

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Biology</u>
COURSE RUBRIC AND NUMBER	<u>BIOL 1107</u>
COURSE TITLE	<u>General Biology-Science Majors Laboratory II</u>
COURSE CREDIT HOURS	<u>1 0 :<!-- 3</u--></u>
	Credits Lec Lab

I. Catalog Description

Accompanies Biology 1307, Biology for Science Majors II laboratory-based course. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. **Prerequisite: BIOL 1306 and BIOL 1106 or by Biology placement exam. Corequisite: BIOL 1307. (0:3). Lab fee.**

II. Course Objectives

A. Unit I Science as a Process

1. Be able to apply the scientific method as an appropriate tool in hypothesis testing using a variety of modern laboratory techniques.
2. Students should gain experience in the use of the following science process skills:
 - a. Observation
 - b. Recording descriptive and quantitative data
 - c. Microscope use
 - d. Graphing
 - e. Measuring
 - f. Hypothesis formation
 - g. Quantitative analysis, including descriptive statistics
 - h. Experimental design
 - i. Scientific report writing/communication (*e.g.* posters)
 - j. Dissections of selected organisms
 - k. Field Experiences. Zoos and other appropriate natural areas.

B. Unit II The Evolutionary History

1. Describe how the earth has changed, the origin of life, and the classification of organisms.
2. Analyze the evolutionary history and diversity of the major groups of organisms with regard to their ecological relationships with other organisms and their environment.

C. Unit III: Biological Diversity

1. Describe the most important characteristics of Viruses, Bacteria and Protists.
2. Analyze examples/cases in the field of conservation biology, to protect our ecosystems.

D. Unit III: Plant Form and Function

1. Analyze the evolutionary history and diversity of the major groups of plant phyla.
2. Discuss the coevolution of plants and animals.
3. Explore the general aspects of transport systems and nutrition in plants.
4. Compare and contrast different plant reproductive strategies.

E. Unit IV. Fungal Diversity

1. Analyze the evolutionary history and diversity of the major groups of Fungi.
2. Discuss Fungal structure, function and relationship
 - a. Discuss the influence of fungi on other living taxa.
 - b. Discuss important examples, ecological interactions and their phylogenetic relationships.
 - c. Agricultural impact
 - d. Nutrient cycling
 - e. Medical importance

F. Unit V. Animal Form and Function. The lab topics below can be emphasized during dissections and field experiences.

1. Demonstrate the evolutionary history and diversity of the major groups of animal phyla with the use of living and preserved specimens.
2. Analyze general aspects of animal organization, (tissue to organ systems) and the necessity of structural features by dissecting preserved animals such as: hydrostatic, and exo-, and endoskeletons (cartilage and bony).
3. Compare and contrast the methods used by animals to regulate internal temperature (ecto vs. endothermic); place special emphasis on energy consumption, efficiency, behavioral adaptations (reproductive strategies), and limitations.

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
3. Communicate effectively the results of scientific investigations.
4. Demonstrate knowledge of modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
5. Distinguish between phylogenetic relationships and classification schemes.
6. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
7. Describe basic animal physiology and homeostasis as maintained by organ systems.
8. Compare different sexual and asexual life cycles noting their adaptive advantages.
9. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

IV. Evaluation

A. Pre-assessment not required

B. Post-assessment

2. Grade; Lab grades will be based on practical, group activities, and presentations. The evaluation methods, frequency and individual weight of each assessment method is to be determined by the instructor.

C. Grading Scale:

90-100	-	A
80-89	-	B
70-79	-	C
60-69	-	D
below 60	-	F

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024)

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.