



Reedley College

Syllabus for Biology 3

Introduction to Life Science

Fall Semester, 2011

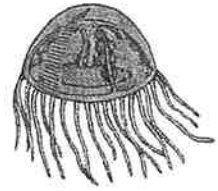


Instructor:

Gary W. Potter (e-mail gary.potter@reedleycollege.edu), Please include **Biol. 3** in the subject line or I will not open your e-mail!

Meeting Times:

Lecture: Monday & Wednesday, 6:00 PM until 7:30 PM.
Lab: Monday & Wednesday, 7:40 PM until 8:40 PM.



Holidays: No Classes will meet.

Monday, September 5, 2011: Labor Day holiday
Thursday, November 11: Veteran's Day (No classes held, campus closed)
Thursday & Friday, November 24 & 25: Thanksgiving holidays.

Exam Dates:

Exam # 1: Wednesday, September 21, 2011
Exam # 2: Wednesday, October 19, 2011
Exam # 3: Wednesday, November 16, 2011
Exam # 4: Monday, December 12, 2011

Other Important Dates:

Friday September 2, 2011: Last day to drop a class to avoid a "W".
Friday, October 14: Last day to drop a class (letter grades assigned after this date.)
Monday through Friday, December 12 through 16: Final Exams week.
Friday, December 16: End of fall semester.

Course Description:

Biology 3 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 may be required.

Course Outcomes:

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

- A. understand the process of scientific method, microscopy, and the cell.

- B. identify levels of organization from the cell to the organismal level. Identify human organ systems structure and function.
- C. evaluate scientific literature and current biological achievements.
- D. assess the role of human ecology, earth resources, and limitations.
- E. learn nature through the study of plants structure, functions, and process such as photosynthesis
- F. apply the principles of genetics to humans and understand the outcome of reading DNA.
- G. classify and evaluate the wide range of living organisms and their place on earth.
- H. understand the chemical basis of life.
- I. identify life from an evolutionary approach.
- J. understand the chemical and energy relationships at all levels of biological organization.

Course Objectives:

In the process of completing this course, students will:

- A. read, analyze, evaluate, and discuss Scientific Method, Microscopy, The cell, and Levels of Organization.
- B. learn the periodic table of the elements and chemistry of the carbon atom and chemical structure of living organisms.
- C. read appropriate scientific literature on classification.
- D. learn the cell's structure, function, 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, observe, and record data.
- H. learn plant structure, physiology, and interaction including photosynthesis and aerobic respiration.
- I. study evolution.
- J. observe chemical and energy relationships.

Accommodations for students with disabilities: If you have a verified need for an academic accommodation or materials 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.

Required Materials:

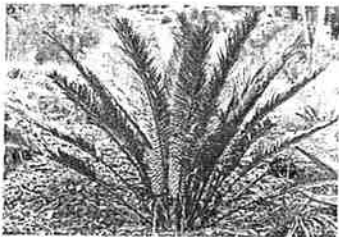
1. **Textbook:** Mader, Sylvia S., Essentials of Biology, 2nd edition (2010), McGraw-Hill Companies Inc.
2. Notebook or three ring binder for note taking..
3. **Recommended Text:** Sierra Nevada Natural History, revised ed. Storer, T., Usinger, R., & Lukas, D., Univ. of California Press. 2004.

4. Biology Drawing Paper & pencil, for lab plates.
5. Camera – for field trips/photo essay project

Expectations:

- A. You are expected to attend all class sessions. Two or more absences from laboratory periods and four absences from lecture periods may very likely put you in jeopardy of failing. Unless there are extenuating circumstances, such absences may also get you dropped from the course.
- B. You are responsible for finding out what you missed and for making up missed work due to absence.
- C. Cheating and plagiarism will not be tolerated. Students caught cheating will receive a zero for that assignment, quiz, or test. Cooperative learning is limited to working in groups during labs.
- D. Assignments are expected to be turned in on time. In case of absence, I will be accept late papers up to two class meetings after the due date, with a grade deduction of 10% per per each class meeting that it is late.
- E. Guests are not allowed in class!

Grading: Your grade will be determined by using an accumulative point total of all laboratory reports, quizzes, and exams. Quizzes and Lab Reports are worth 10 points each, the written exams are worth 100 points each. Each exam will consist of a combination of multiple choice and short answer essay questions. Laboratory practical exams will be given from time to time and will consist of ten to fifteen stations worth 2 points each. Two makeup quizzes will be given. Your score on the makeup quizzes will be used to makeup a missed quiz or to replace the score of a quiz on which you scored lower than on the makeup quiz. No low quiz will be thrown out! **Extra credit will be limited to a few bonus questions on tests and an occasional special quiz or assignment. Extra credit will not be given for any other work!** At the end of the semester, your accumulated point total will be divided by the total number of points possible to determine your percentage grade. Your final letter grade will be determined using the following grading scale:



90% to 100%	=	A
80% to 89.9%	=	B
70% to 79.9%	=	C
60% to 69.9%	=	D
0% to 59.9%	=	F



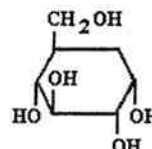
Grades will not be rounded! 89.99999999% is a B+ not an A-!

Projects: More details on each of these will be presented later.

1. **Pollination Project:** Design a plant with pollination type and seed dispersal.
2. **Plant Collection Project:** Collect and identify each of the major groups of plants
3. **Photo Essay Project:** Demonstrate Sierra Nevada ecological communities with a photo display of Grasslands, Foothill Woodland (Savannah), Chaparral, Yellow Pine Forest, and Riparian habitats with indicator species of each.

Course Outline (With reading assignments):

<u>Week</u>	<u>Lecture & Lab. Topics.</u>	<u>Reading</u>
1	<p>Lecture: Review the Syllabus; Biological Methods and Concepts.</p> <p>Lab. 1: What is life? Observation and Interpretation.</p> <p>Lab. 2: Scientific method.</p>	Ch. 1
2	<p>Lecture: Introduction to chemistry.</p> <p>Lab. 3: Use of the compound microscope.</p>	Ch. 2
3	<p>Lecture: Biochemistry, The Organic Molecules of Life</p> <p>Lab. 4: Chemical tests for basic organic food groups.</p> <p>Sept. 14, 2011, Introduction to Photo Essay Project</p>	Ch. 3
4	<p>Lecture: Cell structure, function, and Cell reproduction</p> <p>Lab. 5A: Cell structure, onion skin, cheek cells, Anacharis leaf.</p> <p>Lab. 5B: Mitosis</p>	Ch. 4 Ch. 8



Test# 1: Wednesday, September 21, 2011: Biological methods, chemistry, cells

5	<p>Lecture: Cellular respiration, fermentation, & Photosynthesis</p> <p>Lab. 6: Photosynthesis & Pigment chromatography</p> <p>Lab. 7: Respiration</p>	Ch. 6 Ch. 7
6	<p>Lecture: DNA & RNA structure and function. Protein Synthesis</p> <p>Lab. 8: DNA & Protein synthesis worksheet.</p>	Ch. 11
7	<p>Lecture: Meiosis and Mendelian Genetics & Human Genetics</p> <p>Lab. 9: Genetics Lab., Genetics problems & Human Genetics</p>	Ch. 8 Ch. 10 Ch. 13
8	<p>Lecture: Evolution, Microevolution & Macroevolution Classification, Systematics, & Taxonomy</p> <p>Lab. 10: Microevolution lab.</p>	Ch. 15 Ch. 16



Test # 2: Wednesday, October 19, 2011: Photosynthesis, Respiration, Genetics, & Evolution

9	<p>Lecture: The First Forms of Life, Viruses, Prokaryotes & Protists Plants & Fungi</p> <p>Lab. 11: The Plants & Fungi; Introduction to The Plant Collection Project</p> <p>Lab. 12: Pollination Project. Film: "Sexual Encounters of the Floral Kind."</p>	Ch. 17 Ch. 18
10	<p>Lecture: Plant anatomy & Physiology</p> <p>Lab. 14: Plant morphology & Anatomy</p>	Ch. 20 & 21



- 11 **Lecture:** The Animal; Kingdom.
Lab. 15: Animal Taxonomy Lab.

Ch. 19

- 12 **Lecture:** Animal Structure & Function
Lab. 16: Animal Tissues, Organs & Systems



Ch. 22 through 29

Test # 3: Wednesday, November 16: Protista, Fungi, Plants, & Animals

13 Monday, November 21, 2011: Pollination Project Presentations

- Lecture:** Ecology of Populations
Lab. 17: Population Ecology

Ch. 30

Plant Collections Due: Monday, November 28, 2011

- 14 **Lecture:** Communities & Ecosystems
Lab. 18: Ecosystems & Biomes
- 15 **Lecture:** Human Impact on Ecosystems



Ch. 31

Ch. 32

Monday, December 6: Photo Essay Project Due

Exam #4: Monday, December 12, 2011: Ecosystems, biomes, communities, animal behavior, & Human populations.

