

Biological Concepts: Diversity

Biology and Microbiology 106

Course Syllabus

Fall 2013

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Office hours: Monday 10:20-12:30pm, Thurs. 9:00-10:00am, or by appointment.

COURSE DESCRIPTION

This four credit-hour course will examine the diversity of life on Earth. We will cover all major organismal groups including bacteria, protists, fungi, plants, and animals. A central theme in the class is evolution as a force driving diversity. Particular emphasis will be placed on how these organisms impact humans, and the role of humans in the ecosystem. Labs will involve observation of specimens to illustrate this diversity. The course ends with a section on various aspects of human biology.

GENERAL OBJECTIVES

- A. To understand the scientific method.
- B. To generally characterize and classify living forms.
- C. To discuss natural selection, adaptation, and speciation.
- D. Discuss the current theories of the origin of life.
- E. Understand the 6 kingdom classification scheme, and how it differs from previous schemes.
- F. Understand how all life is interconnected.
- G. Explain important aspects of human biology including reproduction, circulation, and immunology.

THE TEXT BOOKS

(Recommended): Biology (7th Edition) by Raven, Johnson , Losos, and Singer

Lab Text **(Required):** Photo Atlas for Biology by Perry and Morton

Lab Sketchbook **(Required)**

Lab Manual **(Required)**

ATTENDANCE POLICY

While there is no formal attendance requirement, attendance in lecture, lab and discussion periods is strongly recommended. Lectures will include much information not included in the textbook. The laboratories will include the observation of specimens and exercises that usually cannot be made up if missed. Earning a high grade in the class will be

difficult, if not impossible, without regular attendance. If you miss a class period, it is your responsibility to get notes from a fellow student. You are 100% responsible for all material covered in lecture, lab and discussion.

GRADING

This course can be thought of as having two halves: Lecture and Lab/discussion. Lecture grades will be determined by your performances on 4 exams (100 points each). Lab counts for 500 points and thus slightly more than half of your total grade. The grading scale for the entire course is below:

90-100%	A
88-89%	A-
87-88%	B+
80-86%	B
78-79%	B-
77-78%	C+
70-76%	C
68-69%	C-
67-88%	D+
60-66%	D
58-69%	D-
<58%	F

POLICY FOR MAKE-UP EXAMINATIONS

All students who miss an examination and who have an official institutional excuse may be given a make-up examination. Please see me in advance and let me know that you will be absent. Colds and minor illnesses are not a valid excuse for missing an examination. Routine appointments (physicians, dentists, orthodontists, chiropractors, ect;) are not sufficient to excuse a student from an examination, and a physician's note may or may not excuse a student from missing an examination. Those students who miss an examination for personal reasons will not normally be given a make-up examination and will receive a grade of 0 points for that examination. **All make-up examinations must be individually arranged with your instructor as soon as possible.**

ACADEMIC DISHONESTY

Academic dishonesty of any sort will not be tolerated. It is expected that each student will do his/her own work at all times. The first offense will result in a zero for that assignment with no chance of a make-up. The second offense will result in an "F" for the course, and action will be taken up with the Dean of Students. See the UW Oshkosh Student Code of Conduct for additional information on academic dishonesty.

LECTURE AND READING TOPICS

Date	Topic	Readings
Sept 4	Intro to Class, Scientific method, history of evolution	Ch 1 pp. 4 -14 Ch 22 pp. 433-450

	Ch 23 pp. 453-468
Sept 6 History of Evolution	
Sept 9 Origin of life and the 6 Kingdoms	Ch 26 504-509
Sept 11 Kingdom Eubacteria, Kingdom Archaeobacteria,	Ch 28
Sept 13 Video	
Sept 16 Bacteria (continued), Viruses Video	Ch. 27
Sept 18 Kingdom Protista	Ch 29
Sept 20 Review	
Sept 23 Exam I	
Sept 25 Origin of Eukaryotic Cells, Kingdom Fungi	Ch 31
Sept 27 Video	
Sept 30 Fungi	
Oct 2 Review of life cycles	
Oct 4 Kingdom Plantae, Mosses, Liverworts and Ferns	Ch 30 pp 582-592
Oct 7 Seed plants (Gymnosperms and Angiosperms)	Ch 30 pp 593-602
Oct 9 Review of life cycles	
Oct 11 Plant structure and function, Video?	Ch 36
Oct 14 Video	
Oct 16 Plant nutrition and transport	Ch 38, Ch 39
Oct 18 Exam II	
Oct 21 Kingdom Animalia, Invertebrate phyla	Ch 32, Ch 33
Oct 23 Parasites	
Oct 25 Invertebrate phyla	Ch 34
Oct 28 Video	
Oct 30 Vertebrates	Ch 35 pp 682-708.
Nov 1 Vertebrates	
Nov 4 Video	
Nov 6 Population biology	Ch 55

Nov 8 Human populations

Nov 11 Ecosystems, Global Concerns

Ch 54

Nov 13 Biomes

Ch 58

Nov 15- Biomes

Nov 18 Wetlands and aquatic systems

Nov 20 Exam III

Nov 22 Circulatory system

Ch 49 pp 984-999

Nov 25 Problems with the Circulatory system

Thanksgiving Break!

Dec 2 Reproductive system

Ch 52

Dec 4 Immune system

Ch 51

Dec 6 Immune system problems

Dec 9 Human evolution

Ch 35 pp 709-717

Dec 11 Review

Dec 13 Exam IV

Lab Outline:

Week	Topic
1	Taxonomy
2	Bacteria
3	Protists
4	Lab Exam I
5	Fungi
6	Algae, Mosses, Ferns
7	Gymnosperms
8	Angiosperms
9	Lab Exam II
10	Invertebrates
11	Chordates
12	no lab
13	Circulatory system
14	Reproductive system
15	Lab Exam III

-All lab Exams will be given during the Lab Meeting Day/Time (Rm 51) .

