

## Syllabus, Fall, 2005

### Course Description

The goal of General Biology is to introduce you to the basic principles of biology: cell biology, metabolism, genetics, molecular biology, and evolution. Biology 107 is designed for students majoring in biology or other life sciences. The material covered in this semester is the foundation for many other courses. Since most Biology 107 students are in your first college semester, Biology 107 also focuses on improving writing, study techniques, and problem solving.

Lecture sections meet three times each week. In lecture, the instructor will explain text material and answer student questions. Often, lecture quizzes will be given, usually covering material from the assigned reading. Attendance at lectures is required.

Laboratory sections meet for two hours once a week. Most laboratory meetings will begin with a quiz covering the assigned reading. Any assignments that are due in lab must be handed in before this quiz. In the laboratory, you will gather, analyze and present data. Some laboratory sessions are designed to practice problem-solving skills. Attendance in laboratory is required. Occasionally you may have to visit the laboratory outside of your scheduled class times.

### Textbook and Lab Manual

*Biology*, by Campbell and Reece.  
Seventh Edition.

Benjamin Cummings Publishing, 2005.

The textbook selected for use in this course contains an excellent bibliography at the end of each chapter. The references in it have been taken from published works, manuscripts and current journals with wide circulation and appeal. They can be of considerable help in understanding difficult concepts.

A Laboratory Manual must be picked up from the Biology 107 Lab Supervisor's Office (KC 219) prior to the first laboratory session. When you pick up the Laboratory Manual, you are required to pay a \$15 cash fee to cover the cost of laboratory materials.

### Exams, Labs, and Grading

There will be four one-hour exams and a two-hour final exam. All exams are comprehensive in that they build on previous material, but in general the one-hour exams will focus on material covered since the previous exam. Exams will include questions on laboratory material. The final exam will cover all areas of the course. The scores from examinations and lecture quizzes will contribute 75% of the final course grade. Specifics of examination format and coverage will be provided by your instructor.

The dates for the examinations are listed on the Biology 107: Fall 2005 Schedule. You are required to take the exams on the scheduled dates. If there is a legitimate reason for not taking an examination on the scheduled date, the instructor should be notified as far in advance as possible. Only under these conditions will a make-up exam be given. Otherwise, a grade of zero will be assigned for the missed exam. True emergency situations are rare, but if an emergency causes you to miss an examination, a legitimate excuse must be provided and a make-up exam will be given at the instructor's discretion.

Laboratory assignments will contribute 25% of the course grade. See the section on laboratory grades following the schedule for a more detailed breakdown of laboratory grades. Like missed exams, missed laboratory exercises will result in a grade of zero. It is not normally possible to make up lab work.

Laboratory activities are designed to illustrate the principles presented in the lecture and textbook and to provide experience in the experimental approach to scientific questions. It is important for you to read the laboratory materials before class begins so that you and your partners may begin work immediately. Most of the laboratory exercises will require a written report of the observations and interpretations. You must hand in your own lab report. Although data and conclusions may be the same within a lab group, the body of the report and any figures (tables and graphs) must be individual work. Any laboratory assignments that are turned in late will be assessed a penalty of at least 10% (one letter grade) per day.

Your final letter grade for the course is based on the following percentages of the maximum points possible:

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

Plus/minus grades will be given within the ranges above. There is no extra credit available in Biology 107.

### Web Page

News, announcements, class notes, and other course material are continuously updated on the course web site.

<http://faculty.evansville.edu/be6/b1075>

### Laboratory Reports and Portfolios

You must keep a laboratory portfolio in a three-ring binder which has been labeled, inside and out, with name and lab section. The lab portfolio should contain all previously graded lab assignments, along with evaluation sheets. You should use tabbed, labeled dividers to organize the material in your portfolio. Your lab manual, which provides all of the instructions for each lab, must be kept separately from your lab portfolio. Biology majors and other students plan-

ning to take upper-level biology courses are required to turn in their portfolios to Mrs. Akrabawi at the end of the semester. They will be returned to you in future biology classes.

Lab reports must be submitted in the lab portfolio and placed in the marked boxes for each lab section during the first five minutes of the lab period when they are due. Please take care of tasks like stapling, hole punching and assembling your portfolio before you arrive in lab. When grading your lab assignments, instructors will review your previous work. Errors that are repeated will result in loss of points for the assignment.

**Lab work will frequently be done in groups, but you are responsible for writing your own lab report. Sharing data is necessary, but sharing graphs, textual explanations and verbatim conclusions will be considered a violation of the University's honor code. Reports are graded by lab group and it is obvious when students copy each other's work. Do your own work!**

The Osmosis, Enzyme, and DNA Technology laboratory reports will be checked for originality by computer. This means that any use of uncited text or copying will be detected. In addition to turning in a paper copy of your work to the instructor, you must submit an electronic copy to <http://www.turnitin.com>. Your assignment will not be graded until the computer originality analysis is complete. Students are encouraged to visit the turnitin.com website for more information on this plagiarism prevention system.

When the lab portfolios are returned, an evaluation sheet will be attached. The purpose of this sheet is to explain both positive and negative aspects of the lab report. In general, evaluation of your lab report is as follows:

Grammar and Mechanics:	20%
Titles, Graphs and Tables:	20%
Introduction:	10%
Methods:	10%
Results:	20%
Discussion and Conclusions:	20%

These percentages are approximate and may differ from lab to lab, depending on the sections emphasized in each lab exercise. Sample evaluation sheets may be accessed on the course website and in the laboratory manual Appendix B.

### **Error Analysis**

Improving your writing skills is one of the major objectives of Biology 107. When you receive your evaluation sheet for the Osmosis and Enzyme lab reports, you may turn in an error analysis report in which you describe how you could correct the errors in your lab report. Students are strongly encouraged to complete an error analysis - this is a way to recover some of the points you may have missed. The analysis is due in lab one week after your lab report is returned. Your analysis must be typed and included in your portfolio behind its own tabbed, labeled divider. The course web site contains detailed instructions for error analysis.

If you need help expressing your thoughts in writing, visit the Writing Center (488-1125). Remember that the mission of the Writing Center is NOT to rewrite your paper. They want to help you learn how to write. Improvement usually requires several visits.

### **Supplemental Instruction**

Supplemental Instruction (sometimes called SI) is a nationwide program that facilitates student success in difficult courses. Upperclass biology majors will attend Biology 107 lecture sections and hold weekly help sessions to answer student questions. Research data demonstrate that regular attendance at SI sessions dramatically increases student grades. The Biology 107 staff strongly encourages *all* students to attend these sessions. Meeting times and locations for SI will be announced in class and posted to the course web site.

### **Expectations**

We hope that Biology 107 introduces you to the joy and excitement that may be found in the study of living systems. In order to make this a positive experience, you must be organized, prepared and attentive.

Disruptive behavior (e.g., talking during lecture) will not be tolerated. Cell phones and pagers are not allowed in lecture or lab.

Our role is to help you succeed in your studies. Take full advantage of opportunities and do not hesitate to seek help and advice from your instructors. Each instructor will provide you with office hours, but it is your responsibility to seek help when needed. Remember, your classmates are also a valuable resource in the learning process.

### **Honor Code**

We expect that you will abide by the University's honor code. This means that you will not give or receive unauthorized aid on examinations or assignments. The staff will explain how much collaboration among students is appropriate for lab assignments. When writing, all citations must be properly referenced. Do not use uncited text from any source, even with minor modifications. This constitutes academic dishonesty and will be detected and penalized harshly.

### **Reading**

All assigned reading is to be completed **before** class. When you are reading, read for understanding, and take notes. Text chapters should be completed before lecture. It is particularly important to complete laboratory reading before your lab section meets. Students who are not prepared for lab hinder the work of their lab partners and make it difficult for their group to complete the assigned tasks. Quizzes at the beginning of lab and lecture will give students the opportunity to demonstrate mastery of the assigned material.

### **Attendance**

Attendance at all class meetings is required. If you miss an assignment with an excused absence, contact your instructor at the next class meeting. Unexcused absence will result in a grade of zero for any missed work. Make sure that your travel plans for fall break, Thanksgiving and Christmas do not cause you to miss any classes or examinations, as these will be counted as unexcused absences.

This excused absence policy applies to athletes, musicians, and other students who need to miss class for competitions or performances. It is your responsibility to contact your instructor at least one week before each missed class period.

### Assignments

All assigned work must be turned in at the beginning of class, before the quiz. Late work will be assessed a penalty of at least 10% (one letter grade) per day late. When using computers for writing, data analysis, or presentation graphics, be sure to back up your data often and check the status of printing, file transfers, etc. before the last minute. Failure of technology does not constitute a valid excuse.

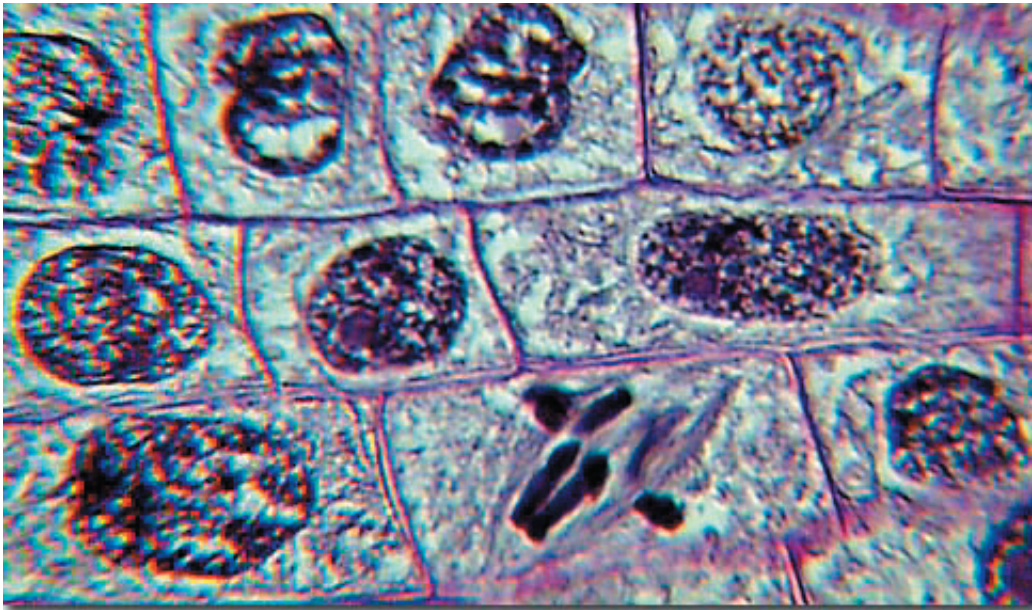
### Staff

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Mitosis in onion cells. (Molecular Expressions Gallery, 2001)

# Fall, 2005 Schedule

	Date	Lecture Topic	Text Reading	Lab Topic and Assignments (Assignments are due in lab)
Week 1	Aug 24	Introduction	Chapter 1	No labs this week.
	Aug 26	Chemical Context of Life	Chapter 2	
Week 2	Aug 29	Water	Chapter 3	<b>Lab 1: Tools for Biologists</b>
	Aug 31	Carbon	Chapter 4	
	Sep 2	Macromolecules	Chapter 5	
Week 3	Sep 5	Macromolecules II	Chapter 5	<b>Lab 2: Analyzing Scientific Data with Excel</b> Assignments from Lab 1 are due.
	Sep 7	Macromolecules III	Chapter 5	
	Sep 9	Introduction to Metabolism	Chapter 8	
Week 4	Sep 12	Metabolism II	Chapter 8	<b>Lab 3: Diffusion and Osmosis</b> Assignments from Lab 2 are due.
	Sep 14	Exam Review		
	Sep 16	<b>Exam I (100 points)</b>		
Week 5	Sep 19	Biological Membranes	Chapter 7	<b>Lab 4: Enzymes, Part 1</b>
	Sep 21	Cells I	Chapter 6	
	Sep 23	Cells II	Chapter 6	
Week 6	Sep 26	Cells III	Chapter 6	<b>Lab 5: Enzymes, Part 2</b> Osmosis Lab Report is due.
	Sep 28	Cellular Respiration I	Chapter 9	
	Sep 30	Cellular Respiration II	Chapter 9	
Week 7	Oct 3	Cell Communication	Chapter 11	<b>Lab 6: Enzymes, Part 3</b> Enzyme experiment preliminary Results section is due.
	Oct 5	Exam Review		
	Oct 7	<b>Exam II (100 points)</b>		
Week 8	Oct 12	Cell Cycle and Mitosis	Chapter 12	Fall Break, no labs this week.
	Oct 14	Meiosis and Fertilization	Chapter 13	
Week 9	Oct 17	Mendelian Genetics	Chapter 14	<b>Lab 7: Mitosis, Meiosis, Gametes and Genetics</b>
	Oct 19	Mendelian Genetics	Chapter 14	
	Oct 21	Inheritance	Chapter 15	
Week 10	Oct 24	Inheritance	Chapter 15	<b>Lab 8: Genetics Problem Solving Clinic</b> Assignments from Lab 7 are due.
	Oct 26	Molecular Inheritance	Chapter 16	
	Oct 28	Exam Review		
Week 11	Oct 31	<b>Exam III (100 points)</b>		<b>Lab 9: Enzyme Oral Reports</b>
	Nov 2	Transcription	Chapter 17	
	Nov 4	Translation	Chapter 17	

Schedule, continued.

Week 12	Nov 7	Microbial Models I	Chapter 18	<b>Lab 10: Bacterial Transformation</b> Written Protocol is due. Enzyme Lab Report is due.
	Nov 9	Microbial Models II	Chapter 18	
	Nov 11	Genome Expression	Chapter 19	
Week 13	Nov 14	DNA Technology	Chapter 20	<b>Lab 11: DNA Purification</b> Written Protocol is due.
	Nov 16	DNA Technology	Chapter 20	
	Nov 18	Exam Review		
Week 14	Nov 21	<b>Exam IV (100 points)</b>		Thanksgiving, no labs this week.
Week 15	Nov 28	Genes and Evolution	Chapter 23	<b>Lab 12: Predator / Prey Evolution</b> Transformation and DNA Purification Lab Report is due.
	Nov 30	Darwinian View of Life	Chapter 22	
	Dec 2	Speciation	Chapter 24	
Week 16	Dec 5	Speciation	Chapter 24	No labs this week. Assignments from Lab 12 are due.
	Dec 7	Reading Day		
	Dec 13	<b>Final Exam (50 points on Chapters 22-24 plus 100 points cumulative)</b>		

## Lab Grades

The lab portion of Biology 107 is worth 25% of the course grade. The individual assignments contribute as outlined in the table below. There is no extra credit available in Biology 107.

Weekly Lab Quizzes	40 points
Lab 1 Tools for Biologists	15
Lab 2 Excel	25
Lab 3 Diffusion & Osmosis	40
Lab 4, 5, 6 Enzymes	80
Lab 7 Mitosis, Meiosis, Gametes and Genetics	10
Lab 9 Oral Enzyme reports	20
Labs 10, 11 Transformation and DNA Purification	60
Lab 12 Predator/Prey Evolution	20
Lab Total:	270 points