

BIOLOGY 3: Introduction to Life Science

Fall 2011

Instructor: Jason Furumoto

Office Hours: Arranged

Phone:

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Lecture: 74908 TTh 1800-2015

Lab: 74908 TTh 1800-2015

I. COURSE DESCRIPTION

- A. **Title:** Biology 3 – Introduction to Life Science
- B. **Prerequisite:** None – Must be able to transport oneself to field trips.
- C. **Summary:** This course is recommended for the non-biological science and pre-education majors. This is an introductory course using biological concepts. The organismal structure, function, inheritance, evolution, and ecology are covered. Field trips are required.
- D. Biology 3 is a four (4) unit course with 3 hours lecture and 2 hours laboratory each week.

II. COURSE OBJECTIVES

In the process of completing this course, students will:

- A. Read, analyze, evaluate, and discuss the scientific method, microscopy, the cell, and life's levels of organization.
- B. Learn the periodic table of elements, chemistry of the carbon atom, and the chemical structure of living organisms.
- C. Read appropriate scientific literature on classification of life.
- D. Learn the structure and function of the cell and organization of living organisms.
- E. Observe and document the structure and function of the human body by examining the organ systems: reproduction, respiration, circulation, excretion, and digestion.
- F. Review classical and molecular genetics and learn the process of replication, transcription, and translation.
- G. Perform experiments, make observations, and record data.
- H. Learn plant structure, physiology and interaction, including photosynthesis and aerobic respiration.
- I. Study evolution.
- J. Observe chemical and energy relationships.

III. REQUIRED MATERIALS

- A. **Text:** Mader, S. Essentials of Biology, custom, 2nd Edition, McGraw-Hill.
- B. **Text:** Storer, T., Usinger, R., and Lukas, D. Sierra Nevada Natural History, revised edition. University of California Press, 2004.
- C. Biology 3 Handouts, Spring 2009.
- D. Scantron form 886 (x6) and quiz strips.
- E. Email address. One can be obtained, free of charge, through the school.
- F. Biology drawing paper for lab plates.
- G. Camera for field trips.

IV. OPTIONAL, BUT RECOMMENDED

- A. Colored pencils, hard graphite (no flow pens or crayons).
- B. Trees of the Sierra Nevada, Field Card #4.

V. NO FOOD, BEVERAGE, OR WIRELESS PHONES.

- A. The functional concept here is to show respect to all others around you in all phases of this course, at all times.
- B. Be sure to always put relevant information on all papers to insure that you receive credit and do not incur deductions.

VI. ATTENDANCE

- A. You are expected to be on time for each class meeting.
- B. It is your responsibility to sign in when late and to confirm that an absence has been changed to a tardy.
- C. Three tardies will count as one absence.
- D. Any student missing more than ten total hours of class meetings will be dropped from the course, unless prior approval from the instructor is obtained.
- E. Students missing the first meeting of either the lecture or lab components of the course will be dropped.

VII. TESTS AND EVALUATIONS

- A. Grading:

Lab Exercises (~15 x 10 points each)	150
Lab Plate Drawings (7 x 10 points each)	70
Quizzes (13 x 10 points each)	130
Lecture Exams (5 midterm, 1 final exam x 100 points each)	600
Performance Art Projects (2 x 50 points each)	100
Photo Essay Project	100
<u>Total</u>	1150
- B. Grading Scale:
 - 100-90% - A
 - 89-80% - B
 - 79-70% - C
 - 69-60% - D
 - 59-0% - F

Course performance can be checked on webgrade via Blackboard through the Reedley College homepage at www.reedleycollege.edu. Your 7 digit student ID number is both your username and password. The 24/7 helpdesk address is: <http://d2.parature.com/ics/support/default.asp?deptID=8032> or you may call 1-866-401-7784. Click the webgrade link on the left hand side of the Blackboard screen and use the password that can be obtained from your instructor.

- C. Exams will be multiple format, including multiple choice, fill in, and short answer questions.
- D. Lab Exercise grades will be based upon your lab work itself. This will include questions, problems, or other work from any handout given during lab or the lab guide. Missed labs can be made up if you attend another section of the lab in the same week. It is at the convenience of the instructor of the lab you wish to attend to allow you to attend their lab. You must obtain that instructor's permission and give said instructor the relevant information to be able to receive credit for attending. Make up of a given lab cannot be done at a later date. No points will be earned for lab work if you were not present during the lab meeting.
- E. Quizzes will be given at the beginning of each lab period unless there is a lab exam scheduled or the previous week's activity was research or presentation oriented. Each quiz will cover the previous week's lab material and the introductory material from the current week's lab. Missed quizzes may not be made up.
- F. Lab plate drawings will be due at the beginning of the next lab. There will be approximately 7 plates collected throughout the semester and each will be graded on neatness and accuracy. Taking the time to pay attention to detail will be reflected in your points earned on each plate. One week will always be given to complete the lab plate. Drawings not on the required Biology drawing paper will not be graded.
- G. Make up exams will be in a format determined by the instructor and are always at the instructor's discretion. If you must miss on an exam date, please try to make prior arrangements. You have one week to make up a missed exam. After one week, no make ups will be given unless permission is explicitly given by the instructor.

- H. There will be three laboratory assignments requiring you to create with the knowledge you have gathered from this course. Two of these will be performance art projects which will be presented to the class during a laboratory period. The third is the photo essay project which will require you to travel into the mountains to conduct independent research. You will be responsible for your own transportation.
- I. Field trips: We will meet at the zoo during lab time one day instead of meeting on campus. We will also take a walking tour of the Kings' River.

VIII. OTHER INFORMATION

- A. Adds: If you are given an add slip, be sure to turn it into Student Services within two days of receipt. After two days, you will not be allowed to add the course with that add slip.
- B. Drops: You have until the end of Week 9 of the semester to drop. If you choose to drop, you are responsible to handle all procedures related to dropping the course. Do not assume you have been automatically dropped. After Week 9, California law mandates that all students enrolled in a course receive a grade for that course, regardless of attendance.

IX. HELP

- A. Please see your instructor if you are having any difficulty grasping the material presented during the course. In many cases, a few minutes of additional explanation can clear up many problems or points of disconnect.
- B. Additional help, study hints, or a tutor can be obtained from the Tutorial Center. Please do not hesitate to use this resource.
- C. As a general rule, each hour of lecture requires approximately 2-3 hours of additional study outside of the classroom each week and each hour of lab requires 1-2 hours of study time outside of the laboratory each week. This equals a minimum of 8 hours of study each week in order to pass this course, so plan accordingly. I have the sincerest hope that we have a fun semester and that you learn a lot of biology along the way. Good luck!

X. ACADEMIC DISHONESTY

- A. Students at Reedley College are entitled to the best education that the campus can make available to them and the responsibility to ensure this education is honestly attained is shared by the students and instructors. Academic dishonesty is a serious offense and will incur serious consequences. Refer to the Reedley College catalog for full details.

XI. ACCOMODATIONS

- A. Upon identifying themselves to the instructor and the college, students with disabilities will receive reasonable accommodation for learning and evaluation. Please contact me as soon as possible.

**Biology 3 – Spring 2012
Tentative Schedule**

Week 1 – Week of 1/9/2012

Lecture – Orientation, Syllabus, Ch. 1 – A View of Life, Ch. 2 – Chemistry
Lab – Microscope safety/use, Letter e slides

Week 2 – Week of 1/16/2012

Lecture – Ch. 4 - Inside the Cell, Ch. 8 – Cell Reproduction, Assign LP #1: Cell
Lab – Cheek/Onion Cells

Week 3 – Week of 1/23/2012

Lecture – Ch. 7 – Cellular Respiration/Fermentation, Ch. 6 – Photosynthesis
Lab – LP #1 Due, Mitosis Lab

Week 4 – Week of 1/30/2012

Lecture – Ch. 11 – DNA Biology and Technology, Exam 1 (Ch. 1, 2, 4, 7, 8, and labs)
Lab – Online Leaf Lab

Week 5 – Week of 2/6/2012

Lecture – Ch. 11 – DNA Biology and Technology, Ch. 9 – Sexual Reproduction, Assign LP #2: DNA
Lab – Photo Essay Research Lab

Week 6 – Week of 2/13/2012

Lecture – Ch. 10 – Patterns of Inheritance, Ch. 13 – Genetic Counseling, Ch. 14 – Evolution
Lab – LP #2 Due, Protein Synthesis and DNA Extraction

Week 7 – Week of 2/20/2012

Lecture – Ch. 15 – Microevolution, Introduction to Biological Change Project, Ch. 16 – Macroevolution
Lab – Genetics Worksheet

Week 8 – Week of 2/27/2012

Lecture – Ch. 16 – Classification, Ch. 17 – Viruses, Exam 2 (Ch. 6, 9, 10, 11, 13, and labs)
Lab – Dot Game

Week 9 – Week of 3/5/2012

Lecture – Ch. 17 – Prokaryotes and Protists, Ch. 18 – Fungi, Assign LP #3: Virus/Bacterium
Lab – Disease Lab

Week 10 – Week of 3/12/2012

Lecture – Ch. 18 – Plants, Assign LP #4: Alternation of Generations, Exam 3 (Ch. 14-17 and labs)
Lab – LP #3 Due, Biological Change Project

Week 11 – Week of 3/19/2012

Lecture – Ch. 19 – Invertebrates and Protostomes
Lab - LP #4 Due, Introduction to Pollination, Project – video

Week 12 – Week of 3/26/2012

Lecture – Ch. 19 – Deuterostomes, Ch. 22 – Animal Organization
Lab – Animal Diversity Lab

SPRING BREAK 4/2/2012 – 4/6/2012 – Classes reconvene 4/9/2012

Week 13 – Week of 4/9/2012

Lecture – Ch. 24 – Animal Digestion, Assign LP #5: Gastrointestinal Tract, Exam 4 (Ch. 17-19 and labs)
Lab – Carbon Footprint Lab

Week 14 – Week of 4/16/2012

Lecture – Ch. 23 – Animal Circulation, Assign LP #6: Heart, Ch. 24 – Animal Respiration and Excretion,
Assign LP #7: Nephron
Lab – LP #5 Due, Pollination project

Week 15 – Week of 4/23/2012

Lecture – Ch. 30 – Ecology of Populations
Lab – LP #6 Due, Photo Essay Project Due, Online Human Demography Lab

Week 16 – Week of 4/30/2012

Lecture – Ch. 31 – Communities and Ecosystems
Lab – LP #7 Due, River Walk

Week 17 – Week of 5/7/2012

Lecture – Ch. 32 – Biomes and Human Impacts on the Environment
Lab – Inconvenient Truth

Week 18 – Week of 5/14/2012

Exam 6 (Ch. 30-32 and labs)

