

Valdosta State University
Department of Biology, College of Arts and Sciences
BIOL 3250 Ecology and Evolution: Sections A & B
Lecture and Lab Syllabus, Spring 2016

Instructor: Dr. Cy L. Mott

Office: #1212 Bailey Science Center

Office Hours: Monday, Tuesday 10:00 – 11:00 A. M. or by appointment

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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 1024): Monday & Wednesday, 3:30 – 4:45 P. M.

Labs (BSC 2073):

A: Tuesday, 2:00 – 4:50 P. M.

B: Thursday, 12:30 – 3:20 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). A copy has also been placed on reserve at the library.

Personal Response System (“Clickers”): ResponseCard QT (**NOTE:** If you already own the older style clicker, the ResponseCard NXT, you will need to pay an additional charge to register the clicker for the course. There was a rebate provided for this additional fee in Fall 2015, but I do not know if it is still available in Spring 2016).

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 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 create a lab report that follows the steps of the scientific method.

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 regularly 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 submit lab homework 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 for both lecture and lab (i.e. you must meet the 80% mark for both), 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. Therefore, there are no designations as “excused” versus “unexcused” absences, and no absences will be deemed “excused” simply because they place a student over the 20% mark if the student has failed to provide documentation for all previous 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 that result in missed exams/homework (i.e., death in the immediate family or student hospitalization) 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 possible. Students with potential course conflicts that restrict them from arriving or leaving class on time should consult with the instructor immediately.

Assessments:

Exams (350 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. out of your sight, 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 (unless they are finished), 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 chapters), 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 of, or steal any graded material will receive an automatic “F” for the 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 of the new terminology from that chapter, not their ability to simply regurgitate definitions. Students that do not stay for the entirety of lecture after taking a quiz will receive zero points for that quiz.

Formal Lab Reports (100 Points): Throughout the semester students will work in small groups to design and complete lab reports based on the results of lab exercises, including independent data collection and statistical analyses. Additional details will be provided throughout the semester, and lab reports will introduce students to biological research and scientific writing.

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 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 quizzes, exams, lab reports, 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 how many points a student needs to earn a particular grade.

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 3rd, 2016. 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 can result in a failing grade for a quiz, assignment, exam, etc. or the entire class depending on the severity of the infraction. 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, tablets, or other electronic/multimedia devices in lecture or lab **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 sight. Beginning Monday, January 18th (the 2nd week of school), students observed using such devices during lecture or lab without prior approval will lose 1% from their **final grade** (not the final point total) for the course for each offense (deductions shown on BlazeVIEW gradebook).
- 3) Students that wish to use the aforementioned devices for classroom purposes will be required to sign a statement describing their intended use, and any student observed using such devices for any other purposes will lose 2% from their **final grade** (not the final point total) for the course for each offense (deductions shown on BlazeVIEW gradebook). Students using electronic devices in class must sit in the first two rows of the classroom.
- 4) 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.
- 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 or shows on a slide; 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 (Ask me about not salting 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!)

KNOWING THE SYLLABUS: In recent years, increasing numbers of students email professors with questions that are already answered in detail by their syllabi, primarily because many students simply do not read syllabi or they assume the rules outlined are merely suggestions. The most common student justification for such behavior is that “it doesn’t hurt to ask”. However, in this class, ***a 1% reduction in the final grade (not the final point total) per each offense will be applied to any student emailing questions to the professor that are directed address by the syllabus.*** Examples of such questions include: “Are you going to round grades at the end of the semester”, “I missed lab last week; can I make it up?”, or “I have three finals on Friday; can I take yours early?” Questions that demonstrate knowledge of the syllabus but simple confusion with the meaning of a particular deadline/rule will face no penalties, and students may feel free to ask any question about the syllabus in person (i.e. the penalty is only enforced when I must take the time to compose and send an email addressing a question that is already answered by the syllabus). 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.

TENTATIVE COURSE SCHEDULE

Date	Topic	Reading	Lab Activity
11-Jan	Course Introduction: Ecology, Evolution, and Scientific Inquiry	1	NO LAB
13-Jan			
18-Jan	Dr. Martin Luther King Jr. Holiday - NO CLASS		NO LAB
20-Jan	NO CLASS		
25-Jan	Variation as the Basis for Selection and Evolution	2	Natural Selection Simulation
27-Jan			
1-Feb	Artificial and Natural Selection as the Mechanism of Evolution	3	Ring Species*
3-Feb			
8-Feb	EXAM I		Collect/Analyze Ring Species Data and Begin Lab Report I
10-Feb	Evidence of Micro- and Macroevolution from Extinct and Extant Organisms	4	
15-Feb			Introduction to Scientific Writing and Statistical Analyses
17-Feb	Organizing Evolutionary Histories through Phylogenetics/Cladistics	5	Phylogenetic Reconstruction
22-Feb			
24-Feb	The Physical (Abiotic) Template as a Basis for Biodiversity	6	Microhabitat Partitioning*
29-Feb			
2-Mar	EXAM II		Analyze Microhabitat Partitioning Data and Begin Lab Report II
7-Mar	Organismal Responses to Variation in the Physical Template	7-8	
9-Mar			
14-Mar	The Dynamics of Single Species (Population Ecology)	9-10	NO LAB
16-Mar	Spring Break - NO CLASS		
21-Mar			Cemetery Demography*
23-Mar	The Dynamics of Single Species (Population Ecology)	9-10	
28-Mar	Evolutionary Change in Single Species (Population Genetics)	11-12	Hardy-Weinberg Activity
30-Mar			
4-Apr	EXAM III		Measuring Biological Diversity*
6-Apr	The Transition from Micro- to Macroevolution (Modes of Speciation)	13	
11-Apr			TBD
13-Apr	The Dynamics of Multiple Species (Community Ecology)	14-17	Niche Overlap
18-Apr			
20-Apr			
25-Apr	Variation in How Organisms Live Their Lives (Life History Strategies)	18	Host-Parasite Dynamics
27-Apr			
2-May	EXAM IV		NO LAB
	FINAL REVIEW		
	Thursday, May 5th, 2:45 - 4:45 P.M.		

*indicates a lab with an outdoor component; students are expected to dress appropriately for field work (i.e. prepared to work in the heat, dirt, rain, etc.).