

Concepts in Biology
Biology 120, Spring 2002
T/Th 11:30-12:45

Professor: Dr. Kimran Miller

Office: Pierce 117 / Office hours: Thursday 12:45-1:45 and by appointment

Phone: 784-8397 (Joy Budensiek)

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Required texts (purchase at bookstore): Biology: Concepts and Applications, 4th ed.,
Cecie Starr, Wadsworth Publishing Co. 2000.

(purchase in lab): Laboratory manual for concepts in biology, 3rd ed.

Proposed lecture schedule

Jan 17	Introduction / What is biology? / What is life?	Ch. 1
Jan 22	Unity and Diversity of life / Science as a process	Ch. 1
Jan 24	Chemical context of life / Macromolecules	Ch. 2, 3
Jan 29	Cell structure and function	Ch. 4
Jan 31	Energy and why cells need it!	Ch. 5.1, 5.2, Ch. 7
Feb 5	The wonderful discovery of DNA	Ch. 12
Feb 7	Cell reproduction: mitosis	Ch. 8
Feb 12	Exam 1	
Feb 14	Cell reproduction: meiosis	Ch. 9
Feb 19	Mendel: relationship between reproduction and inheritance	Ch. 10
Feb 21	Evolution by natural selection	Ch. 16
Feb 26	Practical application: Phenotypes / mid semester evaluation	10.4-10.8
Feb 28	Diversity of life 1: Bacteria, viruses and protists	Ch. 20
Mar 5	Practical application: Antibiotics & bacteria vs. Aids	pg. 568-580
Mar 7	Exam 2	
Mar 11-15	**** Spring break!! ****	
Mar 19	Diversity of life II: Fungi and plants	Ch. 21.1, 22
Mar 21	Practical application: Why do leaves change colors?	Ch. 6
Mar 26	Diversity of life III: Animals	Ch. 23.1, 24
Mar 28	Population ecology	Ch. 39
April 2	Species interactions	Ch. 40
April 4	Exam 3	
April 9	Behavior: hormones / Development of behavior	Ch. 44
April 11	Feeding behavior	no reading
April 16	Communication	Ch. 44
April 18	Sexual selection	Ch. 44
April 23	Social behavior	Ch. 44
April 25	Ecosystems	Ch. 41
April 30	Catch up or wrap up	
May 3	Final exam, 2-5 pm	

All dates are tentative. We may spend more or less time on a given topic or introduce new topics.

Point distribution:

Lecture exams	100 points each exam = 300 pts
Final exam	= 150 pts
Total	= 450 pts

Objectives:

1. improve the ability to think critically
2. obtain practical application of biological concepts
3. understand general concepts and unifying themes in biology

Honor code: The honor code should be adhered to in all aspects of this course. Your signature on all work completed in this course attests to your upholding the honor code.

Absences: There are no excused absences from lecture. The student may be absent four times without penalty. Additional absences will result in a grade reduction. There are no cuts allowed in lab. Students may only miss lab without penalty in cases of illness, family emergency or a school-sponsored event, which is cleared with the professor in advance. Students are responsible for all material that is covered in lab and lecture. When possible, students will be allowed to “make-up” lab material missed due to an excused absence, however, because of the nature of the lab material, actual “make-up” of missed activities is usually impossible. An unacceptable absence from the lab will result in a five point reduction in the final grade. Two unacceptable absences from the lab will result in a failure of the course. In all cases, the instructor will make the final decision regarding whether or not the absence is acceptable.

Missed tests: Ordinarily, tests cannot be made up, however, this is up to the instructor. If a student misses a test and the absence is acceptable, the missed test will not count for or against the student. If the absence is not excused, the grade will be a zero. Students are cautioned that any excuse for missing an exam will come under the severe scrutiny of the instructor. The instructor must be notified prior to the time of the exam, and the instructor makes the final decision regarding whether or not the absence is acceptable. Laboratory tests, which are missed for a reason that is excused, must be made up by the student. The instructor must be notified prior to the time of the lab test.

Religious holidays: Students must notify the instructor one week in advance if they intend to be absent for a religious holiday.

Tardiness: Three tardies equal an absence. The tardy student is responsible for notifying the instructor that she/he entered the classroom late, and therefore, was not absent. The instructor reserves the option to exclude the student from further classroom participation if the student is continuously tardy.

Lab Schedule
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Jan 22	Scientific Investigation
Jan 29	The Microscope; The Cell
Feb 5	Cellular membranes and transport
Feb 12	Cellular reproduction
Feb 19	Lab practical 1
Feb 26	Monera, Protista and Fungi
Mar 5	Photosynthesis
Mar 19	Plant diversity
Mar 26	Lab practical 2
April 2	Molecular biology
April 9	Behavior in brine shrimp and pill bugs
April 16	Behavior in Siamese fighting fish
April 23	Aquatic ecology
April 30	Lab practical 3