

SYLLABUS FOR LS1.2

WINTER, 2008 TUESDAYS AND THURSDAYS 2PM - 3:15PM

Professor Greg Graffin

Email: graffin@ucla.edu

Office hours: Wed. 1-3 PM

Or by appt.

Slichter Hall 2847

phone: 310-825-7417

Lectures in La Kretz, RM. 110

Reading materials:

1. Textbook: Sadava, Heller, et al. 2007 Life, The Science of Biology, 8th edition
2. LS1 Demonstration Manual

TA'S:

Colin Rundel, crundel@ucla.edu

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Week 1

Lecture 1. Tues. JANUARY 8, 2008 Reading: Ch. 1 (pp 1-13)

Introduction to life science

Life, how to study it

How and why questions in life sciences

Evolution happens

What is life?

The pattern of life

Lecture 2. Thur. JANUARY 10, 2008 Reading: Ch. 11 (pp 232-237), Ch. 12 (pp 256-261; p264; 274-278), CH 24 (530-534).

What did Darwin discover and what do we know now?

Variation

Population genetics and the evolutionary synthesis

Molecular and genetic basis of heredity

Agents of evolution

Implications of evolution

Week 2

Lecture 3. Tues. JANUARY 15, 2008 Reading: Ch. 22 (pp 486-503)

Adaptation and natural selection

Agents of selection

Adaptation and fitness

Selection and variation, a paradox

Week 2 cont:

Lecture 4. Thurs. JANUARY 17, 2008 Reading: Ch.23 (pp 508-514), Ch. 25 (pp 542-548), Ch. 21 pp471-479; table 21.2)

Speciation

Races

Extinction

Patterns and causes

Week 3

Lecture 5. Tues. JANUARY 22, 2008 Reading: Ch. 25, Ch 24 (pp 536-539)

Systematics and classification

Taxonomy

Domains and Kingdoms

The species

Evolutionary analysis

What can DNA comparisons tell us?

Lecture 6. Thurs. JANUARY 24, 2008 Reading: Ch. 2 (pp20-30), Ch. 3 (pp 42-46; 49-50; 54-55; 57-60; fig. 3.28)

Life chemistry

Molecules of life

Life from non-life?

Two billion years B.C.

Announcement of midterm room

Week 4

**First Midterm Examination Tues. JANUARY 29, 2008
(Room TBA)**

Lecture 7. Thurs. JANUARY 31, 2008 Reading: Ch. 27 (pp 588-596)

Eukarya

Endosymbiotic theory

Cellular organization

Protista, some examples

Week 5

Lecture 8. Tues. FEBRUARY 5, 2008 Reading: Ch. 26 (pp 560-575)

Prokaryotes

Archaea and Bacteria

Cellular organization

Heterotrophs and autotrophs

Week 5 Cont:

Lecture 9. Thurs. FEBRUARY 7, 2008 Reading: Ch. 28 (pp 610-622), Ch. 29 (pp 630-635; 638-644)

Some aspects of plant evolution and diversity

Week 6

Lecture 10. Tues. FEBRUARY 12, 2008 Reading: Ch. 20 (pp 448-452), Ch. 31 (pp 682-687)

Cambrian explosion

Multicellular lineages

Origin of the metazoans

Lecture 11. Thurs. FEBRUARY 14, 2008 Reading: Ch. 30 (pp 650-654), Ch. 42 (pp 896-902)

Fungi

Reproduction and its evolutionary implications

Announcement of midterm room

Week 7

**Second Midterm Examination Tues. FEBRUARY 19, 2008
(Room TBA)**

Lecture 12. Thurs. FEBRUARY 21, 2008 Reading: Ch. 32 (pp 702-714), Ch. 43 (pp 920-927; 932-934)

Protostomes: arthropods and their kin

Animal development

Week 8

Lecture 13. Tues. FEBRUARY 26, 2008 Reading: Ch. 33 (pp 716-724; 730-735)

Deuterostomes and the chordates

Lecture 14. Thurs. FEBRUARY 28, 2008 Reading: Ch. 48 (pp 1024-1034), Ch. 50 (pp 1092-1100), Ch. 40 (pp 860-870)

Physiology

Breathing

Regulation of water and regulation of temperature

portion of it will emphasize material covered after the second midterm.

Makeup exams are NOT given. If you are unable to take an examination or have an illness or other emergency, you are responsible for contacting the Life Science Core Office. (LS Building, Room 2305, 825-6614) before the examination. You are required to have written verification regarding the illness or emergency.

If you feel that an error was made in the grading of your exam, submit your exam with a typed explanation of the issue stapled to the front of the exam to the Life Sciences Core Office by the Friday two weeks following the exam. Late regrades will not be accepted. Regrades will only be considered if the change in point value will change your final grade.

THE LIFE SCIENCES CORE OFFICE

For any administrative problems relating to this course, see Lily Yanez or Tracy Newman in the Life Sciences Core Office in Life Sci. Bldg. 2305, 825-6614. They will be able to assist you with copies of lecture handouts, scheduling difficulties, or other LS core class matters.

DEMONSTRATION SECTION AND THE QUIZZES

Demonstration section will last 2 hours each week. You are required to attend them and complete the quizzes and assignments given by your TA. During each of your section meetings (except week 1), there will be a quiz on that week's section material, drawn from the demonstration manual reading for that week, and on the previous week's demonstration. If you are not present for a lab you will not be allowed to make it up. No exceptions. There are no makeup points.

WEEK	DATE	ASSIGNMENT
1	Jan. 7 - 11	Research Tools and Techniques: Using the Library
2	Jan. 14 - 18	Natural Selection
3	Jan. 21 - 25	Horse Evolution: A Case Study
4	Jan. 28 - Feb. 1	The Microbial World
5	Feb. 4 - 8	Photosynthetic World: From Algae to Angiosperms
6	Feb. 11 - 15	Plants II: An Investigation in the Botanical Garden
7	Feb. 18 - 22	Fungi & Animal Diversity I: Sponges, Cnidarians, Worms
8	Feb. 25 - Feb. 29	Animal Diversity II: Molluscs, Arthropods, Echinoderms
9	Mar. 3 - 8	Animal Diversity III: Chordates
10	Mar. 10 - 15	Conservation of Biological Diversity