

# Biology 116X

## Fundamentals of Biology II

### Summer 2009 Course Description and Syllabus

*This document is a draft and is subject to change. The actual course syllabus and schedule will be provided on the first day of class. **Be aware that we will be covering approximately one chapter from the textbook per day – this is an intensive course that completes an entire semester's work in six weeks.***

#### Instructors

Dr. Kate Doran  
ffkd@uaf.edu  
Office: 307C Bunnell  
Phone: 474-6482

Dr. Denise Kind  
ffdmk@uaf.edu  
Office: 309 Bunnell  
Phone: 474-6298

Office hours Monday and Wednesday after class or by appointment

#### Course Materials

- Text Freeman, S. 2008. Biological Science, 3rd ed. San Francisco: Pearson Benjamin Cummings. The textbook comes with access to [www.masteringbio.com](http://www.masteringbio.com) -you are required to have access to complete homework assignment (more on this below).
- Lab manual Provided. You will need to get a 3 ring binder to store this manual.
- Turning point® clicker The Bookstore carries clickers that are compatible with the receiver we use, so a clicker bought online is unlikely to work. You only need one clicker for all of your UAF classes.
- Lecture outlines: Lecture outlines will be posted ahead of time using UAF's Blackboard system. You are strongly encouraged to print out the outlines ahead of time to aid your in-class note taking. The outlines are not complete lecture notes and cannot serve as a replacement for attendance at lecture.
- Web sites Course materials will be posted on UAF's Blackboard systems. To log into it, go to <http://classes.uaf.edu/> and log in using your UAF ID and password. If you are using Blackboard for the first time, click on the link for first-time users for information. All course handouts will be posted here.
- Homework Homework will generally be posted and done at your textbook's website: <http://www.masteringbio.com/>. You should have access to this website with the purchase of your textbook. If you need to purchase a stand-alone web access because you are sharing a book or have purchased a used book, this can be done through the websites. We are using this website because it allows us to provide you with some outstanding tutorials and other excellent resources from your textbook publishers. You will need to enroll yourself in the course; the course ID is BIOL116XSummer2009.

Facilities	<p>Lecture 10:00 -11:50am, Mon. through Thurs; Bunnell 302.</p> <p>Laboratory 1:00 - 4:20 pm, Tues and Thurs; Bunnell 302.</p> <p>Computer labs Biology Computer Labs- Bunnell 301 and 407.          UAF Student Access Lab- Bunnell 319.          Library Computer Room/Help Desk - Rasmuson Library 404          More information is available at  <a href="http://www.uaf.edu/dcc/labs/index.html">http://www.uaf.edu/dcc/labs/index.html</a></p>
Libraries	<p>Rasmuson Library (summer hours: M-Th 7:30am-9:00pm,          F 7:30am-6:00pm, weekends noon-6:00pm, closed July 3-5)</p> <p>BioSciences Library (summer hours: M-F 8:00am-5:00pm,          Sun. 1:00 pm to 5:00 pm, closed on Saturdays and holidays)</p>
Course Prerequisites	<p>Enrollment in Biology 116X requires prior successful completion of Biology 115X or its equivalent. Biology 115X requires placement in Math105X or higher, placement in English 111X or higher, and concurrent enrollment in, or prior successful completion of (C or better) Chemistry 105X, so we expect that those conditions will be met by students enrolled in 116X as well. Students who do not meet these conditions will be dropped from the course. Exceptions will be considered on a case-by-case basis.</p>
Course Description	<p>Biology 116X is the second semester of the year-long inquiry into biology. Biology 115X use to be Biology 106X and Biology 116X used to be Biology 105. Biology 115X focuses on structure and function from the molecular level through the level of the individual organism; Biology 116X introduces the evolutionary and ecological processes that shape the biology of organisms and cells. By the time that you finish this course, you should have an understanding of genetics and inheritance, the processes and mechanisms of biological evolution, the diversity of living organisms and their evolutionary relationships, plant structure and function, and ecology. You should also have an understanding of the connections between the different fields of biology, which you have studied throughout the year: for example, how evolution and ecological interactions both influence and are constrained by structure and processes at the molecular, cellular, and organismal levels that were covered in Biology 115X.</p> <p>An understanding of the biological processes, structures and functions is not the only goal of the course. There are fundamental skills and concepts that you should gain or refine in an introductory science course. One of the most important things you should continue to refine this semester is your understanding of the scientific method and how it allows science to reach new understanding through careful observation and empirical testing of hypotheses. The skills you learn or refine this year will improve your ability to conduct the types of scientific investigations that are a fundamental part of biology. These include laboratory techniques, basic principles of experimental design and execution, basic data interpretation and analysis, presentation of results in written reports and the ability to find and use scientific literature. They will also enhance your ability to analysis and critically evaluate biological issues and make informed decisions in your own life.</p>

Many fields of biology that you will study this semester have expanded rapidly over the last few decades. Other areas have been studied for over a century. Even these “older” fields of study have undergone recent, rapid expansion with recent technological innovations that allow us to investigate them in new ways. New advances and discoveries are constantly being made and published. When a scientist reads a report or hears of an interesting finding, he or she critically reads and evaluates the reported findings. This is something that we expect you to do it as well; as you read the text, listen to lectures, and participate in lab, you should recognize that all the topics you are studying are based on empirical testing and think carefully about how they have been tested and what current research shows.

## Grading

Grades will be based on the percentage of total points earned out of the total possible points based on the following scale:

<u>Grade</u>	<u>% of Total Points</u>
A+	97-100
A	90-96
A-	88-89
B+	86-87
B	80-85
B-	78-79
C+	76-77
C	70-75
C-	68-69
D+	66-67
D	60-65
D-	58-59
F	0-57

The point breakdown for this course is approximately as follows:

400 pts	four one-hour exams covering readings, lecture, and lab materials
200 pts	final two-hour exam (cumulative)
100 pts	report on community experiment
400 pts	lab reports
120 pts	homework assignments
50 pts	Clicker Quizzes

## Lectures

Active attendance of lectures is strongly recommended. Exams will be primarily on material covered in lecture. Additionally, clicker quizzes will be given approximately daily. Clicker Quizzes cannot be made up: if you are not there, you will receive a zero unless it is an excused absence which you have discussed with us in advance. You will need to register your clicker on Blackboard before the second day of class.

If you know that you will miss an exam or lab, you must contact the instructor in advance to discuss your problem. Make-up will be offered only under extenuating circumstances and are granted at the instructor's discretion. Some work may be impossible to make up. Exams or labs that are missed without instructor permission will be recorded as a zero. Absolutely no makeup exams will be administered after the exam has been returned to students. Work turned in

after it is due (late work) will be recorded as a zero unless you received an extension from the instructor in advance.

#### Academic Honesty

Academic dishonesty will not be tolerated. You are expected to be familiar with the UAF Student Code of Conduct (available on-line and in the UAF Catalog) and to follow it at all times. No collaboration is permitted on exams or quizzes. The use of any reference materials (notes, books, other people, etc.) on exams is academic dishonesty. Although you may work with a lab partner or partners during lab, the report that you turn in must be written independently, in your own words, without any traces of copying. Copying or paraphrasing another student's work as your own is a violation of the Student Code, as is copying or paraphrasing material published in print or on-line. Your homework, also, must be entirely your own work. You are not permitted to use another person's clicker or to allow another person to use yours. Any instances of academic dishonesty of any kind will result in a grade of zero on the work, forwarding of the incident to the appropriate University personnel, and may also result in an F in the course and/or expulsion from the University.

#### Tentative Schedule of Topics

A detailed schedule with dates for each lecture and test will be provided later in the spring. **Be aware that we will be covering about a chapter per day; this is a six-week intensive course.**

Week 1 Animal diversity

Week 2 Animal diversity, population ecology and community ecology

Week 3 Community ecology, ecosystems and conservation ecology

Week 4 Plant structure and function

Week 5 Mendelian genetics and evolution

Week 6 Evolution