Biology 116: Organisms and Environments Spring 2013 Syllabus

Subject to revision

INSTRUCTOR: Bruce Mobarry, Ph. D.
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Office hours: 1:30-2:20 Tuesday, 12:30-1:20 Wednesday, or by appointment.

TIME AND PLACE

Lecture: MWF, 10:30 –11:20; TLC 046

Labs:	01 TUES. 9:30–12:20	03 THURS 9:30–12:20
	02 TUES 1:30– 4:20	04 THURS 1:30– 4:20

All labs are in LSS 356. You may only attend the section for which you are registered!

TEXTBOOKS

Biology, 9th edition, 2011. Campbell & Reece. Benjamin Cummings, Pub.
[Note: This text is also used for BIO 213] *Required text*

Photographic Atlas for the Biology Laboratory, 6th edition, 2009. Van de Graaff & Crawley. Morton Pub. *Required text* [Note: This book will also be used for BIO 213 & some other classes]

Laboratory Exercises will be posted on-line on Bblearn, except for those distributed in the lab.

COURSE DESCRIPTION

In BIOL 115 you studied the fundamental concepts of evolutionary biology – the basic molecules and components of life, cell structure and function, and how modifications that confer a survival advantage are passed onto the next generation. In BIOL 116, the diversity of life will be explored in the context of organisms evolving to fill available niches through the history of the Earth. We will begin with a discussion of classification in biology, followed by a timeline of the evolution of geology and biology on the Earth. The origin of different groups of organisms and the evolutionary relationship between them will be emphasized. Groups will be explored in the order of their appearance on Earth, starting with the prokaryotes. Then the relationships between the eukaryotes (rhizaria, chromalveolata, archaeplastida, unikonta, excavata, fungi, plants, and animals) are examined. Some basic plant and animal anatomy will be discussed where appropriate. We then look at how organisms interact with each other and also with their environment (ecology). To conclude the course, we will discuss the impact that humans have on planet earth's biosphere.

LEARNING OUTCOMES

Students will learn the following:

- Classification of organisms, including classification techniques and resultant groups.
- An understanding of the history of life on Earth from origin to present day with examples.
- A survey of life's diversity.

- Evolutionary relationships between organisms and the environment, including other organisms.
- Embryology and some basic anatomy in plants and animals.
- How organisms interact with each other and also with their environment (ecology).
- The impact that humans have on planet earth's biosphere.

BBLEARN

Online course material may be accessed via BbLearn: (bblearn.uidaho.edu). Quizzes, lecture slides, labs and lab write-ups will be posted on BbLearn. BIOnet can be accessed through BbLearn. It provides supplemental web-based instruction of some of the topics covered in class, including lectures and self-guided exercises. ***Mastering Biology*** is the website associated with the textbook. It provides some learning resources, but is ***not required*** for this course.

LECTURE

Students are strongly advised to attend all lectures. Lectures will cover the material deemed most important for the course. Any changes will be announced there, as well as review questions and answers the session before exams.

I will post the lecture presentations on the Bblearn site before each lecture as pdf documents. You may print these out and use them as a basis for taking notes on the lecture. Also, review topics for each exam will be posted on Bblearn before this review, so that you can ask questions in the review session.

Any behavior that is disruptive to the class, or deemed by the instructor or teaching assistants to be disrespectful to fellow students or the instructor will not be tolerated. This includes conversations with fellow students, sleeping in class, reading newspapers, using distracting computer programs, texting, or using cell phones during class time. Students that violate this rule may be summarily dismissed from class. Repeated violation may result in expulsion from the course and a failing grade for the student.

GRADING

3 lecture exams (90 points each)	270
Final exam	180
15 Bblearn Quizzes (10 pts each)	150
Laboratory reports	180
Lab Practical	25
TOTAL	805 Points

Letter grades use the following scale: A: 90 – 100%, B: 80 – 89%, C: 70 – 79%, D: 60 – 69%, F: 0 – 59%. You can check your current grade in BbLearn under the My Grades link. There will be an entry called current grade with your up-to-date class percentage.

Lecture exams may consist of fill in the blank, matching, short answer or multiple choice questions. Multiple choice questions will be answered on scantron sheets. Answers written on the exam but not transferred to the scantron sheet will not be counted!

Quizzes will be accessed through Bblearn (www.bblearn.uidaho.edu) outside of class. There will be 15 weekly quizzes, each worth 10 points. Students are allowed three attempts for each quiz. Only the

highest score from your attempts will be recorded as your grade for each weekly quiz. The quiz schedule will be posted in the class schedule, and is subject to change.

Lab reports are due the week after the lab; late reports will lose 5% of their value for each day that they are late. Students that are more than 10 minutes late for a lab will not receive full credit for that lab.

Any makeup exams or other assignments must be prearranged, or a note from the Dean must be procured and delivered to me if an emergency prevents your attendance from class.

GRAMMAR, SYNTAX, SPELLING, LOGIC

Grades on tests, reports, labs, and quizzes will be reduced if there is unclear or confusing grammar, spelling, syntax, or logic. If your handwriting is illegible, the grade will be reduced significantly. Transfer your lab reports to a word processor if you have difficulty in handwriting. Clear communication of ideas and observations are as critical in science as in other fields of endeavor, so your grade will depend on your commitment to clear, concise communication.

ABSENCES

Absence from exams and lab sessions will only be excused for reasons of illness, family emergency or conflict with an official University function. Missed lecture exams will be scheduled at the convenience and in the format set by the instructor. Missed lab sessions may be rescheduled at the discretion of the instructor. Absence from labs may result in you failing this course.

ACADEMIC HONESTY

Acts of cheating or plagiarism in this class will result in zero points for that assignment and may ultimately result in you failing this class. All persons involved will be held accountable. **Cheating** refers to the acquisition of answers to test questions in a dishonest fashion, while **plagiarism** is defined as the representation of another student's work as your own, in its entirety or with slight change of wording. It also includes the use of writing from published sources without citing the author(s).

PREVIOUS KNOWLEDGE

The following topics from Bio115 are required in this course:

- Cell structure and function,
- Cellular biochemistry and energy conservation mechanisms,
- Transcription and translation of the genetic code,
- The cell cycle, meiosis and mitosis, and cell division,
- Genetic aspects of development,

The following topics were also covered and are of particular importance to this course, so a review is **highly advisable**:

- Neo-Darwinian evolutionary theory,
- Mechanisms that give rise to genetic diversity in populations,
- How natural selection leads to incremental change within species,
- How interactions among species and between organisms and their environment shape the course of adaptive evolution.

WEBSITES OF INTEREST

- Textbook companion: www.masteringbio.com is a website with chapter tests and other learning aides which accompanies your text book.
- University of California Museum of Paleontology: www.ucmp.berkeley.edu has lots of information and links to images of fossils from our prehistoric past.
- Tree of Life Web Project: www.tolweb.org is a collaborative internet project containing information about phylogeny and biodiversity.

STUDY SKILLS

Tutoring & Academic Assistance Program (TAAP) has produced a number of handouts on study skills which can be found in the University Commons (also available on their web page).

Lab Schedule for Biology 116 – Spring 2013

Schedule subject to revision

Lab Location: LSS 356 unless otherwise noted. Lab coordinator: Jean Norris

Laboratory Exercises for Organisms & Environments will be posted on-line on BbLearn, except for those distributed in the lab. Lab discussion questions are posted in the Labs section of BbLearn.

Section	Time	Teaching Assistant	Section	Time	Teaching Assistant
1	T 9:30-12:20	Shelby Allen	3	R 9:30-12:20	Ashley Vaughn
2	T 1:30-4:20	Nathan Orlando	4	R 1:30-4:20	Savannah Sheehy

Week of:	
01/07/13	No lab this week
01/14/13	Introductions, Lab Safety, Flowers and Trees lab. Check BbLearn for lab assignments.
01/21/13	Viruses and Archaea
01/28/13	Ecological Succession in Milk
02/04/13	Eukaryotic Diversity
02/11/13	Fungi & their Symbiotic Associations
02/18/13	Plants: The spore-forming plants
02/25/13	Plants *cont.:* Seed Plants
03/04/13	Animals: Development & preserved specimens
03/11/13	Spring break- no lab
03/18/13	Animals *cont.* Live specimens & Insect museum
03/25/13	Lab exam
04/01/13	The Barnacle Zone
04/08/13	Owl pellet lab
04/15/13	TBD
04/22/13	Patchy Prairies Lab
04/29/13	Dead week: no labs

Biology 116 Lecture Schedule Spring 2013

Schedule subject to revision

Week of:	Monday	Wednesday	Friday
01/07/13	No class	Introduction to Biology 116 **Review** Chapters 22-24	Classification of Organisms **Read** Chapters 25
01/14/13	Evolution & Fossil Record	Precambrian Era: The Early Earth **Read** Ch. 26	Conditions on Early Earth
01/21/13	Martin Luther King Day: no class	To be announced	Prokaryotes **Read** Ch. 27
01/28/13	Prokaryotes	Viruses **Read** Chapter 19	Exam #1 Review
02/04/13	**Exam #1**	Archaean Era: Early Eukaryotes **Read** Ch. 28	Proterozoic Era: Eukaryotic diversity
02/11/13	Ordovician Period: Fungi **Read** Chapter 31	Fungi	Ordovician Period: Bryophytes **Read** Ch. 29
02/18/13	President's Day: no class	Devonian Period: Early Vascular Plants	Carboniferous/Permian: Gymnosperms **Read** Ch. 30
02/25/13	Jurassic: Flowering Plants	Plant-Pollinator Relationships	Exam #2 Review
03/04/13	**Exam #2**	Animal body plans & diversity **Read** Chapter 32	Sponges, Cnidarians, & Rotifers **Read** Chapter 33
03/11/13	Spring Break- No class	No class	No class
03/18/13	Locotrophozoa	Ecdysozoa	To be announced
03/25/13	Cambrian: Deuterostomes **Read** Chapter 34	Devonian: Fishes & Tetrapods	Carboniferous: Amniotes
04/01/13	Jurassic: Birds & Mammals	Exam #3 review	**Exam #3**
04/08/13	Ecosystems and the Biosphere **Read** Ch. 52	Distribution of Organisms	Population Ecology **Read** Chapter 53
04/15/13	Population Ecology, cont.	Ecology of Communities **Read** Chapter 54	Ecology of Communities, *cont.* and Ecosystems
04/22/13	Dynamics of Ecosystems, *cont.* **Read** Chapter 55	Conservation Biology& Restoration **Read** Ch. 56	Conservation Biology& Restoration **Read** Ch. 56
04/29/13	Exam #4 Review	Study Day: No class	Study Day: No class
05/06/13	**Final Exam** 10:00-12:00 Tuesday, May 7		