

Biology 1010: The Evolution & Diversity of Life Spring 2013

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

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Office Hours: Monday & Wednesday 2:00-3:15 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.

Textbook: Biology: Concepts & Investigations, Marielle Hoefnagels. (2012) 2nd Ed Boston: McGraw Hill

Computer Support: http://connect.mcgraw-hill.com/class/l_jones_spring_2013

This book and the related computer support through the *Connect* platform are critical for the course. You are expected to read the chapters and complete the *LearnSmart* assignment before the lecture on the day they are listed in the course schedule. Any information in the text could be included on the examinations whether or not it is mentioned in class. There will also be Pretest Quizzes and your writing assignments will be submitted through *Connect*.

Course Objectives: This class fulfills 3 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. The course will address the VSU Learning Outcome that states: *"Students will demonstrate understanding of the physical universe and the nature of science, and they will use scientific methods and/or mathematical concepts and reasoning to solve problems."* According to the VSU Undergraduate Course Catalog, BIOL 1010 is "an introduction to the diversity of life on Earth with a special emphasis on ecological and evolutionary processes and relationships." This lecture and the BIOL 1020 Biodiversity Lab are co-requisites that complement each other by covering parallel material.

Course Description: The class will meet on Mondays & Wednesdays from 3:30-4:45 in 1011 Bailey Science Center. This is a large lecture hall and class sessions will be based on visual PowerPoint presentations. Slides will consist mostly of images with very little text. This requires students to be present, listen carefully, and take notes in order to assimilate the information. 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. When it is possible, there will be activities in class and I will frequently ask clicker questions.

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 reading your text, making an effort on the *LearnSmart* assignments, doing assignments and studying your notes. 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 very 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. 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. Anyone caught in class with more than 1 clicker and the person whose clicker it is will both fail the course.

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, Farber Hall III15, 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 1010B 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) "Students will demonstrate understanding of the physical universe and the nature of science, and they will use scientific methods and/or mathematical concepts and reasoning to solve problems." (VSU Core Curriculum for Section D).

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?

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

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

V. **Humans** and the impact our species has on the dynamics of the natural world

Assessment:

| | | |
|---------------|--|-----|
| Examinations | 4 Midterm Exams (10% Each on Units I-IV) | 40% |
| | Comprehensive Final Exam | 20% |
| Other Factors | Reading Comprehension Assignments on <i>LearnSmart</i> | 20% |
| | Connect Papers, Quizzes, & Other Assignments | 10% |
| | Attendance | 10% |

Class Sessions: Please be on time to class and if you are late, enter through the rear doors on the second floor without disturbing the class. The meetings will last the full 75 minutes. Do not pack up your notebook or rattle your book bag until 4:45. This is a large lecture hall and there are many other people in the course, so I expect everyone to be considerate of the other students. Do not bring food or drinks into the auditorium. Turn off your cell phones & pagers before class begins. During the class session, refrain from holding private conversations. I will stop class for rude behavior. Cell phones are not to be used. Laptops are not to be open to content that is unrelated to the course. If I have to stop the lecture 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.

Attendance: You are expected to attend all class meetings. Attendance will be taken via clicker participation. If you come to class without your clicker, you may check in with Andy at the start or end of class. She will allow you to do this twice without penalty. Everyone is allowed 1 absence without penalty, but any more than one will impact your grade. Being tardy or leaving early 3 times is an unexcused absence. If you do miss class, you are responsible for obtaining notes from another student. Make contact with a classmate and exchange phone numbers early in the semester. Anyone who misses more than 20% of the class sessions can receive a failing grade for the course. I will not give you the notes or tell you what you missed because there are too many students in the class.

Examinations: Examinations will be multiple choice tests. Do NOT try to memorize the information because the test questions will probe your understanding of the concepts. I am not interested in whether you are good at rote learning. **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 part of the first exam during the following class session. 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 for 20% of your grade. Your Test Scores will be available on Blazeview, but this is the only way Blazeview will be used in this class.

Assignments: We will use the *LearnSmart* software program from McGraw Hill that is designed to improve your reading comprehension. This is an adaptive program that adjusts to a student's individual skills, especially the ability to know what you understand. The *Connect* package also has quizzes and practice activities. Any electronic assignments and the electronic submission of your papers must be done before the start of class on the day they are due. Late submissions will not be accepted unless there is a very good reason that the GTA approves. Paper assignments will be typewritten, single-spaced and no more than one page in length. Your formal name and the date should be in the upper right corner and there should be a title. Papers will be graded for both content and writing on 5 point scales. (5 = Excellent, 4 = Good, 3 = Adequate, 2 = Poor, 1 = Seriously Deficient). If you miss the description of the assignment in class, it is your responsibility to contact a classmate. On the lower left side of the McGraw Hill page there is a black square that has the registration options. There are videos to show you how to register with the access code that came with your book or how to purchase your access online: http://connect.mcgraw-hill.com/class/l_jones_spring_2013_2

BIOL 1010: Tentative Class Schedule (Subject to Change)

| Date | Class Topic | <i>LearnSmart</i> Chapters | Assignment/Extension | |
|-------|--|--|--|----------------------------|
| Jan | 7 | The Natural World | In-class Writing Assignment Student Information Sheet | |
| | 9 | Course Information & Patterns in Nature | | |
| | 14 | History of Science | Paper on Science & Big Ideas | |
| | 16 | Scientific Reasoning | | |
| | | Chapter 1 | | |
| | 21 | No Class in Honor of the Memory of Dr. Martin Luther King, Jr. | Essay on Science Experiment | |
| 23 | Characteristics of Life | | | |
| 28 | Biodiversity - Taxonomy | Human Evolution Chart Connect Quiz | | |
| 30 | Midterm #1: The Nature of Science | | | |
| Feb | 4 | Biosphere & Biomes | Chapter 38 | |
| | 6 | Ecosystems & Communities | | |
| | | Chapter 37 | Paper on Symbiosis | |
| | 11 | Populations | | |
| | 13 | Animal Behavior | | |
| | | Chapter 35 | | |
| | 18 | Preserving Biodiversity | Chapter 39 | Paper on Georgia Ecosystem |
| | 20 | The Natural History of Georgia | | |
| 25 | Midterm #2: Ecology | Connect Quiz Essay on Your Thinking | | |
| 27 | Myths & Truths about Evolution | | | |
| Mar | 4 | The Social Controversy | Paper on Controversy | |
| | 6 | Origins | | |
| | Chapter 14 | | | |
| | 11 & 13 | SPRING BREAK – No Classes | | |
| | 18 | Evidence | Chapter 12 | |
| | 20 | Forces | | |
| | | Chapter 11 | Paper on Evolution | |
| | 25 | Speciation | | |
| | 27 | Human Evolution | | |
| | | Chapter 13 | | |
| Apr | 1 | Midterm #3: Biological Evolution | Connect Quiz | |
| | 3 | Prokaryotes | | |
| | | Chapter 16 | Paper on Biodiversity Connect Quiz | |
| | 8 | Protists | | |
| | 10 | Fungi | | |
| | | Chapter 17 | | |
| | 15 | Plants | | |
| | 17 | Animals | | |
| | Chapter 18 | | | |
| | Chapter 20 | | | |
| | 22 | Biodiversity - Systematics | Paper on Biodiversity Connect Quiz | |
| 24 | Midterm #4: Biodiversity | | | |
| 29 | Exam Review - Summary of the Connections between the Units | | Connect Quiz | |
| May 3 | CUMULATIVE FINAL EXAM – Friday, May 3rd from 5:00-7:00 | | | |

eLearning on McGraw Hill's Connect

Your success in this course depends on your completion of the online assignments. These comprise 30% of your grade but are much more important because they help you learn the information and prepare for the tests. Effort on these assignments is clearly correlated to the grades students receive. However, do not just do this work without thinking. You will waste the time you spend doing these activities, if you do not concentrate on learning as you do it.

You are expected to read the assigned chapters in your text before the topic is part of a lecture in class. The *LearnSmart* assignments are based directly on the chapters and these must be completed before 3:00 on the day of the lecture. That is 30 minutes before class so that we can check the class report and adjust the lecture to incorporate explanations of the most difficult material or notify you if it is a concept that you are not responsible for. We will not cover everything in the book, and there are some sections that you will be told you do not need to learn.

The *LearnSmart* (LS) prompts are lower order questions that drill on vocabulary and basic concepts. Think about the questions when you read the prompts. Think about what the answer is. Indicate how confident you really are. If you get the question wrong, ask yourself why you did not know it. That type of thinking is the best thing you can do to improve your learning. If you look back and it is right in the book, consider the fact that you might need to read more carefully.

You will find the lectures much easier to understand after finishing these exercises. As you do *LS*, jot down words on questions you miss so that you can be sure to look for those explanations in lecture. If something is still unclear, be sure to ask. Do not expect questions like these on the test because those will be conceptual and require higher order thinking.

Decide on an alias for *LearnSmart* so that you can see how well you do compared to your classmates. You must send Andy your alias by email because we are keeping track and will not only announce the winner, but the top 5 members of the class will get extra credit on their test grade for working hard. (Last year one student went from a B to an A on her final grade because she was always in the top five.) You can start as early as you want for all of the chapters in each unit to be sure you get the chapters finished before the deadline.

LearnSmart is an adaptive program. The number of points you get and the number of times you see a topic depends on getting the correct answer and how certain you are that you know the answer. Be sure to use the Confidence prompts carefully. You get the most points if you say you are "sure" and get the answer correct. You will also finish faster if you do that. However, if you say you are "sure" and get it wrong, you lose big points. If you get it wrong with one of the other prompts, the penalty is not as bad. You will get other questions on that topic or the same question until you master it.

There will be 9 short writing assignments that help you think about the course content and allow you to express your opinions. These are all listed as *Connect* assignments and have a paper/gem clip logo. Your papers must be submitted online by the deadline. Your grades for these papers will be posted online. You get 5 points for the scientific content and 5 points for the quality of the writing, so be sure to read the suggestions on the next page. The last 2 papers will be longer and the scores will be doubled. DO NOT submit your papers by email to either of us. They only count if they are turned in on time and online!

So that you can prepare for the tests and exam, there will be a *Connect Quiz* that is due at midnight the night before these. Quizzes will be interactive and higher order questions, so these should give you an idea if you are prepared. You can do these quizzes 3 times and your best score will count. You have to start over and do the whole thing, though. There should be feedback to help you find the content in your book if you miss these questions.

As we finish each unit, you should go to the reports page to see which topics were a problem for you. The reports even shows which *LS* questions you missed the first time. You can go back and drill on *LearnSmart* as often as you want, but you only get credit for completing *LS* before the lecture deadline.

There are 150 students in this class, so it is your responsibility to log on and learn to use these programs. If you miss a deadline, we are sorry, but it is not fair to other students to make exceptions.

If you have problems, YOU must call McGraw Hill's Customer Support! Get the Case Number and if they do not help you, then email Dr. Jones and be sure to send me the number so I can try to do something about it.

The McGraw Hill Customer Support number is 800-331-5094.

Expectations on BIOL 1010 Writing Assignments

Objective

Written assignments will reinforce class lessons and will help you to learn, outside the classroom, through your own thinking. Papers are an opportunity to display your knowledge through more than just exams or what you might or might not say in class. These assignments also allow you to show your own style of expression and personal interests, so you should take pride in them. Consider every assignment in this course a sign of your professionalism.

Focus

Well-crafted writing always has a specific purpose. Every paragraph or paper should have a distinct thesis or central idea. Your thesis should directly address the nature of the writing assignment. Decide on the topic and a specific case you want to make before you start writing. Write the thesis or topic sentence down and check back throughout the writing process to be certain that the work supports it.

Paper Organization

Before you begin to write, think through how you plan to develop your thesis and use an outline to structure the paper. An Introduction will be the first and the Conclusion will be the last paragraphs of your paper. Start paper with something catchy to interest the reader. Make it perfectly clear, in this introductory section, what your point or central idea will be. Support that concept throughout the body of your paper. Paragraphs in the middle will be the Body of your text. Subheadings should be used for clarity. Your assignments in this class should usually be in first person. Avoid using statements such as "In this paper I will discuss..." since it is much more sophisticated to avoid this type of "crutch statement."

Paragraphs

Divide the paper by major themes and make each of these a distinct paragraph. You should have at least 3 paragraphs on a 1-page paper. The first sentence of each paragraph is a topic sentence that shows what the paragraph covers. ONE SENTENCE IS NEVER AN ENTIRE PARAGRAPH because there should be at least 3 sentences elaborating any significant idea.

Format

Your papers are to be typed using something comparable to 12-point Times New Roman type, single-spacing, and reasonable (1 inch) margins. Other professors often expect double-spacing, but to save paper, I **require single-spacing**. The lengths of these papers are stated in the assignments. After you draft your ideas, if the paper is too long, go back through and shorten it up by taking out the less important aspects. If it is too short, go back and incorporate more support or add more detail to what you are saying. When I say 1 page that means one sheet of paper that is full of text. Put your references and heading on that single sheet if they are required. Use the word counting function to be sure your text is 600-800 words per assigned page when single-spaced.

Requirements

Each paper should have a creative title identifying the approach to the assignment. A header on the upper right should include the student's name and the date of submission. Submit your papers through *Connect* by the deadline at the 8:00 am start of class because late papers will not be accepted except under special circumstances.

References

Any very general scientific information does not need to be cited. We consider this common knowledge because the place you found it is not the original source of the information. How would you know? The answer is if you can find the same information in 2 or 3 books, it does not require a citation in the text or a reference at the end of the paper. However, you must be very careful about giving appropriate credit to the sources of any original outside information that you use. If you use original information, it should be cited in the text of the paper. You also should have properly formatted references at the end of the paper that include: Author (Last name, Initials), Year (In parentheses), Title, Place & Name of Publisher, Pages. Use the APA or American Psychological Association style and check the web if you want an example of this. For WWWeb sources, use as much information about the author or site along with the WWWeb address.

Be sure to reword or paraphrase text from any of your sources to avoid plagiarism. Paraphrasing means changing more than 1 word in a sentence. Think about what something says and completely restate it in your own words. No direct quotes are allowed in papers for this course to prevent you from making your paper look like a mosaic of other people's ideas. The point of writing is to demonstrate your thinking, so first person is usually fine.

Grading

Your assignments will be described in detail in lecture, so listen carefully and be sure that you know what is expected or ask about anything that is unclear. Focus on the objective of the assignment and address it clearly in thesis of your paper. You can dramatically improve your work if you critique your own rough draft and revise it at least once. Outside feedback can also make a difference. Proofread to avoid careless errors. Spelling, Punctuation, and Grammar do effect our impression of the quality of your presentation. These papers will be graded on Effort, Quality, Organization, Content, Proper citations and whether or not you followed these directions. I will look specifically at extent of your coverage of the topic and the clarity in your presentation of the material. Be sure to support general statements and do not use hypothetical examples. Papers are due as electronic submissions, at the start of class, and late work will not be accepted.

“Top Ten” Strategies for Success in Biology 1010

(You can even count up by reading from the bottom if you are a David Letterman fan)

If you want to do well in or even just pass this course, you need to think about your own approach to studying. You will not pass unless you work hard so (before you waste your time and someone’s tuition money) consider the following:

#1. Pre-Read Chapters before the Lectures – The *LearnSmart* chapter assignments are designated on the day the lecture will cover the specific topic. Read the book so that you will come in knowing how to spell words and have some familiarity with key ideas. You are required to complete 15 *LearnSmart* exercises during the semester.

#2. Attend Class and Take Detailed Notes – The information in class sessions will not be identical to your book. The scientific topics will be explained differently and additional information will be covered. Think as we go along, and if you do not understand - ask questions. Clicker prompts are designed to get you thinking, so you can evaluate your own understanding of the subject. **Keep an Orderly Notebook** – If you use a spiral for class notes, have another folder where you can assemble all of your papers and outside information in preparation for studying for the tests.

#3. Summarize Your Notes Every Day after Class - Write a short Summary or synopsis of the information covered to be sure that you understand it all. If not, read up on the subject in your text or on the Web or come in for help on anything you do not understand. By going over your notes to be sure they make sense and writing a paragraph in your own words, you will be way ahead when it is time for a test.

#4. Get to Know Someone in the Class – Make contact with a student that sits near you. This is so that you can quickly look over at their notes if you miss something during lecture. Get notes from them if you have to miss class, and check on the specifics of assignments by phone or email. You can also study together for the exams.

#5. Structure Regular Study Sessions – Set up a pattern of regular times that you attend to the course material and be sure to keep up with the assignments (which are not accepted if they are late). **Re-Read Chapters after Class Sessions** to be sure you have mastered the material. If you know you need to work hard for good grades, take detailed study notes on every chapter to reinforce the concepts.

#6. Make a Vocabulary List of Important Terminology – Construct a list of the terms you do not know and define them in your own words. As you go through *LearnSmart*, take note of concepts that are challenging. Drill yourself until you are sure you know these words. If any are particularly troublesome, try writing a sentence that uses the term. **You must understand the “language of biology”** and there is plenty of it!

#7. Use the Assignments to Be Certain You Know the Content – *LearnSmart* is a drill on lower order questions that serve as an introduction to the vocabulary. The papers prompt you to think outside of the box and will reinforce the content. The *Connect* quizzes for each unit are interactive biology exercises that serve as a good way for you to determine whether or not you really know the information. Pay special attention to the summaries at the end of the chapter and practice those questions if you need more.

#8. Come In for Additional Help – My Office Hours are a time that I will be in my office to meet with students. I will be happy to make appointments at other times. If you do not ask, I can’t help you! There are designated Biology tutors in the Student Success Center who can also help.

#9. Plan Ahead for Tests – Spend at least a week studying gradually. Stop and rest your brain right before the test. Give the information time to sink in. **Do Not Pull “All-Nighters”** – These tests require you to think, so you will not do well if you are too tired to reason and figure out the answers.

#10. Decide that You Plan to Succeed and Work Consistently for a Good Grade – It is your choice! **Start Working Hard at the Beginning of the Semester** – Do not fool around and suddenly decide to work after you get behind and need to dig yourself out of a big hole.