

**Instructor Addresses:**

R. Meicenheimer	office: 358 Pearson Hall	email: meicenrd@muohio.edu
Botany	phone: 529-7012	hours: MW 1:00-4:00 or by appt
J. Carlin	office: 48 Pearson Hall	email: carlinjm@muohio.edu
Microbiology	phone: 529-5426	hours: TWR 9:00-10:00
B. Steinly	office: 108 Pearson Hall	email: steinlba@muohio.edu
Zoology	phone: 529-5732	hours: MW 12:00-1:00
		TR 11:00-11:45

**Lecture Schedule:**

Date	Topic	Campbell <i>et al.</i>	Morris- Hooke
Week 1	-----		
1-12	Methods and Concepts in Biology	ZOO	Ch. 1
	<b>I. Biological organization is based on fundamental laws of chemistry.</b>		
	Chemical Foundations for Cells	ZOO	Ch. 2,3
	Carbon compounds in cells	ZOO	Ch. 4,5
	Lab 1. Cell Structure - Microscopy		
Week 2	-----		
1-19	<b>No Monday class</b> – Martin Luther King Day		
	Enzymes	ZOO	Ch. 6, p. 96-103
	<b>II. Cells are the basic unit of life.</b>		
	Cell Structure and Function – An overview	ZOO	Ch. 7
	Lab 2. Video on Mitosis and Meiosis		
Week 3	-----		
1-26	Membrane Structure and Function	ZOO	Ch. 8
	<b>III. The structure of genes and the way genetic information is encoded are fundamentally the same in all living organisms.</b>		
	DNA Structure and Function	MBI	Ch. 16
	DNA → RNA → Protein	MBI	Ch. 17
	Lab 3. DNA Fingerprinting		
Week 4	-----		
2-2	Gene Expression	MBI	Ch. 19
	Genetic Engineering and Biotechnology	MBI	Ch. 20
	<b>IV. Living Things utilize energy to maintain internal order and organization.</b>		
	Introduction to Metabolism	BOT	Ch. 6
	Lab 4: Microbial Metabolism		
Week 5	-----		
2-9	Photosynthesis Light Reaction	BOT	Ch. 10
	Photosynthesis Carbon Fixation	BOT	Ch. 10
	Aerobic Respiration	ZOO	Ch. 9
	Lab 5: Photosynthesis		
Week 6	-----		
2-16	President's Day (Mon.-Tues. Switch) (No classes)		
2-17	Aerobic Respiration (continued)		
2-18	<b>First Lecture Exam</b> – through photosynthesis		
	Aerobic Respiration	ZOO	Ch. 9
	Lab 6: Evaluating Information on Genetically Engineered Crops		
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Week 7	-----			
	<b>V. Organisms adapt to their environment through physiological mechanisms.</b>			
2-23	Eukaryotic vs. Prokaryotic Cells	MBI	Ch. 27	Ch. 4, 5
	Gram Negative vs. Gram Positive Bacteria	MBI		Ch. 4, 5
	Bacterial Growth and Development	MBI		Ch. 3
	Lab 7: Microbial Growth & Normal Flora Video.			
Week 8	-----			
3-1	Bacterial Attachment: Mechanisms and Mobilization	MBI		Ch. 6, 7
	Bacterial Pathogens: Virulence Factors	MBI		Ch. 8
	Plant Cells and Simple Tissues	BOT	Ch. 35, 38	
	Lab 8. <b>Midterm Lab Exam</b> and Plant seed for Lab 9.			
Week 9	-----			
3-8	Plant Body (root/stem/leaf)	BOT	Ch. 35	
	Primary and Secondary Plant Growth	BOT	Ch. 35	
	Plant Mineral Nutrition and Transport	BOT	Ch. 36, 37	
	Lab 9: Plant Cells and Simple Tissues			
Week 10	-----			
3-15	Spring Break (3-15 through 3-19)			
Week 11	-----			
3-22	Plant Reproduction (sexual and asexual)	BOT	Ch. 38	
	Plant Hormones	BOT	Ch. 39	
	Plant Responses to the Environment	BOT	Ch. 39	
	Lab 10: The Plant Body: Stems, Leaves and Roots			
Week 12	-----			
3-29	Homeostasis	ZOO	Ch. 40 p. 842-844	
3-31	<b>Second Exam-</b> aerobic respiration through plant responses to the environment.			
	Information Flow and the Neuron	ZOO	Ch. 48	
	Lab 11: Homeostasis			
Week 13	-----			
4-5	Integration and Control: Nervous System	ZOO	Ch. 48	
	Integration and Control: Endocrine System	ZOO	Ch. 45	
	Endocrine System	ZOO	Ch. 45	
	Lab 12: Vertebrate Anatomy			
Week 14	-----			
4-12	Sensory Reception	ZOO	Ch. 49, p. 1057-1075	
	Sensory Reception	ZOO	Ch. 49, p. 1075-1080	
	Muscle Contraction	ZOO	Ch. 49, p. 1080-1086	
	Lab 13: Cardiovascular Anatomy and Physiology			
Week 15	-----			
4-19	Circulatory System	ZOO	Ch. 42, p. 871-886	
	Circulatory System	ZOO	Ch. 42	
	Respiration	ZOO	Ch. 42, p. 886-897	
	Lab 14: Animal Development			
Week 16	-----			
4-26	Respiration	ZOO	Ch. 42	
	<b>VI. Living organisms reproduce and develop through an ordered sequence of steps.</b>			
	Principles of Reproduction	ZOO	Ch. 46	
	Development	ZOO	Ch. 47	
	Lab 15: <b>Final Lab Exam</b>			
Finals Week	-----			
5-3	<b>Final Exam</b> – at 5:30pm - covers Homeostasis through Development, plus synthesis of material from the entire course.			

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**Textbooks:**

The primary text is *Biology* (6<sup>th</sup> edition) by Neil A. Campbell, Jane B. Reece and Lawrence G. Mitchell, which should be shrink-wrapped with a CD-ROM to accompany *Biology*. You will need to purchase *Basic Microbiology for Biological Concepts* by Anne Morris-Hooke and *Laboratory Experiences for Biological Concepts* by DeVille, Morris-Hooke, Solomon and Wilson, both available at the Shriver Center bookstore.

**Grading System:**

The course grade will be based on the combined scores from two hourly lecture exams (150 points each, total 300), lecture assignments and unscheduled quizzes (100 points total), laboratory grade (300 points), and the final examination (300 points), for a total of 1000 points. Note that the laboratory accounts for 30% of the final grade, and will consist of 50 points for the mid-term exam, 50 points for the final lab exam, and 105 points for the lab reports. Finally, you must pass the laboratory section (with at least 180 points) in order to pass the course.

**Examination Schedule:**

- Examination 1:** Wednesday, February 18, 2004 (through photosynthesis, 13 lectures)  
**Examination 2:** Wednesday, March 31, 2004 (aerobic respirations through plant responses to environment, 15 lectures)  
**Final Exam:** Monday, May 3, 2004 at 5:30 pm  
(over last 9 lectures **PLUS** synthesis of the rest of the course)

**NOTE: NO early final exams will be given!** This is a University policy; please do not ask.

**Exams and Written Assignments:**

The exams will be a mixture of various types of multiple-choice questions. More information will be provided before the first exam. In addition, there may be unannounced “pop” quizzes given between each of the lecture examinations. Quizzes will consist of short-answer essay and/or objective questions. There will be some additional assignments made from time to time in lecture. These will be announced by your instructors and may involve some additional readings and/or short written assignments. The University grading scale will be followed.

**NO make-up exams** will be given unless the student has a valid excuse for the absence.

**Attendance:**

“Every student is expected to attend every class session for which the student is duly registered” (Student Handbook, sec. 701). **Students** are responsible for attendance at lectures during which a quiz or written assignment may be given. Oversleeping or studying for other classes are not acceptable excuses for missing class or an examination.

### Academic Dishonesty:

Academic dishonesty will **not be tolerated**. See the statements in the Student Handbook concerning academic dishonesty. As stated in the student handbook, students are expected to behave honestly in their learning because any form of cheating undermines the value of a Miami education for everyone. You are responsible for knowing Miami University's policy concerning academic dishonesty. Penalties will be enforced in accordance with the regulations as stated in the student handbook and range from grade reduction to suspension, dismissal or expulsion from the university. A lack of familiarity with Miami's policy or misunderstanding of what is considered appropriate and honest conduct will not be accepted as an excuse.

In particular, cheating on exams or on any written work will not be tolerated. Any written work that is handed in with your name on it must be your own original work. Plagiarism, submitting work purported to be your own where the ideas or wording are from another person or source (*e.g.*, another book or someone's reports or the World Wide Web), will not be tolerated. The minimum penalty for a first offense will be a zero in that portion of the course, in accordance with Miami's policy (see Student Handbook). While it is fine to discuss things with your lab mates, you should go into another room and composed and write your assignments or lab reports by yourself. If you and another student hand in work that is virtually identical (*i.e.*, contains identical or almost identical sentences or has all the same ideas expressed in the same order), that is not original work and handing it in with your name on it is dishonest and against Miami's policy. Moreover, if another student allows you to use his or her work, that student will also be guilty of academic dishonesty. Again, saying that you did not understand the definition of plagiarism or Miami University's policy on academic honesty is no excuse.

### Laboratory:

#### **NOTE: The laboratory IS MANDATORY!**

It is impossible to cover every topic mentioned in lecture in the laboratory. The best we can hope to do is illustrate some of the main concepts, and provide you with first-hand experience with manipulation of laboratory materials and equipment. We try to use and have available, live organisms whenever possible, but this is subject to availability from various suppliers, and will vary from year to year.

You **must** attend your assigned laboratory section. Attendance will be taken in laboratory sections during the first five minutes of the class and each unexcused absence will result in a 5-point reduction from the cumulative score. We expect that you will be on time for lab sections; excessive tardiness will result in being marked absent. Credit for make-up labs will **only** be given to those with a written medical excuse (on physicians letterhead stationary) or a family emergency such as a death of a family member (letter from a parent with their phone number required) and the excuse **must** be turned into Dr. Steinly within two weeks of your absence for you to get credit. If you are unable to attend lab on a particular week, you **must** contact Dr. Steinly **immediately** (before the scheduled laboratory) to schedule a make-up lab. Labs **must** be made-up during the week that they are scheduled. It is **your responsibility** to make sure that you contact Dr. Steinly. Speaking to the TA in charge of laboratory section is not sufficient: he or she is not able to reschedule you to make up the lab exercise you missed. Make sure that you are aware of Dr. Steinly's office number, email, and phone number (108 Pearson Hall; steinlba@muohio.edu; 9-5732) in case of illness or family emergency.

A number of laboratory exercises will be followed by written assignments. Turning in an assignment after the due date will result in loss of credit for each day that the assignment is late. Weekends are **not** exempt for this rule. Except where otherwise noted, each student will write his/her assignments independently. You **must** use your own results in laboratory write-ups unless instructed to use class data. In order to use your own data, you must be present when the data is collected. Therefore, TA's will not accept written work from students that were absent from the lab in which the experiment was conducted. Unexcused absences or failure to contact Dr. Steinly and make up the lab will result in a zero for the assignment for the lab missed.

The laboratory (Room 121 Pearson Hall) will be open on Thursday evenings from 6:00 to 8:00 PM for students wishing to do additional or review work. A teaching assistant will wait until 7:00 PM and if no students show up by that time, he or she is free to leave. This time is not intended to be used to make-up labs.

### **Resources:**

Additional assigned readings will be on electronic reserve. These materials will include the criteria for grading laboratory reports and the total number of points assigned for each section of the report. To access electronic reserve go to Miami University Home page and click on libraries. On the page that come up on the screen click "Reserves"; next page pull down menu to BMZ 116 and click on the go button. Select an assignment or item by clicking on a title in the list that is presented. The next page will ask for a password and that password is Solomon. Now you are free to examine the content of the selected item. Additional material may be put on reserve at the reserve desk at Brill Science Library in Hughes Hall. Statistical software will be on reserve in the Arts and Science Computer Lab (Upham Hall) and other sites listed by your instructors.

Meicenheimer maintains electronic information for Botany sections of BMZ 116 at <<http://www.cas.muohio.edu/~meicenrd/BMZ116/TBMZ116.htm>>. These resources include review copies of lecture images, dynamic lecture notes, and printable text versions of lecture notes. It is strongly suggested that you print the lecture notes prior to attending lectures.