

Biology 211 - Principles of Biology I
Section 3 – TR 12:40 – 2:00
Fall 2008

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113 Bessey (Office Hours TR 3-5, upon appointment)

COURSE DESCRIPTION: This course is an introduction to the study of life on Earth. We will discuss the diversity of life, the basis of heredity and evolution, and the principles of ecology. Concurrent enrollment in 211L is strongly recommended.

LEARNING OBJECTIVES: Upon completion of Biology 211, a student should be able to:

- 1) Understand and properly use the basic vocabulary of biological diversity, genetics, evolution, and ecology
- 2) Recognize, compare, and contrast many of the major groups of organisms on Planet Earth
- 3) Describe the basic principles of inheritance
- 4) Describe the theory of evolution, the evidence supporting evolution, and the mechanisms of evolution
- 5) Describe ecological principles that apply at population through ecosystem levels
- 6) Use relevant terms and concepts to formulate questions about biology
- 7) Have an increased understanding of some of the local biological diversity and ecological issues
- 8) Work together in a group to effectively discuss issues in biology making use of appropriate terms and concepts
- 9) Understand that a great deal of success in life is a direct result of simply showing up
- 10) Understand that meeting deadlines is an important aspect of success, both in college and in “real life”

REQUIRED TEXTS:

Campbell et al., 2008. *Biology*. 8th Edition. Benjamin/Cummings Publishing, Redwood City, CA. (This is the text for Biol 212 as well.)

Miller, 2008. *Only a Theory*. Viking, New York, NY

EXPECTATIONS OF STUDENTS

1. Attend and participate in class and take responsibility for your learning. I do not REQUIRE attendance in class, but I do ASSUME attendance in class. No “make-ups” will be provided for in-class quizzes, discussions, or activities missed due to absence from class.

2. Treat the instructor and other students with respect (e.g., turn off cell phones, don't talk with classmates during lecture portions of class, don't read the newspaper during class, etc.).
3. Notify the instructor, at the latest by the beginning of class, if you will need to leave class early on a particular day. This class ends "officially" at 1:55 PM each day - if you need to leave prior to that, please tell me in advance.
4. Look over assigned chapter(s) before coming to class; concentrate on figures and diagrams.
5. Complete homework assignments and submit by due date.
6. Be sure that you understand how to access WebCT. Scores will be posted on WebCT. Some assignments will require the use of WebCT.
7. Realize that the students in this class have a wide range of interests/career goals in biological sciences, and may be unaware of some career possibilities in biology - this is part of the reason that we'll be addressing a wide range of topics.
8. Learn how to ask questions about biology.
9. Do your own work on exams and assignments unless instructed otherwise.

WHAT YOU CAN EXPECT FROM THE INSTRUCTOR:

1. Enthusiasm for the "wonders of biology" and sincere caring about your progress in learning biology.
2. Willingness to answer/discuss your questions both inside and outside of class.
3. Greater willingness/ability to help you resolve problems if you notify me in advance.
4. Prompt storage of PowerPoint lectures on WebCT for student use.
5. Prompt and (hopefully!) accurate posting of your scores on tests, quizzes, assignments, etc. on WebCT.
6. Insofar as possible, fair and reasonable assignment of final grades.

WEBCT: Will be used to store lecture presentations, communicate, report grades, and sometimes to submit assignments. "Virtual" office hours will also be available through WebCT using the WebCT "chat" function.

Follow these directions to access WebCT:

- Go to the Iowa State Homepage (<http://www.iastate.edu/>), and click on the WebCT link.
- Enter the first portion of your ISU e-mail address (everything before @) as your WebCT ID and your ISU e-mail password.
- Click on: **Biol 211_Section 3 (Fall 08).**

It is strongly recommended that you use the "Check Browser" function on your "My WebCT" page when you first login to WebCT.

MASTERING BIOLOGY

“Mastering Biology” is an on-line resource that provides various types of study aids. These include learning activities, animations, videos, and practice quizzes and exams. I encourage you to take advantage of this opportunity, but I want to be sure you understand that some of the questions on quizzes and exams may address topics we won’t be covering in this class. To access Mastering Biology you’ll need the Access Code that came with your book and the ID for our course:

MBCOLBERT89370

GRADING:	8 Unit Exams (20 points each)	160 points (57%)
	In-Class Quizzes (unannounced)	40 points (14%)
	In-Class Activities (unannounced)	30 points (11%)
	Assignments	30 points (11%)
	<u>Only a Theory Report</u>	<u>20 points (7%)</u>
	TOTAL POINTS	280 (100%)
	Extra Credit Opportunities	12 points (4%)

Exams: Exams will be multiple-choice, one point per question. The exams will be **cumulative**. This means that each unit exam will focus primarily on the topics in that unit, but may also include information from ANY of the preceding classes. Some questions will require visual recognition of images. Exams will be administered through WebCT at the Center for On-Line Learning (Room 60, Carver Hall). Testing facility policy and procedures are available on WebCT. Further details will be provided prior to the first exam.

In-Class Quizzes: Will typically be worth 4 points. Quizzes will not be announced in advance and there will be no make-ups for missed quizzes. Part of the intention of the quizzes is to encourage, and reward, your attendance in class.

In-Class Activities: In-class activities will not be announced in advance and there will be no make-ups for missed in-class activities. Part of the intention of the in-class activities is to encourage, and reward, your attendance in class.

Assignments: Various assignments will be given throughout the semester and will involve either a hard-copy hand-in or posting something on WebCT. Details on individual assignments will be provided. Assignments submitted after the due date will not be accepted for full credit.

Book Report: You should begin reading the book *Only a Theory* by K.R. Miller as soon as possible. You will be required to submit a typewritten book report by **Tuesday 18 November at 5:00 PM**. The report is worth **20 points** and must address the following:

- a. Describe your understanding and opinion of the idea of “intelligent design” after completing this book
- b. Identify three specific topics (e.g., a term, phrase, concept, etc.) in the book that have, in your view, a direct connection to topics we’ve discussed in class.
Provide a page number on which that topic is discussed in the book and write a paragraph about each topic describing the connection with Biology 211.
- c. What aspect(s) of this book surprised you? Why?

Your report will be assessed based on the following criteria:

- Did you provide a clear description of your understanding and opinion of “intelligent design”?
- Did you cite, by page number, three separate sections of the book?
- Did you effectively relate the content of the book to what you’ve been learning in Biology 211?
- Was your paper well thought-out and logically presented?
- Was your paper written well with minimal spelling and/or grammatical errors?
- Was your paper submitted by the deadline? (**2 points will be deducted for each day late**)

EXTRA CREDIT OPPORTUNITIES: These opportunities are offered, in part, as a means for making up some portion of the points that you may miss due to unavoidable absences from class.

Extra Credit Questions

Questions relevant to the aspects of biology addressed in this class that are posted in the "Extra Credit Questions" Discussion Topic on WebCT will make the poster eligible to receive extra credit. I will respond to, and answer insofar as possible, all questions posted. Each post will be regarded as one question (even if the question has several "parts"). Assuming that the posted question is relevant to the content of this class, each post will result in 1 point being added to the student's score. **No more than 1 extra credit question may be posted for credit on any single day.** You may ask as many questions as you wish, but **a maximum of 6 extra credit points** will be added to your score in this class. Some of the posted questions will be selected for use in class. Points for extra credit questions will not be recorded until the end of the semester.

Prairie Service-Learning

On two or three weekend days in October or November (specific dates to be determined) students in this class will have the opportunity to volunteer three hours of their time to remove woody invasive plants and collect seeds from prairie plants as part of a prairie reconstruction effort on the ISU campus. Participating students will be

required to sign in at the prairie location and will be required to write a short (1-2 paragraph) reflection on their experience. Students who meet these criteria will have **6 points** added to their score in the class. Please note that if these activities are cancelled due to weather, it may not be possible to reschedule them.

Please note that "extra credit" is defined in the following way for this class:

Each of you has 292 chances to earn the 280 points required for a perfect score (100%) in this class. At the end of the semester all of the points you've accumulated (including "extra credit" points) will be added together to determine the percentage of the 280 possible points that you've earned. Your course grade will be based on this percent.

GRADING SCALE: Below is the "standard" grading curve. Depending on the distribution of all student scores at the end of the course, this curve MAY be adjusted downward (e.g., the bottom of the "A" range could be less than 90%), but it will NOT be adjusted upward (i.e., a total score of 90%, or better, will NOT be assigned a "B" range grade).

A (A-, B, and A)	90-100%	(252 points and above)
B (B-, B, and B+)	80-89%	(224-251 points)
C (C-, C, and C+)	70-79%	(196-223 points)
D (D-, D, and D+)	60-69%	(168-195 points)
F	59% or less	(167 points and below)

HONORS OPTION: If you are a member of the Honors Program and wish to explore the possibility of an honors component for Biology 211 let me know by **Thursday 4 September**.

SUPPLEMENTAL INSTRUCTION: The Supplemental Instruction (SI) Leader for this course attends all classes and then schedules three weekly meetings for students. The times and meetings will be announced during the first week of class. Students should come to these meetings with questions regarding material covered in the text and lectures. SI meetings are not meant as a substitute for class, but provide for small-group discussion of information from class and reading.

NON-DISCRIMINATION POLICY: Iowa State University is "dedicated to fostering an environment in which differences in people such as nationality, race, gender, religion, cultural background, physical ability, and sexual orientation, are respected and mutual understanding is promoted." (from the ISU Bulletin)

DISABILITY ACCOMMODATION: Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact the Disability Resources Office at 515-294-6624 in room 1070 Student Services Building to coordinate reasonable accommodations for students with documented disabilities.

LEARNING STYLES

How do people learn best? How do YOU learn best?

In general, people do not learn things thoroughly simply by being “told” something one time. People often need to review new ideas several times before they learn them. In addition, people often need to engage with the new information in a variety of ways (seeing diagrams or pictures, discussing with peers, working problems, writing about, etc.) before they come to a full understanding of the new information and can integrate the new information into their previous understanding. Even greater effort is often required to REPLACE previous misconceptions with new more accurate (or more complete) conceptions. However, not everyone learns best in the same way. People tend to favor certain “learning styles” and each person exhibits a unique combination of learning styles. The level of success in college class work can be improved by understanding your learning style profile, and therefore, what sorts of strategies may be most effective in helping you learn.

You can learn something about your “learning style” – and what that may mean for which learning strategies might be most effective for you – by visiting this website and taking the free on-line learning styles test:

<http://www.ldpride.net/learningstyles.MI.htm>

Understanding something about your individual learning style has the potential to help you not only in biology, but in all the classes that you’ll take throughout your college career and in any context in which you need to learn something.

Course Schedule

Date	Topic	Text Chapter(s)
Aug 26	Introduction to Biology 211; History of Life on Earth	1, 25
Aug 28	The Tree of Life	1, 26
Sep 2	Prokaryotes	27
Sep 4	Prokaryotes, Protists	27, 28
Sep 9	Protists	28
Sep 11	Protists and Kingdom Plantae	28, 29
Sep 16	Bryophytes	29
Sep 18	Seedless Vascular Plants	29
Sep 23	Gymnosperms	29
Sep 25	Angiosperms	29
Sep 30	Fungi: Chytridiomycota, Zygomycota, Glomeromycota	31
Oct 2	Fungi: Basidiomycota, Ascomycota	31
Oct 7	Kingdom Animalia	32
Oct 9	Sponges and Cnidarians	33
Oct 14	Lophotrochozoans	33
Oct 16	Lophotrochozoans and Ecdysozoans	33
Oct 21	Ecdysozoans	33
Oct 23	Deuterostomes and Vertebrates	34
Oct 28	The Nature of Science; Mitosis	1, 12
Oct 30	Meiosis; Mendel	13, 14
Nov 4	Mendelian Genetics	14
Nov 6	Darwin and the Theory of Evolution	22
Nov 11	Evolution of Populations and Speciation	23, 24
Nov 13	Speciation and Primate Evolution	24, 34
Nov 18	Population Ecology	52
Nov 20	Population Ecology	52
Nov 24-28	Thanksgiving Break	
Dec 2	Community Ecology	53
Dec 4	Community Ecology	53
Dec 9	Ecosystem Ecology	54
Dec 11	Biomes	50
Dec 15	Final Exam 12:00 – 2:00 PM	

Exam Schedule

Exam Coverage	Available Dates
Unit 1	15-22 September
Unit 2	29 September – 6 October
Unit 3	13-20 October
Unit 4	27 October – 3 November
Unit 5	10-17 November
Unit 6	1-8 December
Unit 7	8-15 December
Unit 8	15-18 December