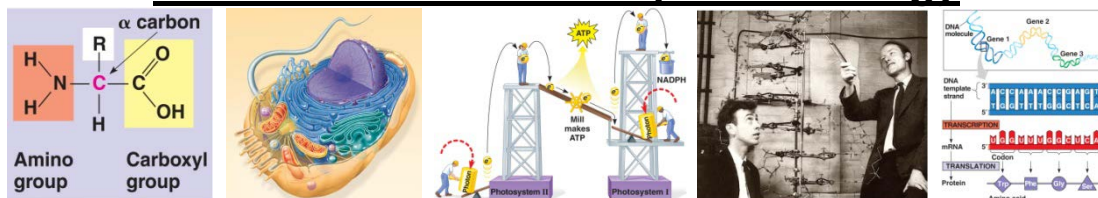


# Fall 2013 - BI 211: Principles of Biology



## COURSE INFORMATION

Course meets: Boomer Lecture: 8:00-8:50 a.m., MTWF in NS103

Baltzley Lecture: 9:00-9:50 a.m., MWTF in NS103

*Students must attend their assigned lecture. While we have aligned our course learning outcomes, we will present, emphasize, and test slightly different material from time to time. Pre- and post-test questions will be the same to ensure common standards are being assessed.*

Labs: each student registers/attends 1 section

<u>Tuesday</u>	<u>Thursday</u>
8:00-10:50 AM	8:00 – 10:50 AM
11:30 – 2:20 PM	11:30 – 2:20 PM
3:00 – 5:50 PM	

Materials You Need: Biology, Campbell/Reece, 9th ed. (also used for Biology 212 & 213)  
Calculator (for most labs, for some class problems, homework)  
Safety Goggles For Lab (available at bookstore)  
Clickers (available for rent at bookstore or purchase on-line)  
Class Handouts - on-line at Moodle (lecture and lab sites!)

Course Instructors: *office hours posted on office doors and on-line.*

Dr. Michael Baltzley, Office NS219, Phone 8-8832, email: baltzlem@wou.edu

Dr. Sarah Boomer, Office NS221, Phone 8-8209, email: boomers@wou.edu

Dr. Kristin Latham, Office NS223, Phone 8-8868, email: lathamk@wou.edu

Lindsay Biga, Office NS 118, Phone 8-8491, email: bigal@wou.edu

About Biology 211: This is the first of a three-course series required for all biology majors. Biology 211 covers basic chemistry and biological molecules, cells and metabolism, genetics, and gene expression. This course is challenging for students who have not taken high school biology or chemistry, who have not mastered basic cell biology and genetics, and who have not yet developed strong study habits. Because of these challenges, the Department of Biology continues to study teaching and learning in Biology 211. Thus, all students are required participate in pre-course survey, as well as pre- and post-tests, to help us better advise, assist, and retain students in this series.

## INTRODUCTION

**Course Objectives:** *At the end of the course, students should be able to...*

### UNIT ONE

- describe properties of life, emphasizing levels of biological organization through the cell
- explain biological molecules, including building blocks, chemical properties, and function
- describe required parts of eukaryotic (both plant and animal) cells and prokaryotic cells

### UNIT TWO

- describe membrane structure and function, including diffusion, osmosis, and transport
- explain basic thermodynamics, emphasizing the relationship between order and energy
- diagram and explain how cells harvest energy via respiration, fermentation, photosynthesis

### UNIT THREE

- understand the cell cycle and compare and contrast mitosis and meiosis
- recognize inheritance patterns, including for genetic diseases, to predict cross outcomes
- describe DNA, replication, and understand the basis for genetic variation and evolution

### UNIT FOUR

- explain gene expression (transcription and translation), and mechanisms of gene regulation
- describe special examples of molecular biology, including viruses and cancer
- describe molecular applications, including biotechnology, genomics, and bioinformatics

### CROSS-CUTTING

- engage in laboratory experimentation, data analysis and interpretation, and critical thinking

#### **Course Point Distribution:**

In-Class Exams	3x100 = 300
Final Exam	= 200
Lab (Quizzes & Worksheets)	= 160
Approximate Clicker Activities	= ~50
<b>Total ~710 points</b>	

#### **Grading**

90-100%	= A
80-89%	= B
70-79%	= C
60-69%	= D
<60%	= F

### **COURSE POLICIES**

#### **Lecture Attendance and Clicker Activities:**

Research shows that students who are in class, engaged, and studying regularly perform better. For this reason, we will be employing daily Clicker Activity points. Mandatory Clicker activities will begin on day FOUR. There will be approximately 30 days of lecture where Clicker Activity points are available – but we will only count 25. Because of these grace days, no make-up assignments are available; if you accumulate more than 5 class absences, you need to discuss your situation with the Office of Student Affairs (838-8221). Each day's Clicker activity will count for 2 pts – 1 for the pre-lecture study quiz (points will be based on accuracy AND you can use your homework notes) and 1 for participation in other Clicker activities. During lecture, please turn off or mute cell phones. Use of wireless electronic devices is fine for note-taking, but should not be used for other purposes (texting, emailing, surfing).

#### **Exams:**

Exams are held during normally scheduled lecture times. Course exams will be composed of 70% multiple choice and 30% short answer. Scantrons will be provided for exams. You will be required to place all belongings to the side of the lecture hall before taking a seat. Every effort will be made to place empty desks between students, particularly in the back of the lecture hall. Calculators will not be allowed unless stated. Owners of cell phones that go off may incur a point deduction. ***If you miss an exam because of a university-sanctioned event, notify your instructor one week in advance to schedule your make-up. If you miss an exam because of a medical or family emergency, you must communicate this through the Office of Student Affairs (838-8221) and have this situation broadcast to all your professors.*** Students who miss exams for no reason will be deducted 10% of their exam total per day. No alternative final exams or times will be available; if a student has an emergency during the final, they will have to take an incomplete for this course.

#### **Lab Attendance Policy:**

It is Biology Department Policy that ***three or more unexcused lab absences automatically results in a failing laboratory grade, and that failing the laboratory portion of a Biology 200-series***

**course will result in a failing grade for the ENTIRE course.** Here are two options for avoiding unexcused absences:

Option One (BEST): If possible, you may arrange to attend a different lab section during the same week that you missed. You must confirm with the instructor of that lab and with your lab instructor before you do this. *Students who know they will be missing a lab because of a university-sanctioned event need to make plans to complete this option in advance.*

Option Two: ***If you miss lab because of a medical or family emergency, you must communicate this through the Office of Student Affairs (838-8221) and have this situation broadcast to all your professors.*** In this case, you will not complete the missed quiz/worksheet - ***BUT you still have to master the material on your own and take the following week's quiz. Points for missed assignments will represent an average of all your other quizzes and worksheets.***

### **Lab Expectations and Assignments:**

Prior to each lab, you are expected to have read the lab exercise and completed the pre-lab assignment. During each lab, you will complete an in-lab worksheet (10 pts each). You are expected to bring your lab exercise handout, a calculator, and your text to every lab. After lab, you are expected to study your lab and complete any handout-stated homework. A weekly lab quiz (10 pts each) will be given at the beginning of each lab and will cover the pre-lab assignment, in-lab activities, and homework; if you arrive late, you will not be given extra time for the quiz. At the end of the term, your instructor will drop your lowest quiz score. While in lab, full participation is expected. Proper classroom etiquette (see below) is crucial to ensure that everyone is creating a safe and positive learning environment. *You may receive point deductions if you fail to comply with etiquette, safety, or participation policies, including leaving the lab early for any reason other than a school-sanctioned activity or documented medical emergency.*

1. Place extra books, coats, purses, backpacks, etc. in designated areas (e.g. under benches, in bench shelves, by coat rack at front of the room) - NOT on the bench tops.
2. Do not eat (including gum), drink (not even a water bottle!), or apply cosmetics in the lab.
3. Follow all lab-specific safety regulations when directed to do so - e.g. if your instructor or the procedure/handout says you must wear goggles and gloves, put them on!
4. At the end of lab, leave your lab table clean, neat, and ready for the next class! If you make a mess, clean it up! If you turn it on, turn it off! If you move something, put it back.
5. Turn off or mute cell phones, beepers, and pagers. You should not be texting, emailing, surfing the web or working on assignments from another class while in lab.

### **OTHER INFORMATION**

#### **Academic misconduct:**

Cheating (e.g. using notes, electronic devices of any kind, copying, or making information available to classmates during an exam), and presenting the work of another person as one's own (plagiarism) are serious breaches of academic honesty. This includes allowing another student to use your Clicker during class in any capacity. Any Clicker-based cheating will result in the immediate loss of all Clicker Activity points.

We expect you to abide by the university's Code of Student Responsibility, which can be found at [www.wou.edu/student/residences/pdfs/the\\_code\\_of\\_student\\_responsibility.pdf](http://www.wou.edu/student/residences/pdfs/the_code_of_student_responsibility.pdf). Academic Dishonesty is defined beginning on page 4. A single instance of cheating or plagiarism will result in a zero and may lead to a failing grade for the course, and/or disciplinary action through WOU's Campus Judicial Program. A continuing pattern of failure to maintain a high level of academic honesty can lead to dismissal from WOU.

**Disabilities:**

Students with disabilities that may require assistance should contact the Office of Disabilities Services (ODS) to discuss documentation and individualized accommodations/services. ODS is located in the Academic Programs and Support Center (APSC) Suite 405, phone/TTY is (503) 838-8250.

**The Learning Center:**

This office has services available for students to help them be successful, including tutoring, study groups and skills, and other resources; please visit: [www.wou.edu/provost/aalc/learning/index.php](http://www.wou.edu/provost/aalc/learning/index.php)

**WOU Student Success Specialist**

Students in this class may be referred to the WOU Student Success Specialist if the instructor determines their performance in the class is placing them at academic risk. The Student Success Specialist will offer to work with referred students to address issues and develop a student success strategy. Irrespective of whether a referral has or has not been made, you are ultimately responsible for tracking your own progress in this course.

**Withdrawal:**

The last day to drop this course without receiving a grade is October 25, 2013; the last day to withdraw from this course is November 8, 2013.

**Some Study Tips - Things To Do After Every Lecture or Lab:**

1. **LEARN VOCABULARY FIRST!** Learning biology is like learning a new language. Highlight every new word from lecture and lab that you do not fully understand and generate a definition using the lecture notes and your textbook. Use terms to make vocabulary flash cards and study them every day until you can state and explain them from memory.
2. **READ THE BOOK!** Carefully review each accompanying text chapter, emphasizing vocabulary, figures, problems, and making sure you understand all concepts from lecture and lab. Use lecture notes and lab handouts to make sure you are focused on the right material - and skip anything that is not covered or assigned in lecture or lab.
3. **TEST YOURSELF!** Many students think they understand the material just by sitting in lecture and listening to their instructor describe figures or solve complex story problems - and then they are surprised when they recall little to nothing during the exam. Do not let the exam be the first time you actually see whether you really know the material.

Finally, if you find that things are too challenging, talk to your instructor and advisor about pursuing a less intense track of study. Some students, for example, decide it is in their best interest to take 100-level biology first (we recommend 102 first) - either as a way to ease into the material more slowly or as a way to discover they are not as into biology as they thought.

**Syllabus:**

This syllabus is tentative; we reserve the right to make changes, but will let you know any alterations in advance of affected assignments.

# Tentative Syllabus – BALTZLEY Section

Week	Lectures	Text Ch.	Lab Topic
1	M – MANDATORY Pre-Test, Syllabus W – Intro to Biology R – Chemistry I F – Chemistry II	1 1, 2 2, 3	Scientific Method, Basic Skills
2	M – Bio-Molecules I W – Bio-Molecules II R – Bio-Molecules III F – Cells I	4 5 5 6	Protein Analysis and Enzymes
3	M - Cells II W – Membranes R - Introduction to Metabolism F - Exam 1 (Intro to Cells)	6 7 8	Cell Structure and Membrane Function
4	M – Chemical Energy I W – Chemical Energy II R – Photosynthesis I F – Photosynthesis II	9 9 10 10	Respiration
5	M - Cell Communication W – Cell Cycle & Mitosis I R – Cell Cycle & Mitosis II F – Exam 2 (Membranes to Cell Comm)	11 12 12	Photosynthesis
6	M – Meiosis & Inheritance W – Genetics I R – Genetics II F – Genetics III	13 13 14 14	Cell Division: Mitosis & Meiosis
7	M – Genetics IV W – Genetics V R – DNA I F – DNA II	15 15 16 16	Genetics and Problem Session I
8	M – Gene Expression I W – Gene Expression II R – Gene Regulation F - Exam 3 (Meiosis to DNA II)	17 17 18	Genetics and Problem Session II
9	M – Molecular Biology of Viruses W – Basic Biotechnology R – HOLIDAY (Thanksgiving) F - HOLIDAY (Thanksgiving)	19 20	Holiday - No Labs
10	M – Genomes I W – Genomes II R – Molecular Biology of Cancer F - Wrap-Up/Catch-Up	21 21 12, 18	Biotech & Gene Regulation* <i>*Requires 1-hour follow-up 24 hours after lab. Please review lab instructions and due-dates and plan accordingly.</i>

**Final exam: Friday, Dec. 13, 8:00 AM, NS 103**

Cumulative Portion (100 pts): Units 1-3; New Portion (100 pts): Unit 4

**Graded final exams will not be returned to students.**