

BIOL 101: Principles of Biology Syllabus

Fall Quarter 2005

Call #'s 01032, 01033, 01034, 01035 (5 credit hours)

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Office: 307-E Porter Hall; (740) 593-0742

Lectures: MTWTh, 3-4 PM, Porter 104

Labs: Porter Hall 300

Office Hours: 4-5 pm, T-Th; By appointment (please e-mail carterc3@ohio.edu)

Course Description:

This course covers the principles of cell biology, physiology, ecology, genetics, and evolution and is designed for non-science majors. Credit for this course is not allowed if the student has had or is taking BIOS 170, P BIO 110, or P BIO 114.

Topics Addressed:

This course addresses life, the characteristics and processes that distinguish living organisms from non-living entities, how we (scientists) study life, and how the biological processes of life work. A bottom-up approach will be used to explore living organisms. We start with the scientific method as this is the tool used for all scientists to study nature. Next, we take a look at evolution and the evidence supporting evolution. This will provide a basis for upcoming discussions on the classification of organisms and the origins of life from unicellular organisms to complex or later derived entities. Addressing the structure and function of cells provides the basis for understanding related chemical processes and how organisms acquire and use energy (respiration and photosynthesis). As we address growth and reproduction, special attention will be paid to DNA structure and function, the cell cycle, and mitosis and meiosis. This provides the groundwork for later discussions on Mendelian and population genetics, and the interaction of organisms with their environment (ecological processes). Every effort has been made to have the lecture topics correspond to weekly laboratory topics. (See course lecture schedule on last page for a break-down of topics and exam and assignment schedule.)

Course Materials:

Textbook Bioinquiry: Making Connections in Biology, 3rd ed. (2006) N. L. Pruitt and L. S. Underwood (required)

Laboratory Manual Biology 101 Laboratory Guide and Workbook, 4th ed. (2005) I. K. Smith and Z. Rinkes (required)

Please bring paper, pencil/pen, and textbook to each class.

Assessment and Grading:

The final course grade will be determined by summing the point values of two lecture exams, the final exam, four writing assignments, and the laboratory. Students must pass the laboratory portion in order to pass the class even if the student has a passing grade in the lecture. Any one missing an exam will receive a zero for that exam unless adequate proof of a legitimate absence as outlined in the Undergraduate Catalog is given (illness, death in immediate family, religious observance, jury duty, and involvement in University-sponsored activities). It is the responsibility of the student to contact the instructor to provide evidence of a legitimate absence, especially when the absence is foreseen (See Attendance Policy below). The final exam is scheduled for **FRIDAY, NOV. 18, 2:30 PM, PORTER HALL 104.**

Assigned point values are as follows:

Exam I	100 pts
Exam II	100 pts
Final exam	100 pts
Writing assignments (4 @ 25 pts each)	100 pts
Laboratory	100 pts
Total	500 pts

Grading scale:

90-93%, 94% +	A-, A
80-83%, 84-87%, 88-89%	B-, B, B+
70-73%, 74-77%, 78-79%	C-, C, C+
60-63%, 64-67%, 68-69%	D-, D, D+
≤ 59 %	F

Exams: Three exams will be comprised of short answer, essay, multiple choice, problem solving, and fill-in-the-blank questions. Each exam will come from material covered in class, corresponding book chapters as outlined in the lecture schedule, and any supplemental readings up to that point. Material may be derived from assigned book chapters even if it was not covered during lecture. The final exam, therefore, **is not** comprehensive. Questions will be incorporated into the lecture that will provide students with an idea of the type of questions to expect and overall exam structure. Exams will be structured as to assess comprehension and application of material. They will not assess memorization of facts even though knowing certain facts is a prerequisite to understanding at a level that allows for critical thinking and application. If a make-up exam is required per University excused absence, it may be a different and more difficult exam than what was provided to the students during the regularly scheduled exam (see in relation to 'attendance policy').

Assignments: Four "writing" assignments will be 1-2 pages in length and will focus on your personal experience relating to a biological concept or your reaction/opinion to/of a current hotly debated topic. Topics will be assigned in class and may be made available via Blackboard 1-2 weeks before the date due. Specific requirements for the papers/projects will also be discussed in class. Papers/projects will be collected at the beginning of the lecture class on the date due. Papers/projects received after class (4 pm) on the date due will be reduced by 5 pts and by an additional 5 pts on each consecutive day thereafter. Finally, if an absence is foreseen, the paper/project must be turned in prior to the date due (see in relation to 'attendance policy').

Laboratory: A separate laboratory syllabus will be provided to you at your first laboratory meeting. Criteria for grading for the lab section will also be reviewed at that time.

Extra credit: There will be no opportunities to earn extra-credit in this course. I believe that your time is better spent studying the course-relevant material (in this class and others). Time used for extra-credit is time spent away from studying/reviewing your notes and the text. Invest in what is important.

Blackboard: Access the **Blackboard Login** page at <https://blackboard.ohiou.edu>

Attendance Policy:

Daily attendance will be taken for each class. Even though attendance will not be figured into the final grade, it is highly recommended that students attend all classes as class time is organized around activities and discussions that draw from the diverse experience of the students.

In relation to missed exams and classes: I **require** that a written and signed note from a person in authority relative to the situation (i.e. coach, physician, dept. chair) be provided to me explaining the reason the student will be missing or has missed an exam per excused absence. For instance, if a student on an athletic team has a game scheduled for the same time as an exam, then a signed letter from the coach or sponsoring office explaining this would be acceptable. We would then discuss an appropriate time to reschedule the exam. Travel arrangements (previously scheduled or not) are not an acceptable excuse to miss or reschedule an exam. Make-up exams may be different and more difficult than what was provided to the students during the regularly scheduled exam. If a paper is due on a day that the student will be missing, then the paper must be turned in to the instructor prior to the date due. Again, any one missing an exam will receive a zero for that exam unless adequate proof of a legitimate absence as outlined in the Undergraduate Catalog is given (illness, death in immediate family, religious observance, jury duty, and involvement in University-sponsored activities). Notification of all **foreseen absences** must be made evident to the instructor along with supporting documentation during the **first week of class (by Fri. Sept. 9)**. Students not clearing **foreseen absences** during the first week of class will receive a **zero** for that exam and will not be given an opportunity to make-up the exam if it is missed. It is the student's responsibility to acquire class material of missed classes from someone else in the class no matter whether the excuse was legitimate or not. I will not meet with students for the sole purpose of reviewing a lecture when a class was not attended.

Academic Dishonesty:

I expect that each student will be honest in all of their academic endeavors. All assignments and exams are expected to be an individual effort. However, any student caught cheating, plagiarizing (if in doubt, document your sources) or engaging in any form of academic misconduct as outlined in the Undergraduate Catalog will automatically fail the assignment, the course, and will be immediately referred to the Judiciaries.

Academic Freedom:

Students, instructors, and any invited speakers are encouraged to share their views and expertise in an academic setting without fear of retribution or malice. It is my intention to provide a safe, respectful, and optimal environment that promotes learning. Respect each other even if you do not agree.

Class Etiquette:

Again, it is my intention to provide a safe, respectful, and optimal environment that promotes learning. Yet in recent years, it has been recognized that the amount of talking during lectures across campus has increased. Students talking, whispering, reading the newspaper, or creating other disturbance during lecture not related to the activity at hand will be excused from class. Students committing a second offense will be referred to the Judiciaries. **Please turn off cell phones, pagers, and beepers before the start of class.**

Week	Date	Course Lecture Schedule Topic	Chapter
1	Sept. 6	SYLLABUS/BEGINNING DISCUSSIONS	
	7	EPISTEMOLOGY/SCIENTIFIC METHOD	Ch 1
	8	EVOLUTION (Natural Selection)	Ch 2
2	12	(Speciation)	
	13	(Patterns of Evolution—Evidence supporting Evolution)	
	14	BIODIVERSITY AND CLASSIFICATION OF ORGANISMS	Ch 9
	15	Writing Assignment I Due (Origins of Life)	
3	19	CELL THEORY	Ch 4
	20	(Fluid Mosaic Model)	
	21	(Cell Structure and Function)	
	22	(Diffusion & Osmosis) Review for Exam	
4	26	Exam I	
	27	BIOENERGETICS	Ch 10
	28	(Fats, Oils, Waxes, Carbohydrates)	
	29	(Human Nutrition)	
5	Oct. 3	RESPIRATION	
	4	(Glycolysis)	Ch 10
	5	(Krebs cycle)	
	6	Writing Assignment II Due (Electron Transport)	
6	10	PHOTOSYNTHESIS	Ch 10
	11	(Light-dependent Reaction)	
	12	(Light-independent Reaction (Calvin-Benson Cycle))	
	13	(con't) Review for Exam	
7	17	Exam II	
	18	DNA STRUCTURE AND FUNCTION	Ch 6
	19	(Transcription and Replication)	
	20	(Protein Synthesis)	
8	24	(Viruses)	
	25	CELL CYCLE	Ch 5
	26	(Mitosis)	
	27	Writing Assignment III Due (Meiosis)	
9	31	MENDELIAN GENETICS	Ch 3
	Nov. 1	(Law of Segregation)	
	2	(Law of Independent Assortment)	
	3	(Mutations)	
10	7	(Punnett squares and dihybrid crosses)	
	8	POPULATION GENETICS	Ch 8
	9	(Hardy-Weinburg)	
	10	Writing Assignment IV Due (Types of Selection)	
11	14	(Changes in Allelic Frequency)	
	15	Wrap-up	
		FINAL EXAM (FRIDAY, NOV. 18, 2:30 PM, PORTER HALL 104)	