural Selection as the Mechanism of Evolution	3	Ring Species Activity
3-Feb			
5-Feb			
7-Feb	Evidence of Micro- and Macroevolution from Extinct and Extant Organisms	4	<b>No Lab</b> - Finalize Service Learning Topic, Methods, Analyses, etc.
10-Feb			
12-Feb			
14-Feb	Organizing Evolutionary Histories through Phylogenetics/Cladistics	5	Phylogenetic Reconstruction
17-Feb			
19-Feb			
21-Feb	<b>EXAM 2</b>		
24-Feb	The Physical (Abiotic) Template as a Basis for Biodiversity	6	TBD
26-Feb			
28-Feb			
3-Mar	Organismal Responses to Variation in the Physical Template	7, 8	Host-Parasite Coevolution
5-Mar			
7-Mar			
10-Mar	The Dynamics of Single Species (Population Ecology)	9, 10	Cemetery Demography
12-Mar			
14-Mar			
17-Mar	<b>NO CLASS</b>		<b>NO LAB</b>
19-Mar			
21-Mar			
24-Mar			
26-Mar	Evolutionary Change in Single Species (Population Genetics)	11, 12	Hardy-Weinberg Activity
28-Mar			
31-Mar			
31-Mar	<b>EXAM 3</b>		<b>No Lab</b> - Free time to work on service learning project
2-Apr	The Transition from Micro- to Macroevolution (Modes of Speciation)	13	
4-Apr			
7-Apr			
9-Apr	The Dynamics of Multiple Species (Community Ecology)	14-17	Quantifying Niche Overlap
11-Apr			
14-Apr			
16-Apr	Variation in How Organisms Live their Lives (Life History Strategies)	18	Food Web Activity
18-Apr			
21-Apr			
23-Apr	The Dynamics of Species and their Abiotic Environment (Succession)	19	Measuring Succession
25-Apr			
28-Apr	Energy Flows and Nutrient Cycles	20	Service Learning Project Poster Presentations
30-Apr			
2-May	<b>EXAM 4</b>		
5-May	Review, Q + A, Practice Questions, etc.		
9-May	FINAL 12:30 - 2:30 P. M.		

