

Valdosta State University
Department of Biology, College of Arts and Sciences
ISCI 3103: Natural History for Middle School Teachers
Lecture and Lab Syllabus, Fall 2013

Instructor: Dr. Cy L. Mott

Office: Bailey Science Center 1212

Office Hours: Monday 2:00 – 4:00 P. M., Tuesday 3:30 – 4:30 P. 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 (Bailey Science Center #1024): Tu Th 2:00 – 3:15 P. M.

Lab (Bailey Science Center #1043): Tu 10:00 – 11:50 A. M.

Required Texts:

Custom designed E-Book by McGraw Hill (www.mcgrawhillcreate.com/shop)

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/exam questions will be based on readings from the text as well as in-class material.

Course Description: Natural History is the study of the relationships between living organisms and how they interact with, influence, and are influenced by their natural surroundings, primarily examined through observational rather than experimental approaches. According to the VSU Undergraduate Course Catalog, Science 3103 is a “survey primarily of the biota of south Georgia and associated biological processes. Using the biota of southern Georgia as a model, students will study basic ecological principles, population structure and dynamics, life history patterns, and reproductive strategies and behaviors common to living systems. Special topics covered in the course include the biology of rare and endangered species and the importance of biological resources to human society.”

Course Objectives: ISCI 3103 addresses the VSU General Education Outcome that specifies “students will demonstrate knowledge of scientific and mathematical principles and proficiency in laboratory practices.” It also fulfills the Biology Departmental outcomes that call for the ability to “describe the evolutionary processes responsible for biological diversity” and “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 those systems and the environment.” This class will also bridge the gulf between scientific and educational disciplinary training by allowing future teachers to learn new scientific information through a variety of instructional strategies. The course has been designed to model methods that enact the rhetoric of the science education reform movement. This nontraditional approach to college science is structured to help prospective middle school teachers make connections between methods of teaching and the process of learning science.

Attendance: Attendance in lecture and lab is expected of all students (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). Any student missing more than 20% of the scheduled class time (i.e. combined lecture and lab missed) will earn an “F” due to non-attendance; students arriving > 5 minutes late to lecture or lab will earn “one half” of a lecture absence, and students > 20 minutes late to lecture or lab will be counted as absent for that day. Excused absences for college-approved activities and in cases of personal emergencies (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 of five (5) business days’ notice to the instructor so that accommodations can be made. Exams missed without prior approval cannot be made up, and all points will be forfeited. Students missing exams with prior approval must take exams/quizzes **before** their scheduled absence. Students with 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. away from your person, 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 evenly spaced throughout the room. 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.**

There will be four exams (excluding the final) given throughout the semester. Each exam will consist of a variety of types of questions that will include, but are not limited to, matching, multiple choice, true/false, short answer, labeling, and essay. Each exam will count for 100 points, and the lowest exam score will be dropped. If you miss an exam, this will automatically count for the dropped exam score.

There will be NO make-up exams. Only students with a previously-approved, University-related excuse may take an exam early. Your best policy: **DO NOT MISS EXAMS!**

Final (200 points): The final is mandatory, cumulative, and of a format similar to the other exams. The date of the final is Wednesday, December 4 (2:45 P.M. - 4:45 P.M.). **NO EARLY EXAMS WILL BE GIVEN!** Potential scheduling conflicts must be brought to the attention of the instructor as soon as possible, but having multiple finals on the same day does not represent a scheduling conflict...it represents being a typical college student.

Homework (100 points): Students will be assigned tasks associated with content covered in both lecture and lab throughout the semester. Assignments are designed to insure that students have read the chapter material **before** such material is discussed in lecture, and they will focus predominantly on relevant vocabulary.

Your current grade can be calculated at any time by dividing the number of points you have earned (which appears in BlazeVIEW) by the total points possible for assignments, exams, etc. completed to date (Total points possible for each assignment will also appear in BlazeVIEW).

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

Grade Scale:

- A = 90-100%
- B = 80-89%
- C = 70-79%
- D = 60-69%
- F = < 60%

Withdrawing from the course: The last day to withdraw without penalty is Thursday, October 3, 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
- 2) **No active cell phones, iPods, 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 site. If usage of such items persists, students will be asked to leave. If a student refuses to leave or cannot be convinced to leave by his/her classmates, the instructor will ultimately leave the classroom, and students will still be responsible for material that would have been taught during that time. Repeat offenders may be dropped from the class by the instructor.
- 3) Assignments due in class must be submitted when called for; assignments submitted after this time will incur a 50% penalty, and after 24 hours no late assignments will be accepted.
- 4) Students that wish to bring laptop computers to class will be required to sit near the back or sides 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/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 (ask me about not salting your food during an interview)...
- 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!)

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 Schedule: Subject to change

Date	Topic	Reading
13-Aug	Course Introduction; Life, Science, and Natural History	Ch. 1 What is Biology?
15-Aug		
20-Aug	The Physical Template of Life	Ch. 2 Life on Land
22-Aug		Ch. 3 Life in Water
27-Aug	Nutrient Cycling	Ch. 4 Food Webs and Energy Flow
29-Aug		Ch. 5 Biogeochemical Cycles
3-Sep	EXAM 1	
5-Sep	Population Ecology/Dynamics	Ch. 6 Population Ecology
10-Sep		
12-Sep	Community Ecology/Species Interactions	Ch. 7 Species Interactions and Comm. Ecol.
17-Sep		Ch. 8 Species Abundance and Diversity
19-Sep	Species Richness and Succession	Ch. 9 Species Richness Patterns
24-Sep		Ch. 10 Succession
26-Sep	EXAM 2	
1-Oct	Life History Strategies	Ch. 11 Life Histories
3-Oct		
8-Oct	The Value of and Threats to Biodiversity	Ch. 12 Biodiversity: Preserving Space
10-Oct		Ch. 13 Biodiversity: Preserving Landscapes
15-Oct	Classifying Life	Ch. 14 Classification / Evolution of Organisms
17-Oct		
22-Oct	EXAM 3	
24-Oct	Natural Selection and Speciation	Ch. 15 Selection
29-Oct		Ch. 16 Speciation
31-Oct	Evidence for Evolution	Ch. 17 Evidence of Evolution
5-Nov		
7-Nov	Human Evolution	Ch. 18 Human Evolution
12-Nov	Keeping the "Science" in Science Classrooms: The Dover Trial	Relevant readings will be assigned
14-Nov		
19-Nov	EXAM 4	
21-Nov	Review Day: Practice Questions, Discussions, Etc.	No Reading
26-Nov	THANKSGIVING BREAK: NO CLASS	No Reading
28-Nov		
Finals Week	Final is Wednesday, December 4th, 2:45 - 4:45 P.M.	

TENTATIVE Schedule: Subject to change

Date	Lab
13-Aug	M & M Lab
15-Aug	
20-Aug	Climatogram Lab
22-Aug	
27-Aug	Food Web Lab
29-Aug	
3-Sep	Host-Parasite Lab
5-Sep	
10-Sep	Niche Overlap Lab
12-Sep	
17-Sep	Species Diversity Lab
19-Sep	
24-Sep	Cane Toad Video Activity
26-Sep	
1-Oct	"Cemetery" Lab
3-Oct	
8-Oct	Economic Value of Amphibians Lab
10-Oct	
15-Oct	Phylogeny Lab
17-Oct	
22-Oct	Natural Selection / Ring Species Dating Game
24-Oct	
29-Oct	Data Mining Lab
31-Oct	
5-Nov	Human Evolution Lab
7-Nov	
12-Nov	Addressing Evolution in the Classroom
14-Nov	
19-Nov	TBD
21-Nov	
26-Nov	No Lab
28-Nov	
Finals Week	