

BIOL 180 – Life Science for Elem. Teachers
 TR 4:20 – 5:35 PM, BIOS 244
 California State University, Los Angeles

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Course web page – MOODLE
<https://moodle.calstatela.edu/>

Lab Sections: BIOL 180 Lab (02) T 5:45 - 8:15 pm; ASCB-261: Dwight Beltz
 BIOL 180 Lab (03) Th 5:45 - 8:15 pm; ASCB-261: Dwight Beltz
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Spring 2012 Lecture Schedule

Date	Lecture Topic	Reading
APR 03	Course Introduction. What is science?	pp. 1-10
05	What is Life?	Ch. 1, Ch. 4.1- 4.5, Ch. 3.1-3.5
10	Classifying Living Things I	Ch. 15.1-15.3, 15.6-15.7
12	Classifying Living Things II	Ch. 18.1-18.2, Ch. 16
17	Classifying Living Things III	
19	Animal Life Cycles I	Ch. 8.2-8.4, Ch. 9.1-9.4
24	Animal Life Cycles II	Ch. 13.6-13.9, Ch. 31.1
26	EXAM #1	
MAY 01	Plant Life Cycles I	Ch. 17
03	Plant Life Cycles II	Ch. 33.1-33.4
08	Variation, Adaptation, & Natural Selection I	Ch. 14.1-14.3, Ch. 11.1-11.3
10	Variation, Adaptation, & Natural Selection II	Ch. 14.6-14.7
15	Variation, Adaptation, & Natural Selection III	Ch. 14.4-14.5
17	Variation, Adaptation, & Natural Selection IV	Ch.14.9-14.12
22	EXAM #2	
24	Evolution & the Tree of Life I	Ch. 14.13-14.14, Ch. 15.4-15.5
29	Evolution & the Tree of Life II	Ch. 18.7-18.12
31	Energy Flow in Communities I	Ch. 5.1-5.2, Ch. 19.1-19.2, 19.6-19.11
JUN 05	Energy Flow in Communities II	Ch. 20.1-20.2, Ch. 6.1, Ch. 7.1-7.4
07	Material Cycles in Ecosystems	Ch. 20.9-20.11 Ch. 22.1-22-8
12	EXAM #3: Tuesday, June 12	

Catalog Description:

BIOL 180: Life Science for Elementary Teachers (4). **Co-requisite:** **BIOL 181.** Primarily for students preparing for a multiple subject teaching credential, content/concepts of life science presented in the course correlate with the California State Science Standards. Lecture 2 hours, laboratory 3 hours.

Topics of this course include an introduction to the nature of science, cell biology, biological diversity, ecology, evolution, genetics, and human biology.

Professional Statements:

A. Vision, Mission and Conceptual Framework for Professional Preparation:

The Department of Biological Sciences is dedicated to providing a high caliber education in the disciplines of chemistry and biochemistry in an environment that encourages hands-on research participation by

students. The Department of Biological Sciences offers programs leading to Bachelor of Science and Master of Science degrees in Biology, and a Bachelor of Science degree in Microbiology.

B. Statement of Reasonable Accommodation

The Department of Biological Sciences faculty members fully support the Americans with Disabilities Act (ADA). The members of the faculty will provide reasonable accommodation to any student with a disability who is registered with the Office of Students with Disabilities (OSD) who needs and requests needed accommodation. The faculty may wish to contact the OSD to verify the presence of a disability and confirm that accommodation is necessary. The OSD will arrange and provide for the accommodation.

Reasonable accommodation may involve allowing a student to use an interpreter, note taker, or reader; accommodation may be needed during class sessions and for administration of examinations.

The intent of the ADA in requiring consideration of reasonable accommodation is not to give a particular student an unfair advantage over other students, but simply to allow a student with a disability an equal opportunity to be successful.

C. Student Conduct/Academic Honesty

Student Conduct: Student conduct is viewed as a serious matter by the faculty members of the Department of Biological Sciences. The faculty members assume that all students will conduct themselves as mature citizens of the campus community and will conduct themselves in a manner congruent with University policies and regulations. Inappropriate conduct is subject to discipline as provided in Title 5, California Code of Regulations (see student conduct: rights and responsibilities, and student discipline, CSULA General Catalog). Academic honesty is expected of all students in the department, in accordance with University policy. There are established University reporting procedures if a student is suspected of committing an academically act. For more information on the Academic Honesty policy, visit <http://www.calstatela.edu/univ/stuaffrs/jao/doc/ah.pdf>.

Students are required to conduct themselves in a professional manner during class. Cell phones, pagers and other electronic devices must be turned off during lecture. Late arrivals, side- discussions and other unprofessional behavior will be addressed at the instructor's discretion. Attendance will be recorded. Students returning from absences are advised to copy lecture notes from students in their study group.

D. Technology

Each student must:

1. Own or have ample access to a computer (ex. in CSULA computer labs, or at home or work)
2. Have general knowledge of operation and care of a computer, computer hardware/software, and be able to implement some basic troubleshooting techniques (ex. check connections, restart the computer, etc.)
3. Have an email account (available free of charge to all CSULA students)
4. Have a basic understanding of how to use the internet.

Students should anticipate that use of these skills will be integrated within courses in their programs. Students who fail to meet any of the above expectations are strongly advised to take an introductory computers course.

Student Outcomes – Content Standards and Performance Standards

This course provides an overview of the history and diversity of life on Earth from an ecological and evolutionary perspective. By the end of the course, students will be familiar with historical and current

biological concepts, representative examples of the diversity life, and basic evolutionary and ecological principles. Additionally, students will be introduced to systems ecology concepts (biomes, ecosystems, global ecology) and will understand how living and non-living components of the Earth's system interact, and how human activities are affecting biodiversity and Earth System processes. By exploring topics that range from the molecules of life to the complexities of an entire ecosystem, this course strives to provide students not only with enhanced content understandings, but also with understandings of how this content connects to the elementary school classroom.

Required Textbook: Johnson, G.J. (2010). **Essentials of the Living World**, 3rd Ed., McGraw Hill Publishers, NY (available both at the **campus bookstore** and **Student Book Mart, 1725 N. Eastern Ave, 323-262-5511**).

Other Requirements: Each student is expected to have an active Network (NIS) account so that materials can be accessed from the Internet and campus network. **Web and email** - Students will be expected to have web and email access. **The syllabus, lecture powerpoint files, study guides, and course announcements will be posted on MOODLE** <https://moodle.calstatela.edu/>

Drop Policy: Please see the schedule of classes for information. No exceptions will be made to the established University deadlines and policies.

Academic Honesty Policy: Students are expected to read and abide by the University's Academic Honesty Policy, which can be found at <http://www.calstatela.edu/academic/senate/handbook/ch5a.htm>. Students who violate this policy will be subject to disciplinary action, and may receive a failing grade in the course for a single violation

Exams: Lecture exams will be multiple choice and will require that you supply a Scantron form (#882-E). There will be THREE exams covering current lecture material. **THERE WILL BE NO MAKE-UP EXAMS DURING THE REGULAR TEN WEEK QUARTER.** However, if exam #1 or 2 is missed with a valid (for example, illness) and verifiable (for example, a signed note from a physician) excuse, you can make-up the missed exam with a cumulative final exam given during the second half of the regularly scheduled final exam session. This cumulative final exam will be taken only by students who have missed exams #1 or 2 with a verified excuse. **YOU MUST TAKE EITHER EXAMS #1-3 OR TWO EXAMS AND THE CUMULATIVE FINAL EXAM IN ORDER TO RECEIVE A GRADE IN THE COURSE.**

Policy Regarding Correction of Errors in the Grading of Exams: You have one week from the time that the lecture exams are returned to report errors in the grading of the scantron forms or discuss appropriateness of alternative answers.

Cell phones are not allowed to interrupt class; a 5-point deduction will be applied to any student whose cell phone interrupts class or lab. No electronic devices/headphones are allowed during exams.

Recording Lectures: You may bring audio recorders to the front to tape lectures if you desire. **No videotaping.**

Assessment Procedures

Your final class grade will be based on your total score out of **600** possible points. Half of your grade comes from the lab portion of the course. Grades will not be assigned until after the final exam, when all scores are available. You may estimate your grade at any time by calculating a percentage based on all possible points.

Grading: Final grades will be based on the following scale –
300 pts. Lecture grade = 3 X 100 pts lecture exams (25 questions @ 4 points per question)
300 pts. Laboratory grade (see laboratory syllabus for breakdown)

600 pts. total

<u>Grade</u>	<u>Minimum Percent</u>	<u>Total points (out of 600 possible)</u>
A	92	549-600
A-	90	537-548
B+	88	495-536
B	82	483-494
B-	80	477-482
C+	78	465-476
C	72	429-464
C-	70	417-428
D+	68	405-416
D	62	369-374
D-	60	357-368
F	<60	<356

Course Expectations: Regular attendance at lab and lecture are required. Missed labs cannot be repeated and missed lab quizzes and written assignments cannot be made up at a later date. If you anticipate missing a lab, please inform your lab instructor in advance. Adherence to lab safety practices is required (further safety information will be discussed in labs). In addition to the required lab manual, you may find it useful to bring your textbook to lab.

BIOL 180 – Life Sciences for Elem. Teachers (Laboratory)
 TR 5:45-8:15 PM, ASCB 261
 California State University, Los Angeles

Mr. Dwight Beltz
 dbeltz@cslanet.calstatela.edu
 Tel. 323-343-5555
 Office Location: ASCB-356
 Office hours: TR 3:40-4:10 PM



Spring 2012 Laboratory Schedule

Date	Tues	Thurs	Topic
Apr	03	05	Introduction / Syllabus Review
Apr	10	12	Hypothesis Testing /Plant Beans
Apr	17	19	Introduction to Biomes
Apr	24	26	Demography
May	01	03	Photosynthesis
May	08	10	Evolution
May	15	17	Genetics
May	22	24	Research Paper questions / Lab optional
May	29	31	Population Ecology
June	05	07	Harvest Plant Experiment / Statistical Analysis / Research Plant Papers due

Topic	Point Value
Introduction to Biomes	25
Demography	25
Photosynthesis	25
Evolution	25
Genetics	25
Population Ecology	25
Hypothesis Testing	25
Statistical Analysis	25
Research Paper	100

Total 300

Pre-Lab Preparations: A set of pre-lab instructions will be posted on Moodle several days prior to each lab exercise. These instructions will consist of procedures and terminology that must be understood prior to participating in the lab exercise each week. Students will be responsible for reviewing the pre-lab instructions each week.

Computer Based Exercises: The Demography, Photosynthesis, Genetics, Evolution and Population Ecology exercises will be performed using provided laptop computers. Students will manipulate variables in the simulations and observe the results. A series of questions will be answered that will assist in developing an understanding of the topic and the factors that can influence the outcomes.

Research Paper: This report will allow students to develop an in-depth knowledge of anthropogenic climate change. Additionally, students will gain an appreciation of various authoritative online resources that present different sides to the debate surrounding this subject.

Plant Experiment: The plant experiment will consist of growing string beans under sunny and shaded conditions to see if there are any differences between the two groups (i.e., height, number of leaves, number of fruits produced, etc.). A simple statistical analysis will be performed on the data to see if there are any real differences between the treatments. The results of the analysis will be graphed.