

## **BIOLOGY 1: PRINCIPLES OF BIOLOGY (55224)**

**Fall 2012**

Instructor: Jason Furumoto

Office Hours: By Appointment

E-mail: jason.furumoto@reedleycollege.edu

Lecture: T, TH 11:00-12:15 pm LFS C

Lab: Thursday 2:00-3:50 pm; LFS 11

### **I. COURSE OUTLINE**

- A. Course Structure:** 4 units, 3 weekly lecture hours, 2 weekly laboratory hours
- B. Prerequisite:** Math 103  
**Basic Skills Advisories:** English 1A  
**Subject Advisories:** One year courses in high school chemistry and high school biology are recommended, but not required.
- C. Summary:** The topics covered in Biology 1 will include the cellular and chemical basis of life, organ systems, genetics, evolution, current hypotheses regarding the origin of life, ecology, environmental concerns, and the impact of human activity on the biosphere. Biology 1 is recommended for pre-professionals and life science majors. It fulfills the prerequisite for Biology 20 (and is a recommended prerequisite for Biology 4 and Biology 6).
- D. Objectives:** To become familiar with the study of anatomical and physiological similarities and differences of living systems as they relate to heredity, evolutionary history and ecology. When completed, the student will have an awareness and an appreciation of some of the choices the field of Biology has to offer, as well as a solid background to pursue the career of their choice.

### **II. COURSE OUTCOMES**

Upon completion of this course, students will be able to:

- A.** evaluate comparative anatomy and physiology in living organisms.
- B.** apply the scientific method to situations that need evaluation and recommendations.
- C.** use inductive and deductive reasoning in any environmental or ecological issue.

### **III. COURSE OBJECTIVES**

In the process of completing this course, students will be able to:

- A.** identify life from an evolutionary approach, from basic organic molecules to whole organ systems.
- B.** evaluate the biological sciences through references to historical discoveries and contributions which have led to the current use of scientific methods.
- C.** use scientific methods in performing experiments, collecting and interpreting data, developing conclusions based on the data collected during basic experimentation.
- D.** apply the classical principles of Mendelian genetics to understand DNA as hereditary material and the application to evolutionary thought.
- E.** understand chemical and energy relationships of the levels of biological organization.

- F. compare and contrast functional systems of living organisms.
- G. identify environmental and ecological issues.
- H. evaluate scientific literature and current biological advances.

**IV. REQUIRED MATERIALS:**

- A. Text: Mader, S., BIOLOGY REEDLEY COLLEGE CUSTOM, 10<sup>th</sup> edition, McGraw-Hill.
- B. Laboratory Manual: Mader, BIOLOGY CUSTOM LAB MANUAL REEDLEY COLLEGE, 10<sup>th</sup> edition, McGraw-Hill.
- C. Bluebooks (x4)
- D. Scantron form 886 (x4)
- E. E-mail Address

**V. NO FOOD, BEVERAGE, WIRELESS PHONES, TABLETS DEVICES, OR DISRUPTIVE BEHAVIOR AT ANY TIME DURING THE CLASS SESSION. THIS IS DISRESPECTFUL TO YOUR CLASSMATES AND CAN DETRACT FROM THE LEARNING ENVIRONMENT. THE BASIC RULE IN ANY OF MY COURSES IS TO HAVE RESPECT FOR YOUR CLASSMATES AND THE LEARNING ENVIRONMENT WHICH IS TRYING TO BE OPTIMIZED IN THE LECTURE AND LABORATORY SETTINGS. PLEASE KEEP IN MIND, MANY OF STUDENTS IN THIS COURSE ARE TRYING TO GET AS INFORMATION MUCH FROM THE COURSE AS POSSIBLE AND FOSTERING AN ENVIRONMENT IN WHICH THIS IS POSSIBLE IS ESSENTIAL TO POSITIVE LEARNING OUTCOMES.**

**VI. ATTENDANCE:**

All students are expected to be on time for each laboratory and lecture session. Attendance is taken for each laboratory and lecture session. There are **NO** excused absences for any reason. Three (3) absences will result in your overall course grade to be reduced by one full letter. Furthermore, tardiness may be construed as an absence from the class. Be aware that three (3) tardies = 1 absence. If you are late, it is **YOUR** responsibility to see the instructor after class in order to confirm that your attendance was recorded. Six (6) absences will result in being dropped from the course.

**VI. TESTS AND EVALUATIONS:**

A. Grading

<b>Description</b>	<b>Points Possible</b>
10 Lab Exercises (10 pts. each)	100
10 Lab Plates (drawings) (10 @ 10 pts. each)	100
10 Quizzes (10 @ 10 pts. each)	100
Research report	100
3 Lab Practicals (100 pts. each)	300
3 Lecture Exams (100 pts. each)	300
Lecture Final	200
Approximate Total Points =	1200

- B. *Grading scale:*  
90% = A      80% = B      70% = C      60% = D      50% and below = F
- C. *Lecture Exams* will include multiple choice questions and usually 2-3 short essay questions. Many times these essays will be the main objectives of each chapter.
- D. *Lab Practicals* will be a “hands on” test for the work done in the laboratory.
- E. *Lab Exercises* will consist of lab questions taken directly from the lab book or handouts. They will be collected one week after the laboratory was completed. These are to have the answers to laboratory questions as well as any problems to work or tables to fill in. Forgotten lab notebooks means no score – as you are responsible for your work.
- F. Each lab session will begin with a quiz. Each quiz will consist of questions concerning the previous labs/lectures and/or the current day’s lab/lecture. Stay caught up and these may be looked at as “soft” points! Quizzes missed due to ***tardies or absences may NOT be made up.***
- G. No make up exams will be allowed. A missed exam will be made up by “doubling down” on the next exam.
- H. See research report information on Blackboard.

#### **VII. Other information:**

**Drops:** You have until the 9th week of school to drop. If you elect to do so, be sure to drop yourself. Do not assume you have been automatically dropped. This is very important, as after the 9th week a grade must be given, by state law, whether you attend class or not.

#### **VIII. Help:**

If you should have difficulty grasping the material presented during the course be sure to see your instructor at the first sign of trouble. Often, a few minutes can clear up many problems! If you are having trouble studying, perhaps you need a few study hints or a tutor at the Tutorial Center. Please come in for help!

Always keep in mind that this is a four-unit course. As a general rule, each hour of lecture requires two hours of additional study outside of the classroom each week. Each hour of lab requires one hour of study time, outside the laboratory each week. This equals eight hours of study each week in order to pass this class. Do your planning accordingly.

Success comes before work only in the dictionary. Overall, I hope you have a fun semester and learn Biology along the way. Good Luck.

**IX. Academic Dishonesty**

Academic dishonesty is unacceptable and will not be tolerated by Reedley College. Cheating, plagiarism and collusion in dishonest activities erode the college's educational and social role in the community.

**Cheating** is the act of deception by which a student misleadingly demonstrates that he/she has mastered information on an academic exercise. Examples include but are not limited to:

1. Copying or allowing another to copy a test, paper, project, or performance.
2. Using unauthorized materials during a test, for example, notes, formula lists, or "cheat sheets."
3. Taking a test for someone else or permitting someone to take a test for you.

**Plagiarism** is the act of representing the work of another as one's own without giving credit. Plagiarism includes but is not limited to:

1. Incorporating the ideas or words of another's work without giving appropriate credit.
2. Representing another's artistic or scholarly works, such as musical compositions, computer programs, photographs, etc., as one's own.

Disciplinary Procedures are outlined in your Reedley College student catalog and are summarized as follows when a faculty member discovers a violation:

1. Conference with student to address allegations
2. Notification of division dean, report for permanent record of student.
3. May give student "F" for assignment or course.
4. If more than one infraction has occurred, the student may go on probation, be suspended, or expelled. An appeal may be made within 15 days of notification.

- X.** If you have a verified need for an academic accommodation or material in alternate media (i.e. Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

**Biology 1**  
**Fall 2013 LECTURE SCHEDULE (tentative)**  
**#55224**

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Chapter</b>
1	14. Aug	Introduction, What is Life?, Scientific Method	1
	16. Aug	Chemistry	2,3
2	21. Aug	Cell Structure	4
	23. Aug	Membranes	5
3	28. Aug	Metabolism	6
	30. Aug	Photosynthesis	7
4	4. Sept	Photosynthesis cont. Cellular Respiration	8
	6.	Mitosis	9

	Sept		
5	11. Sept	Meiosis	10
	13. Sept	<b>LECTURE EXAM #1 (ch.1-9)</b>	
6	18. Sept	Medelian Genetics Human Genetics	11
	20. Sept	Molecular Biology of Genes	12
7	25. Sept	Darwin & Evolution How Populations Evolve	15 16
	27. Sept	Speciation & Macroevolution	17
8	2. Oct	Systematics Viruses, Bacteria	19 20
	4. Oct	Protists	21
9	9. Oct	Fungi Plants	23 23,24,27
	11. Oct	<b>LECTURE EXAM #2(ch.10-12,15-17,20,21)</b>	Last day to drop 10/14
10	16. Oct	Invertebrates	28
	18. Oct	Vertebrates	29
11	23. Oct	Vertebrates cont.	29
	25. Oct	Animal Organization	31
12	30. Oct	Circulation	32
	1. Nov	Digestion	34
13	6. Nov	<b>LECTURE EXAM #3 (ch.23,24,27-29,31,32,34)</b>	
	8. Nov	<b>Veterans' Day Holiday</b>	
14	13. Nov	Respiration	35

	15. Nov	Body Fluid Regulation	36
15	20. Nov	Nervous System	37
	22. Nov	<b>Thanksgiving-No Class</b>	
16	27. Nov	Sense Organs <b>Support systems &amp; Locomotion</b>	38 39
	29. Nov	Population Ecology	44
17	4. Dec	Ecosystems <b>Extra Credit Due</b>	45
	6. Dec	Conservation Biology	47
18	13. Dec	<b>FINAL LECTURE EXAM</b>	11:00 am-12:50 pm

**Biology 1**

**Fall 2011 LABORATORY SCHEDULE (tentative)**

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Lab #</b>
1	16. Aug	Metric measurement & Microscopy	2
2	23. Aug	Chemistry	3
3	30. Aug	Cell Structure & Function	4
4	8. Sept	Photosynthesis	on-line
5	11. Sept	Mitosis & Meiosis	8
6	18. Sept	<b>Lab Practical #1 (weeks 1-5)</b>	
7	25. Sept	Genetics	9
8	11. Oct	Evolution	12
9	18. Oct	Plants	17

10	25. Oct	Invertebrates	22
11	27. Oct	<b>Lab Practical #2 (weeks 7-10)</b>	
12	1. Nov	Protostomes	23
13	8. Nov	Deuterostomes	24
14	15. Nov	Animal Organization	25
15	22. Nov	<b>Thanksgiving Holiday</b>	
16	29. Nov	Virtual Frog Lab	online
17	6. Dec	<b>Lab Practical #3 (weeks 12-16)</b>	