

BIOL 101: Principles of Biology Syllabus

Spring Quarter 2006

Call #'s 00993, 00994, 00995, 00996 (5 credit hours)

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

Lectures: MTWF, 9-10 AM Porter 104

Labs: Porter Hall 300

Office Hours: 4-5 pm, M-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, the laboratory, and attendance. 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 **WEDNESDAY, JUNE 7 @ 10:10 AM, PORTER HALL 104.**

Assigned point values are as follows:		Grading scale:	
Exam I	100 pts	90-92%, 93% +	A-, A
Exam II	100 pts	80-82%, 83-87%, 88-89%	B-, B, B+
Final exam	100 pts	70-72%, 73-77%, 78-79%	C-, C, C+
Laboratory	100 pts	60-62%, 63-67%, 68-69%	D-, D, D+
Attendance	40 pts	≤ 59 %	F
Total	440 pts		

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. The final exam, therefore, **is not** comprehensive. Material may be derived from assigned book chapters even if it was not covered during lecture. 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').

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. **You must pass the laboratory in order to pass the course.**

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.

Attendance Policy:

Daily attendance will be taken for each class. Attendance constitutes 40 pts. of your final grade and 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. You will be allotted 2 excused absences from class no matter what the reason, but point reductions will begin when the third absence occurs as follows:

Missed days:	40 pts. total:
0-2	40 pts.
3	36 pts.
4	32 pts.
5	28 pts.
6	24 pts.
7+	0 pts.

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. 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. March 31)**. 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. Likewise, any student caught signing an attendance sheet or scanning an ID card for any other student except themselves will be subjected to the same discipline. This also includes leaving a class once a student has signed-in or scanned their ID card and has not stayed for the entire class.

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 given an initial warning. Students committing a second offense will be excused from class, will not be permitted to return to lecture, will **automatically fail the class** (receive a zero), and will be referred to the Judiciaries. I will not tolerate distractions that inhibit my presentation and/or the learning of other students. **Please turn off cell phones, pagers, and beepers before the start of class.**

Course Lecture Schedule				
Week	Date	Day	Topic	Chapter
1	Mar 27	Mon	Syllabus & Beginning Discussions	
	Mar 28	Tues	Scientific Method	pp. 5-17
	Mar 29	Wed	Evolution—Natural Selection	pp. 21-34
	Mar 31	Fri	Evolution—Speciation	pp. 34-49
	Apr 3	Mon	Evolution—Patterns of Evolution & Evidence supporting Evolution	pp. 49-59
2	Apr 4	Tues	Classification of Organisms / Prokaryotic vs. Eukaryotic Cells	pp. 253-273 pp. 98-105
	Apr 5 Apr 7	Wed Fri	Origins of Life & Endosymbiotic Theory Cell Theory	pp. 241-250 pp. 90-98
3	Apr 10	Mon	Cells—Fluid Mosaic Model of Plasma Membrane	pp. 105-106
	Apr 11	Tues	Cell Structure and Function of Organelles	pp. 101-105
	Apr 12	Wed	Cell Transport—Active & Passive including Diffusion & Osmosis	pp. 107-111
	Apr 14	Fri	Exam I	
4	Apr 17	Mon	Cell Cycle & Chromosomes	pp. 125-128
	Apr 18	Tues	Mitosis in Plant & Animal Cells	pp. 116-122
	Apr 19	Wed	Meiosis	pp. 123-125
	Apr 21	Fri	DNA Structure and Function	pp. 143-149
5	Apr 24	Mon	Replication	pp. 149-153
	Apr 25	Tues	Transcription and Protein Synthesis	pp. 153-163
	Apr 26	Wed	Mutations	pp. 166-171
	Apr 28	Fri	Mendelian Genetics	pp. 63-69
6	May 1	Mon	Laws of Segregation & Independent Assortment	pp. 72-73
	May 2	Tues	Punnett Squares and Dihybrid Crosses	pp. 70-75
	May 3	Wed	Characterizing Genetic Variation in Populations	pp. 212-237
	May 5	Fri	Exam II	
7	May 8	Mon	Bioenergetics	pp. 284-288
	May 9	Tues	Carbohydrates & Lipids	pp. 308-311
	May 10	Wed	Proteins	pp. 307-308
	May 12	Fri	Enzymes	pp. 279-283
	May 15	Mon	Respiration & 1 ST and 2 ND laws of thermodynamics	pp. 288-298 pp. 275-278
8	May 16	Tues	Glycolysis	pp. 288-292
	May 17	Wed	Krebs cycle	pp. 292-293
	May 19	Fri	Electron Transport	pp. 294-298
9	May 22	Mon	Plant Form & Function	pp. 412-421
	May 23	Tues	Sexual Reproduction in Plants	pp. 443-449
	May 24	Wed	Seeds and Fruits	pp. 447
	May 26	Fri	Photosynthesis	pp. 299-301
10	May 29	Mon	NO CLASSES—Memorial Day	
	May 30	Tues	Light-dependent Reaction	pp. 301-303
	May 31	Wed	Light-independent Reaction—Calvin-Benson Cycle & Photorespiration	pp. 304-306
	Jun 2	Fri	Wrap-up	

FINAL EXAM (WEDNESDAY, JUNE 7 @ 10:10 AM, PORTER HALL 104)