

ORGANISMS, ADAPTATIONS AND DIVERSITY

BIO 202 - Spring 2008 (4 credit hours)

Location: Kettering 229 (lect) and 327 (lab)

Time: 10:00-10:50 MWF (Lect), 3:00-4:50 W (Lab)

Instructor: Dr. Mason Posner Phone #: (419) 289-5691
320 Kettering E-mail: mposner@ashland.edu

Office Hours: Monday and Wednesday, 11am-noon

Prerequisites: BIO 201

Statement of Purpose: This course centers on the question: How do organisms solve the problems of survival, and how are the solutions that have evolved influenced by the environment? Students will examine how observed similarities and differences in organismal structure and function relate to environmental pressures, as well as study how these observations can be used to construct a logical theory of evolutionary relationships between different organisms. In addition, the complex interactions that have developed between different organisms and between organisms and their environment will be examined.

Course Objectives: To give students a solid foundation in the study of biology above the cellular level that will prepare them for advanced course work. This course will also show how higher levels of biological study integrate with the molecular and cellular biology studied in BIO 201. At the same time this course will further develop an understanding of how science works, and how new discoveries are made.

Approach: There will be three lectures and one lab per week.

Grading: Your grade will depend on the following work:

Three 1-hour exams. These will be given during lecture periods and will cover both lecture and lab material and any extra reading assigned during class. Material in the textbook not covered in lecture will **not** be covered on the exams. However, some material on the exams may not be in the textbook.

Final exam. Approximately 4/5 of this exam will cover lecture material from the end of the course, while approximately 1/5 will be cumulative.

Assignments will be due at the end of each lab.

4 lab quizzes covering lecture material. At the beginning of any lab there may be a short, unannounced quiz covering material from recent lectures. The questions will be basic, and are meant to insure that you are studying the correct material from lecture.

Written assignments. Prior to some labs you will be assigned questions based on a reading or listening assignment. Typed answers to these questions will be discussed and handed in during lab.

Extended Project. You will write a scientific paper based on data collected in lab. You will get more information about this project later in the semester.

Participation. Your active participation in both lecture and lab activities will account for 30 points of your grade.

Points summary:

Lecture (3 exams @ 100 points/each)	300
Final exam	125
Lab	
Assignments (13 @ 5 points each)	65
Quizzes (4 @ 10 points each)	40
Written assignments (4 @ 10pts each)	40
Extended Project	100
<u>Participation</u>	<u>30</u>
Total	700

Your final grade will be based on the percentage of the total possible points you obtain in class as follows:

90% - 100%	=	A- or better
80% - 89%	=	B- or better
70% - 79%	=	C- or better
0% - 69%	=	? In this region you might receive a D or F.

Course Web Page: www.masonposner.com

Reading. I will assume that you have read the pertinent sections of the textbook before coming to class. You will get much more out of class if you come prepared. We will not be covering every section of every chapter. I will, therefore, let you know ahead of time what sections of the chapter to concentrate on. Lab handouts **must** be read before coming to your lab section. Your time will be limited, and to complete all exercises you need to come prepared. You will miss points if you do not complete the lab exercises.

Attendance: 30 points of your grade will come from participation in class. While you will not lose points for missing lecture, you suffer the risk of missing important information for exams, and opportunities to gain participation points. You **must** attend lab. Missed labs will affect you in several ways: you will lose participation points, you will miss quizzes and you will lose points by not handing in lab assignments. Only with an excused absence can labs be made up. Excused absences are described below.

Excused Absences: An absence will only be excused if: 1. You have a letter from university health services or a private physician stating that you were unable to attend class for health reasons. 2. You will be traveling for a university sponsored event. This must be brought to my attention before the absence so that alternate arrangements can be made.

Missed Exams: Exams can only be made up if they are missed due to an excused absence. If you know that you will miss an exam ahead of time, you must let me know as soon as possible. I reserve the right to determine the format of the make-up. Most likely, make-up exams will be given as oral exams.

Academic Integrity Policy: Any student cheating on or plagiarizing an assignment will receive an “F” on that assignment, will be reported to the registrar’s office, and may be expelled from the University. Your student handbook defines plagiarism as follows:

“Plagiarism is the intentional or unintentional presentation of someone else's words, ideas or data as one's own work. In the event the faculty member deems the plagiarism is unintentional he/she shall typically require the student to rewrite the assignment. In the event the faculty member believes the plagiarism is willful, the sanctions in this document will apply. If the work of another is used, acknowledgment of the original source must be made through a recognized reference practice, and, if verbatim statements are included, through quotation marks as well. To assure proper crediting, a student will acknowledge the work of others:

1. Whenever one quotes another person's actual words.
 2. Whenever one uses another person's idea, opinion or theory, even if it is completely paraphrased in one's own words.
 3. Whenever one borrows facts, statistics, or other illustrative materials-unless the information is of such common knowledge so as not to be questioned.”
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I will assume that you are knowledgeable of the definitions of plagiarism!

Note: Although it is not technically plagiarism, do not extensively quote material from primary sources in your assignments. Use your own words unless there is absolutely no other way to avoid the original words of the author.

NO DOUBLE DIPPING: Assignments done for this course cannot be used in other courses. Likewise, you cannot use assignments from other courses to fulfill requirements of this course.

NO CELL PHONE USE IN CLASS OR LAB. This includes texting. If there is an emergency, please place or answer your call in the hallway.

TENTATIVE COURSE SCHEDULE

<u>Day</u>	<u>Chapter</u>	<u>Topic</u>	<u>Lab</u>
Jan 14	22	Intro, History of evolutionary thought	
Jan 16	22	Evidence for evolution	Introduction
Jan 18	22	Evidence for evolution	
Jan 21		**MLK Day**	
Jan 23	23	Evolution of populations	Building phylogenies
Jan 25	24	Speciation	
Jan 28	24	Macroevolution	
Jan 30	25	Phylogeny and systematics	Building phylogenies
Feb 1	26	A brief history of Earth and the origin of life	
Feb 4	26	A brief history of Earth and the origin of life	
Feb 6		Exam 1	Bacteria
Feb 8	27	Prokaryotes and metabolic diversity	
Feb 11	28	Origin of eukaryotes - protists	
Feb 13	28	Protistan diversity	Protists
Feb 15	29	Evolution of land plants	
Feb 18	29	Evolution of vascular plants	
Feb 20	30	Evolution of seed plants	Plants
Feb 22	31	Fungi	
Feb 25	32	Evolution of Animals	
Feb 27	32	Evolution of Animals	Fungi and Animals
Feb 29	33	Invertebrates	
Mar 3		Exam 2	
Mar 5	33	Invertebrates	Animal diversity
Mar 7	34	Chordate evolution and diversity	
Mar 10-14		**Spring Break - No Class**	
Mar 17	34	Primate and human evolution	
Mar 19	40	Form and function/Homeostasis	Animal dissections
Mar 21		**Easter Break - No Class**	
Mar 24		**Easter Break - No Class**	
Mar 26	40	Form and function/Homeostasis	Gas exchange
Mar 28	41	Nutrition	
Mar 31	42	Circulation and gas exchange	
Apr 2	43	Defense of the body	Physiology
Apr 4	44	Osmoregulation	

Apr 7	46	Animal reproduction	
Apr 9	47	Animal development	Development
Apr 11		Exam 3	
Apr 14	48	Cell Communication	
Apr 16	50	Introduction to ecology	Peer review
Apr 18	50	Introduction to ecology	
Apr 21	51	Behavioral ecology	
Apr 23	51	Behavioral ecology	Field work
Apr 25	53	Community ecology	
Apr 28	53	Community ecology	
Apr 30	54	Ecosystems	Field work
May 2	54	Ecosystems	

FINAL EXAM: Monday May 5th, 10:30 am -12:30 pm