

Biology 1952H: The Evolution & Diversity of Life Spring 2011

Department of Biology, College of Arts & Sciences, Valdosta State University

Instructor: Dr. Leslie S. Jones

Phone: 229-219-1337

Office: 1096 Bailey Science Center

Email: lesliesj@valdosta.edu

Office Hours: Monday & Wednesday 11:00-12:00 or By Appointment. Please feel free to call the office or use email to schedule a convenient time. Anytime I am in my office, you are welcome to stop in to ask quick questions.

Custom Textbook: 16 Chapters from McGraw Hill's Biology: Concepts & Investigations (2009), by Marielle Hoefnagels.

One chapter is from *Biology (9th Edition)* by Raven et al. This book will provide critical scientific content and you are required to read the chapters listed in the *Course Schedule* before the lecture on the day they are listed. There will be some impromptu writing assignments in class that will be based on the reading. Information in the text could be included on the examinations whether or not it is mentioned in class.

Course Objectives: This class fulfills 4 of the 11 general education credit hours required in section D1 (Science, Mathematics, and Technology) of the VSU core curriculum as prescribed by the University System of Georgia. According to the VSU Undergraduate Course Catalog, BIOL 1952 is “an introduction to modern biology with an emphasis on the diversity of life on Earth and a close examination of ecological and evolutionary processes and relationships taught in an enriched environment.”

Course Description: The course has a 3-2-4 credit hour format. Each of the two class meetings per week will begin with a one hour inquiry-oriented lab activity followed by a lecture/discussion session. We will meet on Mondays and Wednesdays from 2:00-4:15 in room 1043 of the BSC. Lectures will consist of visual PowerPoint presentations with slides that will consist mostly of images with very little text. This requires students to be present, listen carefully, and take careful notes in order to assimilate the course content. Lectures will not be taken from the text, so there is no reason to haul the book to class. Do not assume that these sessions will be endless monologues; there will be frequent discussions. You are welcome to ask questions, and I will frequently ask questions and appreciate/expect voluntary responses.

Instructional Philosophy: My role as the instructor is to provide coherent explanations of these aspects of biological science, but you hold the responsibility for learning this material. Just attending class, memorizing material, and taking the tests is not enough. You will only learn by making an effort on the assignments and studying because I design conceptual test questions that require you to think and demonstrate that you have mastered the material. Rote learning (memorization) is the most transient form of knowledge and is a waste of time because you will forget most of it quickly. However, if you develop a true conceptual understanding of the material, you will not forget most of what you learn and it will be a much better use of your time and mine.

Academic Honesty: Class members are expected to maintain high standards of integrity. This course will use the VSU Handbook Code of Ethics as a basic standard of behavior, but everyone in the class is required to read the Biology Department Plagiarism Policy and you are expected to sign-off that you understand this document as part of your student information sheet. Dishonesty will not be tolerated and any student misconduct will be reported to the Office of the Dean of Students. Evidence of cheating will result in no credit for the assignment or depending on the case, a grade of “F” for the course. Never copy text from a book or website and represent it as your own work. By taking this course, you agree that all required course work may be subject to submission for textual similarity review to SafeAssign, a tool within BlazeVIEW. For more information on the use of SafeAssign at VSU see SafeAssign for Students (<http://www.valdosta.edu/academic/SafeAssignforStudents.shtml>).

Special Services: Students requiring classroom accommodations or modifications because of a documented disability should discuss this need with me at the beginning of the semester. Students not registered with the Special Services Program should contact the Special Services Office, Nevins Hall 1115, 245-2498.

Family Educational Rights & Privacy Act: Grades cannot be posted by Name or Social Security Number. Scores and student work will not be given over the telephone, by email or to another student.

BIOL 1952 – Course Objectives

Educational Outcomes:

“Describe the evolutionary processes responsible for biological diversity, explain the phylogenetic relationships among the major taxa, and provide illustrative examples.” (Department of Biology – Educational Outcome #2 in the VSU catalog)

Enduring Understanding:

Recognize how misrepresentation of the Theory of Evolution and the failure to understand the distinction between scientific and religious knowledge has led to the Evolution/Creationism Controversy.

Essential Questions:

What is the nature of science as both a body of knowledge and a set of systematic processes?

What characterizes the dynamic balance and predictable patterns that are seen in living systems?

How does the Theory of Evolution explain the history of life and the vast diversity of living organisms?

What are the fundamental characteristics of life and how are living organisms classified on the basis of their distinctions?

Plan for Instruction:

I. Nature of Science - background on how the scientific disciplines systematically strive to understand the natural world

II. Ecology - the interactions of organisms and their environments

III. Evolution -the explanatory framework for biological science showing genetic changes over time in populations

IV. Biodiversity - similarities among and differences between different taxonomic groups of organisms

Assessment:

Examinations:	4 Midterm Exams (10 Percent Each)	40%
	Comprehensive Final Exam	10%
Other Factors:	Outside Assignments	20%
	Book Review	10
	Class Notebook	10
	Participation & Attendance	10%

Class Sessions:

Attendance: You are expected to attend all class meetings and attendance will be taken. Each absence will reduce the attendance grade by 25% unless a make-up assignment is approved by the instructor. These will only be allowed when class is missed for a good reason. These will be 1 single-spaced page (500-600 words) with 2 properly cited references. Entering class late on more than one occasion is unacceptable. Any three tardy entrances will result in automatic reduction of the attendance grade by 25 percent. If you do miss class, you are responsible for finding out what we did and getting notes from another student, so make contact with a classmate and exchange phone numbers early in the semester. Anyone who misses more than 20 percent of the class sessions will receive a failing grade for the course. If you email me with the reasons for your absence, please do not ask if you missed something. Assume that you did! I will not give you the notes or tell you what you missed.

Department: Active participation is expected of all students. Everyone is expected to be actively involved in the conversations that are part of this course. Consistent, active, and thoughtful contributions will elevate your grade and I hope nobody will need to be penalized by failure to become involved, thoughtless/rude behavior, or anything that detracts from the learning experiences of other students. Disruptive behavior will not be tolerated, so please restrict talking and sidebar discussions. Any student disrupting class meetings will be required to leave the classroom and considered absent. Please be on time to class and if you are ever late, enter without disturbing the class. You can expect the meetings to last the full 2+ hours. I expect everyone to be considerate of the other students. OSHA regulations prohibit the consumption of food or drinks in the lab. Turn off your cell phones & pagers before class begins. I will stop class for rude behavior including text-messaging. If I have to stop for a disruption more than once, you may be asked to leave. Repeated problems will result in a reduction of your grade or permanent removal from the course.

Field Trips: During the unit on Ecology (Feb 14), we will visit one of the hidden treasures of Valdosta, the Grand Bay Wildlife Management Area. On that day, there will be no lab or lecture. I will take the Biology van or you can meet us out there. You will take no notes - the whole excursion will be "free-choice learning." We will feed the animals, tour the education center, and hike out the boardwalk. The highlight of the semester will be a weekend trip to Sapelo Island on the coast of Georgia (Mar 25-27). The Honors Program is supporting the trip which includes two nights at the UGA Marine Institute, great food, splendid scenery, etc.

Book Review: Early in the semester each person will select a different book that presents science to the public. This should be something you are interested in and would enjoy reading. Fiction, non-fiction, biography, or anything else that deals with a real scientific subject (other than sci-fi because that is fantasy). I will be glad to meet with you to recommend books that I have enjoyed. we will discuss these on the trip to Sapelo Island.

Online Activities: The publisher of the textbook has developed several new web-based study innovations that we will be trying in this course. One is an interactive study module which allows you to self-assess your understanding of the material. There is also a system of quizzes that will be open-book and done on your own time. In the first three units there will just be one quiz during the week before the midterm. In the last unit, you will be reading the book chapters and taking the quizzes before each lecture. These are very straightforward and based on the chapter information.

Class Notebook: Throughout the term, you will be expected to keep a collection of all of your work in a one-inch loose-leaf notebook. This will contribute to your grade and is an important way to demonstrate your efforts and understanding of the scientific content. Nothing is to go in this document except your own original work. Any class handouts must have considerable notations to indicate how you used them. Do not copy anything off the web except images and any images must have evidence of your own thinking (either handwritten or typed). The notebook will have 4 tabs dividing it into the units we will cover (Nature of Science, Ecology, Evolution, and Biodiversity). The sections should be sequenced in the order the lessons are covered. Your lab and lecture notes should be presented with any graded assignments and additional information you assemble on each topic. If you take reading notes or develop vocabulary lists these can be included as long as you write these in your own words.

Assignments: During the semester, there will be a number of tasks that are designed to reinforce your understanding of the course material. Some of these will be online quizzes that are to ensure you read the textbook. Papers are due at the start of class, will be graded down 10%percent if they are turned in after class, and reduced by another 10 percent for every additional day they are late. NO EXCEPTIONS! Written assignments should be typewritten, single-spaced and no more than one page in length. Grades will be out of 10 points as (10 = Excellent, 8 = Good, 6= Adequate, <5 = Deficient). If you miss the description of the assignment in class, it is your responsibility to contact a classmate (Do Not Email Me).

Examinations: Three midterms and the final examinations will be multiple choice tests. One midterm will be an essay exam. Do NOT try to memorize the information because questions will probe your understanding of the concepts and I am not interested in whether you are good at rote learning. You are responsible for all of the information presented in the lectures and anything covered in the assigned chapters of your textbook. **Your lecture notes and the text are your study guide.** We will discuss the type of questions you can expect before the first exam and will go over the correct answers to each midterm immediately after the test. Each of these tests will be scored for 100 points, but there will be 110 questions, so you can miss any 10 questions without jeopardizing your grade. If you have an emergency and can't make the exam, be sure to contact me within 24 hours by office phone or by email. Make-up exams will only be given for valid reasons with documented excuses and these will be essay tests that are much more difficult. The final examination will be comprehensive, consist of 200 multiple choice questions, and cover all accumulated course content.

BIOL 1952: Tentative Class Schedule (Subject to Change)

<u>Date</u>	<u>Class Topic</u>	<u>Custom Book Chapters</u>	<u>Assignment/Extension</u>
Jan 10	The Natural World		In-class Writing Assignment
12	Patterns in Nature		Student Information Sheet
17	No Class in Honor of the Memory of Dr. Martin Luther King, Jr.		
18	Classification	Chapter 1	Essay on Nature
24	Inductive & Deductive Reasoning	Chapter 2	Dichotomous Key
26	Data Analysis & Display	Chapter 6	Outline of Chapter 6
31	Scientific Processes & Knowledge		Fish Lab Report
Feb 2	Characteristics of Life		NOS Online Quiz
7	Midterm #1: The Nature of Science & Exam Review		
9	Global Geography	Chapter 3	Lab Notebook Submission Self-Evaluation & Book Choice
14	Grand Bay Field Trip - Meet at the WMA	Chapter 4	Photo Collage of Ecosystem
16	Abiotic Factors		Grand Bay Reflection
21	Nutrient Cycling		Abiotic Factor Display
23	Energy Flow		P,C,D Pictures
28	Populations	Chapter 5	Ecosystem Food Web
Mar 2	Midterm #2: Ecology		Online Quiz (24 Hours Before)
3	Midterm: Last day to drop a class without failing		
7	Myths & Truths about Evolution		Essay on Origins
9	The Evolution/Creationism Controversy		Burning Questions
14 & 16	SPRING BREAK – No Classes		
21	Origins: Life & Human	Chapter 7	Report on Controversy
23	Selection & Speciation	Chapter 8 & 9	Example of Artificial Selection
25-27	Trip to Sapelo Island		Sapelo Reflections
28	Earth History & The Fossil Record	Chapter 10	Earth History Poster
30	Midterm #3: Evolution - Essay Exam		Online Quiz (24 Hours Before)
Apr 4	Prokaryotes	Chapter 11	Quiz & Helpful Bacterial
6	Protists	Chapter 12	Quiz & Protist Disease Vector
11	Fungi	Chapter 13	Quiz & Fungal Symbiont
13	Plants	Chapter 14	Quiz & Endangered Plant
18	Invertebrates	Chapter 14	Quiz & Plant Evolution Timeline
20	Vertebrates	Chapter 16	Quiz & Animal Cladogram
25	The Evolution of Reproduction		Tree of Life
27	Midterm #4: Biodiversity		Final Submission of Lab
<i>Notebook</i>			
May 2	Viruses	Chapter 17	Virus Report
6	CUMULATIVE FINAL EXAM – Wednesday, May 4 th from 12:30-2:30		