

Introduction to the Biological World 2

(BIOSC 0191)

Spring 2009 Syllabus

Faculty

Dr. Lesley Ashmore

Office Hours: Mondays 11 AM-12 PM or by appointment

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Dr. Brian Traw

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Teaching Assistant

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Class & Recitation

Monday and Friday 9 -10:50 AM 241 Crawford Hall

Lab

Wednesday 9 – 11:50 AM A146 Langley Hall

Textbook

The textbook required for this course is *Life: The Science of Biology* (2006) by David Sadava et al. 8th edition

Course objectives

The goal of this course is to provide students with an overview of biology, emphasizing the importance of genetics, development, evolution and ecology.

Final Grade

Final grades will be determined as follows: Exams (60%), Labs (25%), Recitation (10%), and Participation (5%). There will be four exams (3 midterms and 1 cumulative final), all equally weighted at 15% each. All students must take all exams and none of the exam grades are dropped. The laboratory grade will be comprised of laboratory reports, worksheets, and quizzes.

There will be no make-up examinations. If you miss one of the exams due to an excused emergency absence, your final grade will be based on the total points from the remaining exams. If you miss an exam due to an emergency (illness or serious injury or a death in your immediate family), you must submit, in writing, your request for an excused absence. Verbal communication with one of the instructors is not sufficient. Please use the following guidelines when preparing your request:

1. Your written request for an excused absence must indicate your name, the nature of the emergency, and the date of the examination that you missed.
2. Your request must be detailed, typed, and signed by you. This request must be given directly to either Dr. Traw or Dr. Ashmore no later than one week after the missed exam.
3. If you miss an exam due to a medical condition, you must include documentation. At the minimum, you must submit a signed letter from your physician.

Failure to comply with these guidelines may result in a zero recorded for the missed exam. No one will be excused from more than one exam. If you miss more than one examination you should discuss possible options available to you with your advisor or the CAS Dean's Office.

Late arrivals to exams will be given the exam during the time that remains for the designated examination period. Students who miss exams due to emergencies should pursue the G grade option (an incomplete) as detailed below.

Exam regrades

A student may request that the instructors regrade any portion of their graded examinations. The student must type out an explanation detailing the reasons for requesting a regrade. This request must be submitted to Dr. Ashmore or Dr. Traw by the end of class one week after the graded examinations are returned to the class. You are advised to consult the answer key and your text book prior to submitting your request.

G Grades

Students who wish to petition for a G grade (an incomplete) must submit to either Dr. Ashmore or Dr. Traw, in writing, a specific request for this grade change and you must document your reason(s). You will be required to make arrangements with the instructors for the specific tasks you must complete to remove the G grade. Remember that G grades, according to CAS guidelines, are to be given only when students who have been attending a course and have been making regular progress are prevented by circumstances beyond their control from completing the course after it is too late to withdraw (University of Pittsburgh Undergraduate Bulletin, 1999-2002, p. 29).

Laboratory Attendance

Attendance at the laboratory section is mandatory. If you miss a laboratory session and do not have a valid excuse, for each absence, 5% will be subtracted from your final lab grade. The only acceptable reasons for missing a laboratory session are illness, severe personal trauma, and (under exceptional circumstances) University business. If you need to miss a session for a valid reason, contact us before the session, if possible. If you have a valid reason, please provide us with appropriate documentation (e.g., a record of visitation to Student Health). For exams and lab assignments, you are responsible for any material missed as the result of any absences.

Laboratory Tardiness

You may arrive late to a laboratory session twice, by 15 minutes or less, with no penalty. If you arrive late a third or further additional time and do not have a valid excuse, for each late arrival, 1.5% will be subtracted from your final lab grade. If at any time you arrive late by more than 15 minutes and do not have a valid excuse, for each late arrival, 1.5% will be subtracted from your final lab grade. If you arrive more than one hour late for any laboratory session and do not have a valid excuse, that circumstance will be treated as though you missed the laboratory session completely (see Laboratory Attendance above). The only acceptable reasons for arriving late to a laboratory session are illness, severe personal trauma, and (under exceptional circumstances) University business. If you need to arrive late to a session for a valid reason, contact us about it before the session, if possible. If you have a valid reason, please provide us with appropriate documentation (e.g., a record of visitation to Student Health). For the practical exams, you are responsible for any material missed as the result of tardiness.

Students with Disabilities

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and Disability Resources and Services, 216 William Pitt Union, (412) 648-7890/(412) 383-7355, as early as possible in the term. DRS will verify your disability and determine reasonable accommodations for this course.

Academic Integrity

Students in this course are expected to comply with the University of Pittsburgh's Policy on Academic Integrity: Student Obligations. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy. Furthermore, no student may bring any unauthorized materials to an examination, such as dictionaries or a programmable calculator containing information specific to this course.

CLASS SCHEDULE

Day	Date	Topic	Reading	Faculty
M	Jan 5	Overview of the course Case study: The wisdom of the rabbis Mendelian Genetics: How is information inherited?	Ch. 10.1-10.2	Drs. Ashmore and Traw
W	Jan 7	Lab: DNA Extraction and Gel Analysis		--
F	Jan 9	What is the relationship between genes and chromosomes? How do genes interact? Solving problems and mapping in genetics	Ch. 10.3-10.4	Dr. Ashmore
M	Jan 12	<i>Recitation:</i> Setting and interpreting crosses Lecture: What is the evidence that the gene is DNA? What is the structure of DNA? How is DNA replicated?	Ch. 11.1-11.3	Dr. Ashmore
W	Jan 14	Lab: DNA genotyping and phenotyping		--
F	Jan 16	How are errors in DNA repaired? What is the evidence that genes code for proteins? How is DNA transcribed to produce RNA?	Ch. 11.3-11.4; 12.1-12.3	Dr. Ashmore
M	Jan 19	No Class – Martin Luther King Day		--
W	Jan 21	Lab: Bioinformatics and sequence analysis		--
F	Jan 23	How is RNA translated into proteins? How do viruses reproduce and transmit genes?	Ch. 12.4; 13.1	Dr. Ashmore
M	Jan 26	<i>Recitation:</i> Molecular biology problem solving. Lecture: How do prokaryotes exchange genes? How is gene expression regulated in prokaryotes?	Ch. 13.2-13.4	Dr. Ashmore
W	Jan 28	Lab: Disease Modeling in <i>Drosophila</i>-Initial Screen		--
F	Jan 30	<i>Recitation:</i> review for test 1- bring questions Lecture: Characteristics of eukaryotic genes		Dr. Ashmore
M	Feb 2	Concept Test #1 Lecture: Case Study: Smoking, tanning, cancer	Ch. 9	Dr. Ashmore
W	Feb 4	Lab: Disease Modeling in <i>Drosophila</i>-Behavioral screen		--
F	Feb 6	Lecture: How is cell division controlled?	Ch. 9	Dr. Ashmore
M	Feb 9	What happens during meiosis? How do animals reproduce sexually?	Ch. 9; 42.1-42.2	Dr. Ashmore
W	Feb 11	Lab: Disease Modeling in <i>Drosophila</i>-Identifying potential mutations		--
F	Feb 13	<i>Recitation:</i> Lecture: How do the male and female reproductive systems work? How can fertility be controlled?	Ch. 42.3-42.4	Dr. Ashmore
M	Feb 16	Case Study: The one-eyed cow How do organs develop?	Ch. 43.1-43.3	Dr. Ashmore
W	Feb 18	Lab: Disease Modeling in <i>Drosophila</i>-Confirming novel alleles, species comparison		--
F	Feb 20	<i>Recitation:</i> Controlling fertility Lecture: How does differential gene expression determine development?	Ch. 19	Dr. Ashmore

M	Feb 23	<i>Recitation:</i> Lecture: Biological Diversity I	Ch. 28 Appendix A	Dr. Traw
W	Feb 25	Lab: Field trip to Phipps Conservatory		--
F	Feb 27	Lecture: Biological Diversity II <i>Recitation:</i> review for Concept Test #2	Ch. 26.5, 27.5, 31.5, 32.4, 33.4	Dr. Traw
M	Mar 2	Concept Test #2 Lecture: Adaptation and natural selection	Ch. 22	Dr. Traw
W	Mar 4	Lab: Beanbag Evolution		--
F	Mar 6	<i>Recitation:</i> Virulence and disease Lecture: Natural selection and random drift	Ch. 22	Dr. Traw
M-F	March 9 - 13	Spring Break		
M	Mar 16	<i>Recitation:</i> AIDS Lecture: Systematics	Ch. 33.5 Ch. 25	Dr. Traw
W	Mar 18	Lab: An edible phylogeny of the tomato family		--
F	Mar 20	<i>Recitation:</i> Lecture: Speciation	Ch. 23	Dr. Traw
M	Mar 23	Lecture: Fossil Record	Ch. 21	Dr. Traw
W	Mar 25	Lab: Leaf tannins and microbes part #1		--
F	Mar 27	Lecture: Evolution and Development <i>Recitation:</i> review for Concept Test #3	Ch. 20	Dr. Traw
M	Mar 30	Concept Test #3 Lecture: Ecology and distribution of life	Ch. 52	Dr. Traw
W	Apr 1	Lab: Leaf tannins and microbes part #2		--
F	Apr 3	Lecture: Animal Behavior	Ch. 53	Dr. Traw
M	Apr 6	<i>Recitation:</i> Lecture: Population Ecology	Ch. 54	Dr. Traw
W	Apr 8	Lab: Arabidopsis and insects		--
F	Apr 10	Lecture: Community Ecology	Ch. 55	Dr. Traw
M	Apr 13	<i>Recitation:</i> Lecture: Ecosystem and Global Ecology	Ch. 56	Dr. Traw
W	Apr 15	Lab: Leaf tannins and microbes part #3		--
F	Apr 17	Lecture: Wildlife Conservation Biology <i>Recitation:</i> Final Exam Review- <i>bring questions for cumulative final</i>	Ch. 57	Drs. Traw and Ashmore

Final Exam
Saturday, April 25
10 – 11:50 AM, 241 Crawford Hall