

El Paso Community College

Syllabus

Part II

Official Course Description

SUBJECT AREA	<u>Biology</u>
COURSE RUBRIC AND NUMBER	<u>BIOL 1308</u>
COURSE TITLE	<u>Biology for Non-Science Majors I (Lecture) (C) (MNS)</u>
COURSE CREDIT HOURS	<u>3 3 0</u> Credits Lec Lab

I. Catalog Description

Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. This course is NOT intended for science majors. **Prerequisite:** Placement at college-level English Language Arts Reading by TSIA2 or equivalent; OR completion with a "C" or better or concurrent enrollment in the following: INRW 0311 or INRW 0312 or ESOL 0340. **Corequisite:** BIOL 1108. (3:0).

II. Course Objectives

A. Unit I. Basic Biological Concepts

1. Describe the characteristics of human biology and the role of science in society.
2. Apply the scientific method while investigating the topics of the course. In applying the scientific method, students will demonstrate:
 - a) effective development, interpretation, and expression of ideas and **communication skills** through written, oral, and/or visual communication of their scientific investigation, outcomes, and conclusions.
 - b) **critical thinking skills** by engaging in creative thinking, innovation, inquiry, and demonstrating analysis, evaluation, and synthesis of information.
 - c) **empirical and quantitative skills** by formulating an inquiry and following an investigative process using empirical and/or qualitative/quantitative reasoning to satisfy the inquiry. This includes the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
 - d) **teamwork skills** by being able to consider different points of view and by effectively working with others to support a shared purpose or goal in their scientific investigation.
3. Discuss the chemistry of living organisms including the role of macromolecules in cell metabolism.
4. Discuss photosynthesis and cellular respiration (the energetics of life).
5. Discuss the basic structure and function of prokaryotic and eukaryotic cells.
6. Discuss viruses and bacteria and their relationships with cells and human health.

B. Unit II. Cellular Division and Genetic Inheritance

1. Describe the fundamental principles of cell reproduction and differentiation.
2. Discuss disorders and diseases associated with mitotic and meiotic errors.

3. Discuss the basic principles of human genetic inheritance and explain relevant genetic disorders.
4. Discuss how genetic research is applicable to daily life, the workplace, and medical fields including any relevant legal and ethical implications.
5. Discuss the underlying principles of cell cloning and stem cell research.

C. Unit III. Evolution and the Diversity of Life

1. Discuss the basic principles of evolution.
2. Explain the current accepted hypothesis on the origin of life on earth and discuss the origin of prokaryotic and eukaryotic organisms.
3. Discuss and illustrate basic population evolutionary principles, natural selection, and fitness in terms of survival and reproduction.
4. Discuss eukaryotic (primarily plant and animal) diversity, organization, structure, reproductive strategies, and development.

D. Unit IV. Ecology and Conservation Biology

1. Discuss the basic ecological concepts involving natural ecosystems, human populations, and the human impact on ecosystems.
2. Investigate conservation biology with respect to its role in today's politics and society and the biodiversity crisis.
3. Briefly describe the major biomes of earth and the conservation efforts to maintain biodiversity

III. THECB Learning Outcomes (ACGM)

Upon successful completion of this course, students will:

1. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
2. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
3. Interpret results from cell physiology experiments involving movement across membranes, enzymes, photosynthesis, and cellular respiration.
4. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
5. Describe karyotyping, pedigrees, and biotechnology and provide an example of the uses of each.
6. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
7. Analyze evidence for evolution and natural selection.

IV. Evaluation

A. Pre-assessment not required

B. Post-assessment

1. **Grade:** The number, frequency, and type of quizzes and exams is left to the discretion of the instructor. The type can be multiple choice, true, false, etc., and it is very desirable to include a section evaluate the student's written expression (objective/essay combination). Take-home exams are not recommended for this course.

C. Grading Scale:

90-100 % = A

80- 89 % = B
70- 79 % = C
60- 69 % = D
below 60 % = F

V. Disability Statement (Americans 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.

VII. Title IX and Sex Discrimination

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.