

BIOLOGY 201B SPRING 2009 LECTURE SYLLABUS

Bozzolo/ Hedin/ Berta

MWF - NH 100, 12:00-12:50

<<http://blackboard.sdsu.edu>>

Course Objectives: This class will provide a basic introduction to the origins and diversity of life forms. Evolution is the underlying theme with emphasis placed on presenting diversity within a phylogenetic framework. General principles of biology are covered, as well as comparative structure, physiology, nutrition, circulation, gas exchange, reproduction, and development, including major evolutionary trends.

Student Learning Outcomes: *After completing this course, students should be able to:*

1) Explain the phylogenetic relationships and the structural and reproductive features of the major groups of life. 2) Recite the major biological processes and systems. 3) Summarize the significant ecological relationships of life. 4) Understand the nature of scientific research. ***Students will be assessed for the above skills by written exams, quizzes, and (in the laboratory) practicals and other assignments (to be discussed in lab).***

Instructors: This class is team-taught to provide expertise in the areas of 1) microbes, basal eukaryotes, fungi, “algae” and plants (Francis Bozzolo), 2) evolution & invertebrate animals (Dr. Hedin), and 3) vertebrate animals (Dr. Berta). **Dr. Hedin will coordinate the class and is responsible for all administrative duties (e.g., add/drop, discussion of course rules, etc.).** Questions regarding specifics of course content should be directed to the appropriate instructor. As noted below under **Final Grades**, questions regarding your final grade should be directed to **Dr. Berta**.

| <u>Instructors</u> | <u>Office</u> | <u>Office Hours</u> | <u>Phone</u> | <u>Email</u> |
|---------------------------|----------------------|----------------------------|---------------------|---------------------------|
| Francis Bozzolo | PS 253 | M 10-11, W 1-2* | 594-6916 | bozzolo@rohan.sdsu.edu |
| Dr. Marshal Hedin | LS 204F | Tues 11-1* | 594-6230 | mhedin@sciences.sdsu.edu |
| Dr. Annalisa Berta | LS 250 | MW 10-11* | 594-5392 | aberta@sunstroke.sdsu.edu |

*or by appointment

Required Printed Materials:

Biology (8th edition) by Campbell & Reece, Benjamin Cummings, New York, 2008 - available at Aztec Shops and KB books.

Laboratory Manual for Organismal Biology: an Evolutionary Approach (9th Edition) by M. Simpson et al., 2008 - available at KB books.

Lecture Expectations: Much of the material covered in lecture is also covered in the text (see lecture schedule), but most lectures will offer greater detail or cover material not in the text. Thus, please try to **attend all lectures**. Read the assigned material **prior to class**, as this will make lectures much easier to follow and fully comprehend. Do not talk or use cell phones during lectures- this is disruptive and discourteous to everyone else. Turn off cell phones and pagers during class. If you must leave before the conclusion of lecture, please do so quietly.

Blackboard: We will be using this online software system to make supplements and lecture material available, report grades, and contact you about various course issues. After you register for the course, please access Blackboard <<http://blackboard.sdsu.edu>> and check for messages and content. Further information will be provided in class.

Exams and Grading: Lecture exams and quizzes together are worth **274 points**, divided as follows:

Lecture Block #1 (Dr. Hedin) – one scheduled quiz (**24 points**).

Lecture Block #2 (Francis Bozzolo) – three scheduled quizzes (each worth **5 points**), the lowest of the three dropped. Quizzes to be announced in class at least one lecture before quiz, but not posted on Blackboard; one 50-minute exam (**68 points**).

Lecture Block #3 (Dr. Hedin) - one scheduled quiz (**10 points**); one 50-minute exam (**62 points**).

Lecture Block #4 (Dr. Berta) – one scheduled quiz (**10 points**) to be announced in class at least one lecture before the quiz, but it will not be posted on Blackboard; a comprehensive final exam (worth **90 points => 75 points** from the last third of the course, 3 from Hedin Evolution section, 6 from Bozzolo section, and 6 from Hedin Invertebrates section).

Lecture exams will include matching, multiple choice, fill-in, and/or short essay questions. Make-up exams will consist entirely of essay questions, and will be given for the first two exams only. You must contact the appropriate instructor no later than the day after the regular exam with a valid medical excuse to be accorded the privilege of taking a make-up. Answer keys will be posted after the exam on Blackboard. If you have questions about grading, please check the posted answer key beforehand. If you wish to have grading reconsidered, you must re-submit your original exam and clearly and specifically state your case in writing (to the instructor who gave the exam) within 7 days of receiving your graded exam; anything later will not be considered for re-grading. **No electronic devices (incl. iPods, CD players, calculators, etc.) may be used or worn during any exam!**

Letter grades will be assigned according to standard categories: A = 90-100%; B = 80-89.9%; C = 70-79.9%; D = 60-69.9%; F = <60%. The top and bottom 2-3% of each category might earn +/- grades depending on class distributions.

Lecture exams count 75% and lab work counts 25% of your total grade. [Laboratory grading and procedures are discussed separately in the lab by your TA.] You must attend both lecture and lab in order to obtain a grade in the course, except by explicit permission. **Failure to pass either the lecture or laboratory segment, regardless of your grade in the other part, will earn you an F for the course.**

Final Grades: Assignment of final course grades will be a joint decision by all three instructors. However, questions concerning your final grade should be directed to **Dr. Berta**.

Scantron Forms: You must bring one scantron form (#882ES) and a #2 pencil to each of the three lecture exams. Aztec and KB bookstores have these forms. For quizzes, please follow instructions from the instructor for that section.

Student Misconduct: We have a zero-tolerance policy for cheating of any sort. Any student caught cheating in this class, to whatever degree, will be reported to SDSU Judicial Procedures. At a minimum, the student will receive a “zero” on the particular exercise (exam, lab exercise, etc.).

Laboratory: A syllabus with information about the lab will be handed out in labs.

Help: If you are having trouble in the course please see the instructor or your TA as soon as possible. Attend office hours if necessary – these are provided for you to ask questions. The Advising Center and Counseling Services offer help with improving academic and test-taking skills.

Adding the Course: Go to the lab section you wish to add; attend and get on waiting list.

Changing Lab Sections: Go to the lab section for which you are currently enrolled; attend that lab; sign waiting list sheet for a change to another lab section; only go to the desired section if approved.

LECTURE SCHEDULE – SPRING 2009

Hedin / Bozzolo/ Hedin/ Berta

Mechanisms of Evolution – 5 lectures

Prokaryotes, basal Eukaryotes, Fungi, Plants – 12 lectures

Invertebrate Animals - 12 lectures

Chordate Animals – 13 lectures

| Week of: | Lecture Topic | Text Reading* | Lab Topic |
|----------|---|----------------------------------|--|
| I/23 | F Introduction, Evidence for Evolution | Ch 1: 12-18; Ch 22 | |
| I /26 | M Evolution of Populations I | Ch 23 | |
| | W Evolution of Populations II | Ch 23 | Lab 1: Evol & Syst |
| | F The Origin of Species | Ch 24 | |
| II/02 | M Phylogeny and the Tree of Life (Quiz: 30 points) | Ch 26 | Labs 2 & 3: Bacteria & Archaea, "Basal Euk" |
| | W Bacteria & Archaea | Ch 27 | |
| | F Evolution of Eukaryotes, Alveolates | Ch 28: 575-585 | |
| II /09 | M Stramenopiles, Reds & other basal Eukaryotes | Ch 28: 585-598 | Lab 3: "Basal Euk" |
| | W Fungi | Ch 31 | + Lab 8: Fungi |
| | F Fungi | Ch 31 | |
| II /16 | M Green Plants | Ch 29: 600-606 | Lab 4: Green Pls + |
| | W Land Plants | Ch 29: 606-610 | Lab 5: Vasc Pls |
| | F Vascular Plants | Ch 29: 610-617 Ch 35: 738-750 | |
| II /23 | M Seed Plants | Ch 30: 618-635 Ch 35: 751-754 | Lab #5: Vasc Pls + |
| | W Flowering Plants | Ch 30: 625-635 Ch 38: 801-819 | Lab #6 Seed Plants |
| | F Plant Resource Acquisition & Nutrition | Ch 36: 764-767, 772-784 Ch 37 | |
| III/02 | M Plant Growth | Ch 39: 824-844 | Lab #7: Fl. Plants |
| | W Exam 1: 62 points | | |
| | F Introduction to Animals | Ch 6: 121; Ch 25: 518-519; Ch 32 | |
| III/09 | M Invert Animal Diversity I (Porifera, Cnidaria,) | Ch 33 | Lab #9: Porifera, |
| | W Invert Animal Diversity II (Bilateria) | Ch 33 | Cnidaria & Basal |
| | F Invert Animal Diversity III (Lophotrochozoa) | Ch 33 | Lophotrochozoans |
| III/16 | M Invert Animal Diversity IV (Ecdysozoa) | Ch 33 | Lab #10: Molluscs |
| | W Invert Animal Diversity V (Deuterostomes) | Ch 33 | and Annelids |
| | F Invert Animal Reproduction (Quiz: 10 points) | Ch 46: 997-1003 | |

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| III/23 | M | Invert Animal Development | Ch 21: 445 – 447 ; Ch 47 | Lab #11: Ecdysozoa |
| | W | Principles of Animal Form & Function | Ch 40 | |
| | F | Invert Animal Feeding | Ch 41: 875-883 | |
| March 30 – April 3 Spring Break | | | | Lab #12: Echinodermata, Hemichordata, and Chordata |
| IV/06 | M | Invert Animal Circulation & Gas Exchange | Ch 42: 898-900, 915-919 | |
| | W | Invert Animal Nervous & Sensory Systems | Ch 49:1064-1065; Ch 50 | |
| | F | Exam 2: 62 points | | |
| IV/13 | M | Origin & characteristics of vertebrates | 698-705 | Lab #13: Craniata: the "Fishes" |
| | W | Fishes | 705-710, 901, 917-918, 1096 | |
| | F | Amphibians & the new conquest of land | 710-713, 959-960, 1000-1001 | |
| IV/20 | M | Amniota & the origin of the amniotic egg | 713-718, 860, 902, 1033 | Birch Aquarium field trip |
| | W | Macroevolutionary changes | 525-529 | |
| | F | Vertebrate development | 1024-1044 | |
| IV/27 | M | Vertebrate locomotion | 1105-1110 | Lab #14: Amphibia and Reptilia |
| | W | Origin of birds and flight | 718-720, 921, 958 | |
| | F | Animal behavior | Ch. 51 | |
| V/04 | M | Mammals: origins and adaptations | 720-726, 902-905, 921 | Lab #15: Mammalia |
| | W | Mammals: reproduction and thermal regulation | 860, 862-863, 959, 962-968, 1012-1013 | |
| | F | Human evolution | 726-733, 1010 | |
| V/11 | M | Fate of the Planet | 1190-1194, 1238-1242, 1248-1250, 1257 | Zoo field trip |
| | W | Review | | |
| | F | No class | | |
| V/18 | W | Final Exam: 90 points (10:30-12:30) | | |

- Text: **Biology** (8th edition) by Campbell & Reece, Benjamin Cummings, New York, 2008