

**Biology 111: Basic Biology**  
**Fall 2007**

**Location:** Room 210, Science Building      Room 147, School of Business  
**Time:** MW 2:00-3:20pm (Section 1)      T/Th 11-12:20pm (Section 3)

**Instructor:** Dr. Timothy Metz  
Associate Professor & Chairman of Biology  
112 Science Building  
893-1732  
893-1887 (fax)  
[metz@campbell.edu](mailto:metz@campbell.edu)

**Office hours:** M 11-11:45am; T 2-4pm; W 10-11:45am; F 10-11am

**Course web page:** <http://www.campbell.edu/faculty/metz/>

**Course Description**

An introduction to ecology, cell biology, energy relationships, reproduction, genetics, biotechnology and evolution, taught in accordance with the Statement of Purpose of Campbell University. (3 lecture hours per week; 3 lab hours per week; 4 credits)

**Course Prerequisites**

None

**Required course materials:**

- Audesirk, G., Audesirk, T., and Byers, B. 2007. Biology - Life on Earth. 8<sup>th</sup> Ed. Prentice-Hall, Inc., Upper Saddle River, NJ.
  - Note: you may purchase a hardcopy of this text (\$119 new; cheaper used) or purchase an online 1 year subscription to the text for \$59.67 at [www.safarix.com](http://www.safarix.com)
- Personal Response System wireless transmitter (PRS TX-02)
  - PRS transmitters must be registered online by 12pm Aug. 29<sup>th</sup> at [http://www.campbell.edu/PRS\\_Reg/](http://www.campbell.edu/PRS_Reg/)
- Tylka, J. and Thomas, M. 2007. Laboratory Investigations in Biology, 2<sup>nd</sup> ed. Copley Custom Textbooks.

**Course Objectives**

- To provide students with a Christian worldview of the biological sciences
- To promote a Christian ethic with regard to environmental and biological issues
- To foster critical thinking and rigor in the use of intellectual skills
- A student completing BIOL111 with a passing grade will be able to:
  - Distinguish between science and pseudoscience
  - Explain and identify ecological relationships between living organisms
  - Explain the roles of the abiotic environment in an ecosystem
  - Describe the structure and function of cells
  - Explain energy production and utilization by living cells and organisms
  - Explain the basic principles of genetic inheritance
  - Explain the role of genetics in health and disease
  - Describe the key technologies utilized in modern biotechnology
  - Explain the basic principles of evolutionary theory

**Grading:**

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

Examinations (4 @ 15% each)	60%
Laboratory	25%
In Class activities & assignments	10%
Attendance	5%

**Examinations**

There are 3 preliminary examinations, and a comprehensive final examination. Examinations are multiple choice type exams. Sample examinations can be viewed on the course webpage.

Attendance for the scheduled exam dates is expected, with the **only** exceptions being documented involvement in a Campbell University sports event, death in the family, court appearance or serious injury/illness requiring hospitalization or prescription medication. In any of these situations, notification of missing a scheduled exam must be given to the professor by 5pm of the day the exam is scheduled. No make up exam will be allowed if notification is given after that time. No makeup exams will be given for any other reason than those listed above. Exams missed for any other reason will result in the student receiving a zero on the exam in question. Missed exams will be taken on the official university makeup exam day, Friday, December 7<sup>th</sup>, 3pm. Students whose health or unexpected circumstances make it impossible for them to take the final exam may request an incomplete. They must, however, contact the instructors within twenty-four hours of the final exam and provide appropriate documentation. Students who are granted an incomplete must complete their work within 30 days of the start of the subsequent semester. In the absence of a request for an incomplete, student grades will be tabulated by assigning zeros for any missing exams.

**Laboratory**

Mastery of laboratory topics will be assessed through evaluation of laboratory worksheets and/or quizzes. The laboratory grade you receive is determined by your laboratory instructor and submitted to your lecture professor for incorporation into the overall course grade. Laboratory is worth 25% of your final grade. A student must receive a passing grade (60% or better) in laboratory to receive credit in the course.

**In Class Activities & Assignments**

Activities include assigned and in-class exercises, and responding to in-class questions using the GTCOCalcomp Personal Response System (PRS). Some activities will require written work to be submitted at the end of the class period, or at the onset of the subsequent class period. Students absent for in class activities may not necessarily have the opportunity to make up the missed work, depending on the nature and timing of the activity. Therefore, regular attendance is essential for a good activity grade. Students unable to respond to PRS questions (due to absence, or failing to bring their PRS responder to class) will not be able to make up the missed work.

## Course Attendance Policy

Campbell University maintains a class attendance policy, which is described in the Student Handbook. I reserve the right to implement Campbell's attendance policy.

The attendance portion of your grade will be calculated as a percentile based on the number of lectures attended out of the total number of lectures during which attendance is taken. Students exceeding the maximum number of allowed absences (>15% of scheduled class periods) will receive a grade of "zero" for their attendance grade. Students who misrepresent their attendance, or the attendance of a classmate will receive a grade of "zero" for their attendance grade. Students with *excused* absences (described in the Institutional Class Attendance Policy) may be allowed to make up missed work, provided it can be facilitated (for some types of lecture and/or lab exercises, make up work is not possible). Excused absences will not result in a penalty to your attendance grade, provided that written documentation of the activity is provided in advance of the absence, however, excused absences are included in the total number of absences in consideration of receiving course credit. **INFORM ME PRIOR TO CLASS IF YOU NEED TO LEAVE CLASS EARLY.**

Attendance is documented through use of the PRS system. Students who arrive late to class, or leave early from class may miss the scheduled PRS questions, and will be counted as absent. Students failing to have their PRS responder with them will be counted as absent.

### Laboratory attendance

The Campbell University attendance policy applies. Students absent for 2 lab sessions will earn a grade of "F" as their laboratory grade. A student must receive a passing grade (60% or better) in laboratory to receive credit in the course.

## Students with disabilities

Students with documented disabilities who desire modifications or accommodations should contact the office of Student Support Services located in the University's Hight House.

For disability and tutoring services, contact:  
Laura Rich, Director of Student Support Services  
Hight House, 180 Main Street  
910-814-4364, or [richl@campbell.edu](mailto:richl@campbell.edu)

Website: [http://www.campbell.edu/sl/student\\_services/index.html](http://www.campbell.edu/sl/student_services/index.html)

## Integrity and Class Conduct

All students are subject to the academic integrity and behavioral expectations of the University. These expectations are described in the Student Conduct section of the Student Handbook..

Matters of cheating, plagiarism, and misrepresentation will result in a grade of "zero" on the assignment or test in question, and those involved will be referred to the proper administrative authorities for disciplinary action, which can result in a grade of "F" or "FX" in the course, and the possibility of expulsion from school.

Personal conversations and other disruptive behavior will not be tolerated. Students who are being disruptive will be asked to leave. Eating, drinking, and smoking are not permitted in the classroom. Students arriving late to class should quietly find a seat one of the side aisles, and pick up any handouts after class.

### Cell Phone, Imaging, or Audio use on Campus

In any building or structure on campus of Campbell University the use of cell phones with electronic imaging or audio equipment, is prohibited for any purpose other than making a telephone call.

Further, the use of cell phones, or any other electronic imaging or audio equipment, is prohibited in all classrooms, restrooms, bathrooms, and locker rooms on the campus of Campbell University.

### Inclement Weather Policy

Campbell University maintains an inclement weather policy to address adverse weather conditions. The policy is stated on page 63 of the student handbook. Radio (**WCCE - 90.1 FM**), television (**WTVD-Durham Channel 11, WRAL-Raleigh Channel 5, WNCN-Raleigh Channel 17, WRDC-Raleigh/Durham Channel 28**), the Campbell webpage, and a telephone hotline (*on campus dial 5700; local, but not on campus, dial 910-814-5700; long distance, 1-800-760-8980*) are used to relay information concerning cancellation of classes due to inclement weather.

Additional inclement weather information for this course (if conditions allow me to make these changes)

1. My voicemail recording may be updated to include any changes/cancellations to the lecture/lab schedule.
2. The course webpage may have information regarding changes/cancellations to the lecture schedule.

### Study resources

- The course web page (<http://www.campbell.edu/faculty/metz/>) offers several study resources, including lecture outlines, study guides, sample examinations, and links to other relevant sites.
- Some resources are password protected to protect intellectual property rights and copyrights.
- For password protected materials: **User name: tmbio111 password: twins**
- Student Support Services (Hight House, 180 Main Street, 814-4364) offers free tutoring, study skills information, and seminars on study skills, test taking, time management, and test anxiety as well as assessments and consultation for suspected learning disabilities.

## Biology 111 Laboratory (Biology 111L)

Attendance: Laboratory attendance is mandatory and students are expected to attend their scheduled laboratory period. If a laboratory is missed **for a legitimate reason** (see above), it will not be counted as an absence IF satisfactory provisions are made with the laboratory instructor to make up the work. A laboratory must be made up BEFORE the preparations for the week's work have been dismantled. This means that the lab must be made up before the last scheduled lab for the week. Procedures and policies regarding making up laboratory work will be covered with you during the first laboratory period of the semester. Students who miss (and do not make-up) two laboratory sessions will earn a grade of "zero" for the laboratory component of their course grade. **A STUDENT MUST RECEIVE A PASSING GRADE (60% OR BETTER) IN LABORATORY TO RECEIVE CREDIT IN THE COURSE.** Therefore, if you FAIL lab, you FAIL the course!

Scheduled labs: Monday: 2:00-4:50pm; 5-7:50pm  
 Tuesday: 8-10:50am; 11am-1:50pm; 2-4:50pm; 5-7:50pm; 6-8:50pm  
 Wednesday: 11am-1:50pm; 2-4:50pm; 5-7:50pm

### Biology 111 Laboratory Schedule

*Labs do not meet the 1<sup>st</sup> half-week of school, the week of midterm break, and the week of Thanksgiving break*

<u>Lab</u>	<u>Laboratory topic</u>	<u>Lab manual page</u>
1	Scientific method	1
2	Ecology lab 1	9
3	Ecology lab 2	23
4	Microscope	33
5	Cell structure	47
6	Physical factors	57
7	Photosynthesis	71
8	Respiration	81
9	Cell division	95
10	Genetics	111
11	Biotechnology	133
12	Evolution	149

Questions or issues pertaining to lab should be directed to:

Jacqueline Tylka, Biology Laboratory Manager  
 Room 204 Science Building  
 Phone: 893-1932  
 Email: tylkaj@campbell.edu

Biology 111  
Lecture schedule (2 sessions per week)

<u>Session</u>	<u>Topic</u>	<u>Reading</u>
1	Introduction; Scientific methodology	Chapter 1
2	Scientific methodology, cont.	
3	Ecosystems	Chapter 29
4	Population growth	Chapter 26
5	Community Interactions	Chapter 27
6	Community Interactions, cont.	
7	How ecosystems work	Chapter 28
8	<b>EXAM 1 (chapters 1, 26-29)</b>	
9	Atoms, molecules, and life	Chapter 2
10	Biological molecules	Chapter 3
11	Cell structure & function; Cell membranes	Chapters 4, 5
12	Energy flow in cells	Chapter 6
13	Photosynthesis	Chapter 7
14	<b>EXAM 2 (chapters 2-7)</b>	
15	Respiration	Chapter 8
16	DNA: The molecule of heredity	Chapter 9
17	Gene expression & regulation	Chapter 10
18	Gene expression & regulation, cont.	"
19	Cellular reproduction	Chapter 11
20	Inheritance	Chapter 12
21	Biotechnology	Chapter 13
22	Biotechnology, cont.	"
23	<b>EXAM 3 (chapters 8-13)</b>	
24	Principles of evolution	Chapter 14
25	How organisms evolve; The origin of species	Chapters 15, 16
26	The history of life	Chapter 17
27	Systematics, concluding remarks, evaluations	Chapter 18