

# **Biology 121 Syllabus and Statement of Course Policy**

Fall 2013 - Section 999 - Dr. Barnhart

## **PURPOSE OF THE COURSE**

Bio 121 is the first half of a two-semester introduction to the science of Biology. Bio 121 introduces cell and molecular biology, genetics, and evolution. The second semester course, Bio 122, covers biological diversity, physiology and ecology.

Biology 121 and 122 are designed for students who intend to take further courses in biology, including biology majors and minors, premedical students, wildlife majors, and others. *Most students who want a 1-semester science course to meet General Education requirements should take Biology 102, Survey of Biology, not Biology 121.* However, some non-biology majors do require Bio 121 (Computer Science, for example). If you are unsure whether you should be in this course, please consult with your academic advisor.

I feel that Biology is the most interesting and important of all human endeavors. I'm here because I think that helping you to learn is important and rewarding. I hope that you are here because you want to learn something! You should know that, for many students, this is not an easy course. I hope that you will find it challenging. If you are not challenged by your coursework, you are probably not learning very much. On the other hand, this should not be a terribly difficult course, provided that you make an effective effort. You will need to spend enough time studying, and use the time wisely. Some specific suggestions for study habits are listed in the "how to succeed" section.

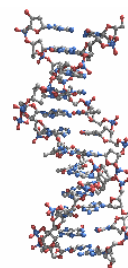
## **GENERAL EDUCATION GOALS:**

Bio 121 fulfills degree requirements in General Education. General Education courses are required of all students and are intended to help students make thoughtful choices that lead to creative and productive lives and to responsible participation in society. Realizing this goal requires breadth of knowledge and integration of information across disciplines. Accordingly, the goals of BIO 121 are to help you accomplish the following:

- To become engaged in the processes of scientific inquiry.
- To practice working collaboratively through laboratory studies and experiments.
- To develop the ability to present your work to others in an effective, clear and concise manner.
- To consider cultural and ethical issues concerning biological scientific knowledge, including biological evolution, applications of biotechnology and reproductive technologies such as cloning and stem cell research, and to critically examine your views concerning these topics.
- To understand the fundamental chemical and physical processes that are integral to life.
- To understand the organization of living systems and the flow of energy, materials, and genetic information through organisms and among organisms and the environment.

## **LECTURE:**

Section 999 ..... Meets MWF 9:40-10:30 PLAS 237  
Lecture Instructor: ..... Dr. Chris Barnhart  
Office: ..... Temple 219  
Office Telephone: ..... 836-5166  
Conference Hours: ..... M, T, W 1-2 and by appointment.





**Laboratory exams:** Laboratory exams: The laboratory exams consist of a midterm and final, each worth 50 points. The questions will include "practicals" that test your ability to use the methods and techniques that you have learned.

**Exam make-up policy:**

1. A student who has the LAB instructor's permission for missing a lab midterm or final exam may take a makeup examination ONLY during another lab period during the test week. Make-up is available only for those students who have a bona fide, documented reason for missing the exam. No student will be permitted to take the exam in another section without written permission from their lab instructor.

3. Students who fail to complete the exams for a legitimate reason will be given an incomplete ("I") grade for the course and must take those examinations during the next semester in which they are enrolled.

**"EXTRA CREDIT"**

There are two ways to get extra points. First of all, you will receive 1/2 point "attendance bonus" for each lecture that you attend. Over the whole semester this can add up to about 20 points. The purpose is simply to encourage and reward attendance. This is a carrot, not a stick. Don't expect to get a carrot if you don't attend or if you arrive late or leave early. The second way to get extra points is to correctly answer "bonus questions" on the exams. Details will be provided in lecture. NO other forms of extra credit are available for the lecture portion of the course.

**GRADING**

Total possible course points = 750 (500 lecture + 250 lab) as follows:

1	Lecture exams (4 @ 100 points @)	400
2	Lecture presentations	100
3	Laboratory reports and homework	125
4	Laboratory midterm	50
5	Laboratory final	50
6	Laboratory quizzes	45
	<b>TOTAL POSSIBLE POINTS</b>	<b>770</b>

Letter grades will be assigned based upon point totals as follows:

- A = 693 - 770 points (90 - 100%)
- B = 616 - 692 points (80 - 89.9%)
- C = 500 - 615 points (65 - 79.9%)
- D = 424 - 499 points (55 - 64.9%)
- F = below 424 points (below 55%)

Please note that the difference between an "A" and a "B" (or a "B" and a "C," etc.), may be only a single point. Make certain that you are given all of the points that you deserve. If you know that you are on the border line, put forth the extra effort to increase your score on the finals.

## **ACADEMIC INTEGRITY**

Any student cheating on an exam, helping someone else cheat, or participating in any other form of academic dishonesty, will receive a failing grade ("F") for the course. In cases of serious violations, academic probation or suspension is possible. It is your responsibility to read and fully understand the *Student Academic Integrity Policies and Procedures*, available at <http://www.missouristate.edu/provost/academicintegrity.htm>, and in abbreviated form in the *MSU Undergraduate Catalog*. Academic dishonesty includes but is not limited to the following:

- Looking on another student's answer sheet during a test, or allowing another student to look on your answer sheet during a test.
- Use of notes in any form during a test.
- Removing a test from the lecture room. (Practice tests are available and these may be studied, copied etc.).
- Describing laboratory exams to other students who have not yet taken the test.

## **HOW TO SUCCEED IN BIOLOGY 121**

1. Attend lecture and pay attention. Most test questions are taken from lecture. You cannot do well in the course without understanding the lecture material.

3. Be courteous toward your classmates and instructor. If you are distracted by others behavior during class, please report the problem to me. You may do this anonymously if you wish.

4. Make use of resources and opportunities. I will do several things to make life easier for you, but you have to take advantage of them. Use the practice exams. Visit the course web-site and download the lecture outlines, if you want these as an aid to note-taking. Later in the course, there will be extra-credit readings available to get bonus points on the final.

5. Don't fall behind. Science courses require that you learn a lot of new words. It's like learning a foreign language, only more difficult, because the ideas that the words describe are also new. If you fall behind, soon you can't understand what the instructor is talking about. Don't let this happen to you. Read ahead in the book to prepare for lecture. If you miss a lecture, be sure to get notes from a classmate and get caught up as soon as possible. Don't let a word go by without finding out what it means- your vocabulary is the measure of your education.

6. Ask questions. I really appreciate it when students ask questions during lecture. It helps me to know which points are confusing you, and it's good for my own attitude to know you are listening and thinking about what I'm saying. I don't mind telling you it's a little lonely to be the only person talking!

7. Use my conference hours. Please feel welcome to come in and ask questions during my scheduled conference hours, or ask quick questions after class. Make an appointment with me after class if my scheduled hours don't fit your schedule. I'll be glad to see you at these times. However, please don't just "drop in" or call at other times. Professors have many responsibilities, including research, writing grant proposals and articles, writing and grading exams, and working with graduate students. Little interruptions during the day can add up to a major headache!

8. Study effectively. Everyone develops their own habits, but here are some suggestions for studying:

- Read the chapters assigned for each lecture before class. Lecture makes more sense if you read ahead. The examinations include questions taken from the text as well as lecture.
- Attend lecture, and take good notes- download the overheads before lecture as a start on your notes if you wish.
- Soon after lecture, review your lecture notes and add notes as necessary from the text. Rewriting and organizing your notes is one of the best ways to study.
- Before each exam, review your notes, and study the practice exams to test your knowledge. At this point, many students benefit from studying in pairs or small groups.

### **Nondiscrimination:**

Missouri State University is an equal opportunity/affirmative action institution, and maintains a grievance procedure incorporating due process available to any person who believes he or she has been discriminated against. At all times, it is your right to address inquiries or concerns about possible discrimination to Jana Long, Equal Opportunity Officer, Office of Human Resources, Carrington 128, (417) 836-4252. Concerns about discrimination can also be brought directly to your instructor's attention, and/or to the attention of your instructor's Department Head.

### **Disability Accommodation:**

To request academic accommodations for a disability, contact Kathyne Staeger-Wilson, Disability Services (<http://www.missouristate.edu/disability>), Plaster Student Union, Suite 405, (417) 836-4192 or (417) 836-6792 (TTY). Students are required to provide documentation of disability to Disability Services prior to receiving accommodations. Disability Services refers some types of accommodation requests to the Learning Diagnostic Clinic, which also provides diagnostic testing for learning and psychological disabilities. (A fee is charged for testing.) For information about testing, contact the Learning Diagnostic Clinic (417) 836-4787; <http://psychology.missouristate.edu/lcd/>.

### **Policy on Use of Cell Phones in Classes (Office of Academic Affairs)**

When cell phones or pagers ring and students respond in class or leave class to respond, it disrupts the class. Therefore, use of cell phones, pagers, or similar communication devices during scheduled classes is prohibited. All such devices must be turned off or put in a silent mode and cannot be used during class. Sanctions for violation of this policy are determined by the instructor and may include dismissal from the class. In testing situations, use of cell phones or similar communication devices may lead also to a charge of academic dishonesty and additional sanctions under the Student Academic Integrity Policies and Procedures. There are two appeal processes available to students. A sanction for class disruption may be appealed using the appeal process stated in the Class Disruption policy; however, a violation that involves a charge of academic dishonesty must be appealed using the process described in the Student Academic Integrity Policies and Procedures. Students have the right to continue attending class while an appeal is in progress.

### **Dropping a Class:**

It is your responsibility to understand the University's procedure for dropping a class. *If you stop attending but do not follow proper procedure for dropping, you will receive a failing grade and will be obligated to pay for the class.* The refund for dropped classes is reduced by 25% on 8/24, 8/31, 9/17, and drops to zero on 10/17. Classes may be dropped online through the My Missouri State system or in person at the Office of the Registrar with appropriate identification. No drops or withdrawals are allowed after the stated deadline to drop a class. University athletes must process all registration and Change of Schedules in the Achievement Center for Intercollegiate Athletics, Forsyth Athletic Center 239. Students who have a hold which prevents using the

web registration system can visit the Office of the Registrar in person, fax a signed registration form, or send an email to [registrar@missouristate.edu](mailto:registrar@missouristate.edu) from their University email account. Classes may be dropped with a “W” grade from the end of the Change of Schedule period until November 9, after which time students may not drop. Be sure to talk to your advisor before deciding to drop a class.

## SCHEDULE

Week	Date	Day	Topic	Text Reading Assignment
1.	8/19	M	Course introduction, scientific method	Chapter 1.3
	8/21	W	Nature of life	Chapter 1.1-1.2
	8/22	F	Structure of matter, chemical bonds	Chapter 2.1-2.2
			<i>LAB: Introduction, spectrophotometry</i>	
2.	8/26	M	Water	Chapter 2.3
	8/28	W	Organic chemistry	Chapter 3.1-3.2
	8/29	F	Carbohydrates and lipids	Chapter 3.3-3.4
			<i>LAB: Enzymes and reaction rates</i>	
3.	9/2	M	<b>Labor Day- no lecture</b>	
	9/4	W	Proteins and nucleic acids	Chapter 3.5, 3.6
	9/6	F	Energy and metabolism	Chapter 6.1, 6.2
			<b>LAB: no lab this week</b>	
4.	9/9	M	Energy and metabolism, continued	Chapter 6.3-6.4
	9/11	W	Cell structure	Chapter 4.1-4.5
	9/13	F	<b>EXAM 1</b>	
			<i>LAB: Microscopy &amp; Cells</i>	
5.	9/16	M	Membranes and transport	Chapter 5
	9/18	W	The Fire of Life	Chapter 7
	9/20	F	Glycolysis and respiration	Chapter 7
			<i>LAB: Diffusion and osmosis</i>	
6.	9/23	M	Photosynthesis	Chapter 8
	9/25	W	Photosynthesis, continued	Chapter 8
	9/27	F	Cell communication	Chapter 9, 10
			<i>LAB: Respiration and metabolic rate</i>	
7.	9/30	M	Information and DNA	Chapter 11
	10/2	W	Replication	Chapter 11
	10/4	F	Transcription	Chapter 12.1-12.3
			<b>LAB: Lab Midterm</b>	
8.	10/7	M	Translation	Chapter 12.4-12.6
	10/9	W	<b>EXAM 2</b>	
	10/11	F	<b>Fall Holiday- no lecture</b>	Chapter 13
			<b>LAB: No lab this week</b>	

9.	10/14	M	Gene regulation	Chapter 14
	10/16	W	Mutation, DNA repair, cancer	Chapter 15
	10/18	F	Chromosomes, mitosis	
			<i>LAB: Electrophoresis</i>	
10.	10/21	M	Meiosis	Chapter 15
	10/23	W	Mendelian Genetics	Chapter 16
	10/25	F	Chromosomes and inheritance	Chapter 17
			<i>LAB: Mitosis and Meiosis</i>	
11.	10/28	M	Viral and prokaryote genomes	Chapter 18
	10/30	W	Eukaryote genomes	Chapter 21
	11/1	F	Developmental genetics	Chapter 19
			<i>LAB: Genetics</i>	
12.	11/4	M	Genetic technology	Chapter 20
	11/6	W	Genome sequencing, molecular biology, medicine	Chapter 20
	11/8**	F	<b>Exam 3</b>	
			<i>LAB: Transformation</i>	
13.	11/11	M	History of life	Chapter 22
	11/13	W	Evolution	Chapter 23
	11/15	F	Evolution, continued	Chapter 23
			<i>LAB: Population genetics</i>	
14.	11/18	M	Population genetics	Chapter 24
	11/20	W	Population genetics, continued	Chapter 24
	11/22	F	Species and macroevolution	Chapter 25
			<i>LAB: Phylogenetic Analysis</i>	Chapter 25
15.	11/25	M	Evo-Devo	
	11/27	W	<b>Thanksgiving Holiday – no lecture</b>	
	11/29	F	<b>Thanksgiving Holiday – no lecture</b>	
			<i>LAB: No labs this week</i>	
16.	12/2	M	Reconstructing phylogeny	Chapter 26
	12/4	W	Taxonomy and systematics	Chapter 26
	12/6	F	<b>Study Day- no classes</b>	
			<i>LAB: Final Lab Exam</i>	
Sec A	12/9	M	<b>FINAL LECTURE EXAM 8:45-10:45 AM</b>	

\*\* Friday November 9 is the last day to drop or withdraw from full semester courses

