

LECTURE: TTh @ 11:00-12:15 AM in Bartlett 166

TEXT: *Biology*, Raven et al, 9th Edition, 2011

I. Ecology: Aug 30 – Sept 15

Community Ecology
Dynamics of Ecosystems

Reading Assignment

Chapter 57
Chapter 58

★★ Exam covering Ecology on Thursday, Sept 15 ★★

II. Evolution – Sept 20 - Oct 6

(Read the Discussion of Darwin and Evolution in Chapter 1)

Genes within Populations

Chapter 20

Evidence for Evolution

Chapter 21

The Origin of Species

Chapter 22

(We will also discuss a few topics from Chapters 23 & 26)

★★ Exam covering Evolution on Thursday, Oct 6 ★★

III. Cellular Reproduction Oct 13 - Oct 27

How Cells Divide (mitosis)

Chapter 10

Sexual reproduction and meiosis

Chapter 11

IV. Heredity: Nov 1 – Nov 15

Patterns of Inheritance

Chapter 12

Chromosomal inheritance

Chapter 13

★★ Exam covering Cellular reproduction and Heredity on Thursday Nov 17 ★★

V. Human Reproductive Systems Nov 22 - Dec 1

The Reproductive Systems

Chapter 53

★★ Final Exam: Friday, Dec 16 at 12:00 to 2:30 PM ★★

**Copies of PowerPoint slides and other class
resources can be downloaded at:**

<http://www.marietta.edu/~biol/101/mcshaffrey/index101.html>

**Note: Most material will be available on the
website above, but some material may be made
available on the course's Moodle site**

Grading Policy

Grading will be based upon the following components:

(Point values are approximate)

Lecture exams	3 x \approx 100	\approx 300pts
Final exam		\approx 200
Quizzes	10 x 10	\approx 100
Misc homework assignments		\approx 50

Total		\approx 650

Grading Scale

97 - 100%	= A+
93 - 96%	= A
90 - 92%	= A-
87 - 89%	= B+
83 - 86%	= B
80 - 82%	= B-
77 - 79%	= C+
73 - 76%	= C
70 - 72%	= C-
67 - 69%	= D+
63 - 66%	= D

Exams will cover materials from lectures and reading assignments. The FINAL EXAM will be comprehensive over the entire semester.

Quizzes will be administered at the end of class periods. Particular emphasis will be placed upon recent lecture materials and reading assignments.

Homework assignments Occasional homework assignments will be assigned during the semester. Written assignments must be typed.

Attendance

Attendance will be taken in lectures. I expect to be notified at least ONE WEEK in advance if you need to miss a lecture due to a field trip, athletic event, etc. I must be notified at least one week in advance if you must miss a class the day of an exam or quiz due to an athletic event, field trip, etc, at which time we will arrange an alternative exam time. Normally, quizzes cannot be made up, but instead will be covered by "bonus quizzes"; the top 10 quiz scores are used to determine your grade so missing a quiz will not normally affect your final grade. You may not be allowed to makeup an exam if I receive "last minute" notification. There will be no makeups for unexcused absences. Extraordinary circumstances will be dealt with on an individual basis.

Email Communication

You are expected to check your college MC email account daily to look for class messages.

Late assignments

Late assignments will be penalized 10% per day.

Disabilities

Any student needing accommodations due to a documented disability should notify the instructor AND the Academic Resource Center (Andrews Hall, Third Floor, 376-4700) at the beginning of the semester for further instructions.

Electronics

You are welcome to use a laptop, PDA, etc. to take notes during class; however please do not check email, play games, surf the web, etc. as this is VERY DISTRACTING to your fellow students who may actually be concentrating on the lecture or at least trying to get a nap in. Please, turn off cell phones for the duration of class; even “silent” buzzers are distracting, as is the bent over posture and moving arms of someone texting under the desktop. Seriously. To the rest of us, it looks like you are touching yourself in a strange and not particularly pleasant way, especially if you are mad at the person you are texting. So, please don't do it.

Academic Dishonesty

Academic dishonesty within the academic community is a very serious matter, because dishonesty destroys the basic trust necessary for a healthy education environment. Academic dishonesty is any treatment or representation of work as if one were fully responsible for it, when it is in fact the work of another person. Academic dishonesty includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services. A substantiated case of academic dishonesty may result in disciplinary action, including a '0' on the assignment, a failing grade in the course, or expulsion from the College.

*If you cheat in any way, I reserve the right to award a grade of **F** for the class regardless of the point value of the item where the cheating occurred.*

Student Expectations

- 1) Come to class with a copy of the PowerPoint slides (can be found at <http://www.marietta.edu/~biol/101/mcshaffrey/index101.html>).
- 2) Ask lots of questions and participate in class. If you have a question, most likely many other students in the class are wondering about the very same thing.
- 3) Study smart:
 - Read the textbook and do the practice questions at the end of the chapter.
 - **Outline, rewrite or otherwise reorganize your lecture notes.**
 - **Study with a classmate; quiz yourself and each other.**
 - Invest sufficiently in your study time.
- 4) Seek help when you need it.

Where Do You Go for Help?

You are asked to make many adjustments in your transition to life at college, and the adjustment to the educational and social environment of college can be very stressful. You may at some time during this sequence, or in other courses, feel overwhelmed or distraught. It is of great importance that you learn to recognize and use the support system that is available at Marietta College. Foremost is remembering that you are not alone in your anxiety; many of your classmates also are feeling the same way. The secret is not to merely commiserate about the situation, but rather to seek out those resources that can help you. I believe that you will find all of the following resources helpful.

- 1. Your professor.** I am always willing to devote time to helping students having difficulties with the course material. Come in and see me in my office, Selby 242, Ext 4743. In general I maintain an "open door" policy toward consultations; while I do not have set office hours I do have substantial free periods during the week when I can be found in my office. Feel free to see me after class or just drop by my office; I can almost always spare some time, but if not, we will find a time when we can meet. If you find it more convenient, you can check my schedule online (<http://www.marietta.edu/~mcshaffd/sched.pdf>) for times when I am free; a paper copy of this schedule is posted on the bulletin board outside my office so you can sign up for a time.
- 2. Help sessions.** If requested, I will offer help sessions during the semester. These are excellent opportunities to obtain a new explanation, or just to review material covered previously during the semester.
- 3. Your advisor.** Advisors are provided to assist you, and are excellent resources for solving all sorts of problems.
- 4. The student counseling center** is in Thomas room 112 (ext. 4477). The college counselor has great experience in helping students that are feeling overwhelmed with their course load or other activities. The Counselors have hours posted for Monday through Friday. You can also get help after hours by contacting a Resident Assistant or Resident Director; all RAs and RDs have various phone numbers that you can call, such as a 24-hour community crisis line (373-8240), etc.
- 5. The Writing Center.** This facility is located in 217 Thomas Hall (ext. 4658) and specializes in helping students with writing difficulties. Any writer seeking help with the conception, research, drafting, or revising stages is welcome. On some occasions a professor may request that you seek help here.
<http://www.marietta.edu/~mcwrite>
- 6. A student tutor.** Many departments, including Biology and Chemistry, can arrange for an upperclass major to help students having difficulty with a particular course.
- 7. The Academic Resource Center** is located in Andrews Hall, room 306 (ext. 4700). ARC offers services to help students achieve their academic potential. These services include study skills assistance and tutoring services as well as individualized support. <http://www.marietta.edu/~arc>

Skills Objectives

We believe that "understanding" science is essential to a person's ability to succeed in today's society. By "understanding" we mean more than just possessing knowledge about the physical and natural world. "Understanding" also implies comprehending how science is practiced, and how scientists employ certain intellectual skills in their pursuit of knowledge. Below are listed some of the skills that we feel you will need to understand science, and that we will be endeavoring to teach to you during this sequence.

1. To learn how scientists think about things. The practice of science requires curiosity, intellectual honesty, skepticism, tolerance of ambiguity, and openness to new ideas.
2. To understand the limits of scientific knowledge. Scientific knowledge is limited by the sensitivity of analytical instruments we use to study nature --such as the maximum magnification of a microscope. It is also limited by attitudes, beliefs and social constraints of scientists themselves. It is these beliefs that determine what scientists choose to study, and how they interpret their observations.
3. To understand scientific methodology as a tool by which observations can be reliably interpreted to yield an understanding of nature, and as a tool by which problems in various spheres of human activity can be solved. While this objective is addressed most directly in Biol 105L, as part of this course we will see how the experimental process contributes to development of scientific knowledge.
4. To critically examine lecture notes, reading assignments, and laboratory materials, and from these to learn fundamental scientific concepts. These concepts should be structured into a mental framework into which supporting information and examples can be incorporated. Thus, that energy and nutrients in an ecosystem move through a food chain of predator-prey relationships is a primary concept, whereas the interactions occurring between specific organisms in a pond represent examples that illustrate predator-prey relationships.
5. To recognize how the fundamental biological concepts allow us to understand the effects of human activities upon nature. Thus, the concept of a food-chain is necessary to explain the effect of DDT in the environment.
6. To learn the importance of the precise vocabulary and terminology of science. Because scientists need to communicate information precisely and unambiguously, they often use "technical" terms, or attach specialized meanings to everyday words. The goal of this sequence is not that you memorize the jargon used in technical scientific writing, but that you can understand scientific information communicated in textbooks, popular scientific magazines, and the media.

Conceptual Objectives

There are also certain abstractions that transcend all of science and mold a modern understanding of the universe and humanity's place within it. Awareness of these concepts will allow you to recognize affinities that extend across disciplinary boundaries and will facilitate learning of new ideas. Some of these unifying concepts are given below:

1. Scale and Proportion. Understanding the scale of the universe --from the size of the cosmos to that of an atom, from a geologic time frame to the daily events of human lives, from the speed of light to that of a snail --expands the human mind and places human existence in new perspective.

2. Change and Evolution. Evolution of new organisms, development from child to adult, chemical interconversions, and geologic plate tectonics, reveal the transient

nature of the natural world. Knowing that the natural world undergoes systematic change over time is essential to scientific understanding.

3. Dynamic Equilibrium. Many natural phenomena are in a state of "dynamic equilibrium." This means that although the individual components of complex systems such as ecosystems and cells are in constant activity and change, the overall system remains constant. Recognition of this property illuminates the essential interdependence between individual components of nature.

4. Scientific "Modeling". Science does not reveal absolute knowledge of nature. Thus, all scientific knowledge should be viewed as "models" of particular facets of nature. These models allow scientists to make predictions of the real world, but can be modified in future to accommodate new observations.

Note: This section is part of a learning community with your Writing 101 course taught by Dr. Nowacki, and the lab course. We will make a special effort to coordinate the classes. Although I am your official advisor, Dr. Nowacki would be more than willing to talk to you about issues you are facing as you adapt to Marietta College, even if they don't directly concern Writing 101.

Congratulations on enrolling in a learning community!

In case you are not clear about what that means, here is quick definition. *Learning communities are classes that are linked during an academic term, often around a theme, enroll a common group of students, and where there is a conscious effort by the participants at linking the content and processes of the classes.*

BENEFITS of a Learning Community:

Students will experience:

- A greater sense of community among students and between students and their instructors
- Higher student academic achievement
- Supportive study groups
- More coordination of coursework
- The ability to see how content learned in a skills course such as COMM 101 or WRIT 101 can transfer over into other courses
- Increased student involvement and motivation
- Opportunity to make friends!

LEARNING OBJECTIVES for a Learning Community:

Students will learn how to:

- Share responsibility for discovery and learning within the classroom environment.
- Interact with each other and instructors in meaningful, functional and necessary ways within the course to accomplish learning in community rather than in isolation.
- Make connections to other related learning and life experiences beyond the course in order to decrease one's sense of curricular and personal isolation.

Specific Learning Objectives:

As part of an FYE Class/ Learning Community, this class will help its students:

1. Begin the process of becoming a critical thinker by learning to evaluate sources, analyze data, and come to conclusions based on that data.
2. Become a member of the scholarly community, implying:
 - a. An ability to locate and evaluate information
 - b. An ability to analyze that information in terms of the problem at hand using critical thinking skills
 - c. An ability to communicate one's own original conclusions clearly in writing and in speech
 - d. The integrity to conduct one's scholarly affairs with utmost respect for the opinions of others and for the proper attribution of scholarly thought

As a part of the General Education requirement in Natural Science, this class will help its students:

1. Learn about the scientific method and how it is applied to learn about the natural world.
2. Learn how scientific theories are developed.
3. Examine how the science of biology is critical to society
4. Be able to "think like a scientist" when examining problems.

As a foundation course in biology, this course will help its students:

1. Continue a natural fascination with the natural world.
2. Learn how the scholarly world of biology works, with the microcosm of that world as represented by the Department of Biology and Environmental Science at Marietta College as an example.
3. Become members of the community of scholars in the department; meeting its faculty and fellow students.
4. Learn basic principles of biology that will serve as the foundations for more advanced courses (enumerated in detail below).

Success in achieving these goals will be measured by surveys of student attitudes at the end of the course, by success (or lack thereof) on tests and assignments, and, most importantly, by success throughout life.

Also, there is a separate document with even MORE detailed learning objectives. We take this stuff seriously; the idea is to help you learn and the first step in that is for us to decide what it is you need to learn.

Extra credit/ Campus discovery

Since this is also part of an FYE class there are some additional requirements in terms of extra credit and other events.

1. You must attend 2 mandatory events – a presentation by the author of the Legend of Colton H Bryant on Nov. 9th at _____ PM and a presentation by a representative of the natural gas industry scheduled for _____ at _____ PM. These events are important to help with our goal of learning about critical thinking.
2. You must attend **two other** non-sporting events on campus. These must be approved IN ADVANCE. If you see an upcoming event you would like to have me consider for extra credit, bring it up in class or send me an email so I can make a decision and publicize it to the rest of the class. These two events are listed as Campus Event #1 and #2 on turnitin.
3. You will not receive points for the above 4 events, but failure to attend or write up **any** of the events will result in 40 points being deducted from your Bio 105 grade.
4. For extra credit, you can attend a presentation of a biological nature, such as the presentations of the Marietta Natural History Society (second Thursday of the month), and submit your essay to TurnItIn.com (see below) **within one week of the presentation**, for a possible 5 points.
5. There is a maximum of 20 extra credit points for the Bio 101 course and 15 points for the 105 course. ***Extra credit essays will only count for one course for credit! You must let me know how to divide the points up. You may not use any event for extra credit in more than 1 biology course.***
6. After each of the events above you will have 1 week to submit (via turnitin.com) a 2 paragraph essay on the event. The first paragraph must be a synopsis of what occurred at the event, the second paragraph should describe your reaction to it. *If it is not submitted within a week, it won't count.*

Turnitin.com Information:

Class ID:
4185595

Password:
Mendel

(This Turnitin.com class used for both 101 and 105).