

PALOMAR COLLEGE
COURSE OUTLINE OF RECORD FOR
DEGREE CREDIT COURSE

 x Transfer course A.A. degree applicable course
(check all that apply)

COURSE NUMBER AND TITLE: Biology 101L – General Biology (Laboratory)

UNIT VALUE: 1

MINIMUM NUMBER OF SEMESTER HOURS: 48

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: Completion of, or concurrent enrollment in, Biology 101 or Biology 114

COREQUISITE: None

RECOMMENDED PREPARATION: None

SCOPE OF COURSE:

Laboratory exercise in cell structure and function, energy transfer, reproduction, genetics, and ecology. *Not open to students with prior credit in BIOL 100.*

SPECIFIC COURSE OBJECTIVES: Upon completion of this course, the successful student will:

1. demonstrate proper safety in the laboratory;
2. use metric units and readily convert between units;
3. properly use and maintain the compound microscope;
4. design simple experiments;
5. discuss the pH scale and the characteristics of acids and bases;
6. compare procaryotic and eucaryotic cells;
7. discuss transport of materials across biological membranes;
8. compare mitosis and meiosis;
9. compare DNA and RNA;
10. describe the process of protein synthesis;
11. discuss mechanisms of evolution;
12. compare the five kingdoms in the Whittaker Classification System;
13. compare phylogenetic trends in the plant kingdom;
14. compare phylogenetic trends in the animal kingdom;
15. compare aquatic and terrestrial ecosystems.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Introduction
 - A. Laboratory Safety Procedures as per Departmental Safety Handout
 - B. Library Research Techniques
 - C. Metric Measurements and Conversions
- II. Scientific Process
 - A. Process of Investigation
 - B. Data Analysis/Graphing
- III. Light Microscopy
 - A. Microscope Handling and Operation
 - B. Investigating Cell Structure
- IV. Enzymes
 - A. Nature of Enzymatic Reaction
 - B. Influences on Enzymatic Activity
- V. Diffusion/Osmosis
- VI. Energy
 - A. Photosynthesis
 - B. Aerobic Cell Respiration, Fermentation
- VII. DNA
 - A. Structure of DNA
 - B. DNA, RNA, and Protein Synthesis
 - C. DNA Extraction
- VIII. Cell Division
 - A. Chromosomes, Ploidy
 - B. Cell Division Involving Mitosis
 - 1. Mitosis in Growth and in Reproduction
 - 2. Phases of Mitosis
 - 3. Cell Cycle
 - C. Cell Division Involving Meiosis
 - 1. Phases of Meiosis
 - 2. Cell Cycle

- IX. Taxonomy and Kingdom Survey
 - A. Monera
 - B. Protista
 - C. Plantae
 - 1. Morphology
 - 2. Life Cycles
 - D. Animalia
- X. Animal Adaptations and Behavior
- XI. Natural Selection

REQUIRED READING:

Sourbeer, D., and Thompson, S. General Biology Laboratory Manual. San Marcos; Self Published, 1995.

OR

Armstrong, Wayne. BIOLOGY 10 LAB MANUAL. 5th Edition. Minneapolis, Minnesota: Burgess International Group, 1988.

SUGGESTED READING:

Selected articles identified by instructor from current periodicals such as Scientific American, and chapters from a general biology text that relate to lab topics.

REQUIRED WRITING:

Each laboratory assignment requires writing. A minimum total of ten pages will be written.

OUTSIDE ASSIGNMENTS:

Each student is expected to spend a minimum of three hours a week in preparation and classroom activities for each unit of credit assigned to the course.

Outside assignments include required readings in laboratory manual, preparation for laboratory exams, and completion of laboratory assignments.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.

Yes No

If yes, check all that apply.

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)
- Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)
- Two-Way Video Conferencing (Two-way interactive video and audio)
- One-Way Video Conferencing (One-way interactive video and two-way interactive audio)
- Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

GRADING POLICY AND STANDARDS (include methods of determining whether the stated objectives have been met by students):

Grades may be determined through laboratory quizzes, laboratory reports and other assignments. In a typical course, approximately 70% of the points come from laboratory quizzes, and 30% come from laboratory reports or other assignments.

IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?

Yes No Number of times course may be taken for credit:

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable:

CONTACT PERSON: Daniel Sourbeer, x2775

SIGNATURES:

SIGNATURES ON FILE

November 2, 2000
NEW-Bio101L.course outline of record-11.2.00
9/00