

**BIOLOGY 1409 -
Biology for Non-Science Majors II**

Western Texas College

- I. Basic Course Information:
 - A. Lecture-- This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology.
 - B. Co-requisite: None
 - C. Required grade for enrolling in the next course in this sequence: None
- II. Student Learning Outcomes
 - A. Describe and define modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation.
 - B. Describe phylogenetic relationships and classification schemes.
 - C. 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.
 - D. Describe basic animal physiology and homeostasis as maintained by organ systems.
 - E. Compare different sexual and asexual life cycles noting their adaptive advantages.
 - F. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.
 - G. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
 - H. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
 - I. Communicate effectively the results of scientific investigations. 10. Describe phylogenetic relationships and classification schemes.
- III. Testing Requirements
 - A. The Chapter Test and Final exam must be proctored by an approved testing organization. (Ask you instructor for more details.)
 - B. Students are NOT allowed to use their book or notes of any kind while taken their proctored tests and exam.
 - C. All chapter tests and the comprehensive lecture final exams are timed.
- IV. Course Requirements
 - A. 10 multiple-choice quizzes
 - B. 4 current science article write-ups and associated class discussion
 - C. 10 total lab assignments
 - D. 3 non-cumulative multiple-choice chapter tests
 - E. 1 cumulative multiple-choice final exam

V. Information on Books and Other Course Materials

- A. Required Book: Essential Biology by Simon, Reece, Dickey 6th edition - ISBN – 9780133917789
- B. Lab materials are provided

VI. Grading Breakdown

- A. Articles.....15%
- B. Quizzes.....10%
- C. Lab.....30%
- D. Chapter Tests.....25%
- E. Final Exam.....20%

VII. Other Policies: Please refer to the WTC Course [Catalog](#) for the following:

- A. Campus Calendar
- B. Final Exam schedule
- C. How to drop a class
- D. Withdrawal information
- E. Student Conduct/Academic Integrity
- F. ADA Statement

VIII. Course Content

Chapters Covered	Sections Covered
Chapter 11 – How Genes are Controlled	How genes are regulated, information flow in the cell, therapeutic and reproductive cloning, genetic basis of cancers
Chapter 12 – DNA Technology	Genetic engineering, bioinformatics, ethical questions of GE
Chapter 13 – How Populations Evolve	Classification systems, explanation of evolution, evolution evidence, natural selection, evolution of populations
Chapter 14 – How Biological Diversity Evolves	Origin of species, earth history and macroevolution, mechanisms of macroevolution, phylogenies
Chapter 15 – The Evolution of Microbial Life	Origin of life, prokaryotic evolution, protists
Chapter 16 – The Evolution of Plants and Fungi	Terrestrial plant adaptations, plant diversity, fungal evolution and function
Chapter 17 – The Evolution of Animals	Origin of animals, invertebrate evolution and diversity, vertebrate

	evolution and diversity, human evolution
Chapter 18 – And Introduction to Ecology and the Biosphere	Environmentalism, abiotic factors of Earth, types of biomes, climate change
Chapter 19 – Population Ecology	Measures of population ecology, survivorship curves, population growth models, conservation of endangered species, invasive species, trends in human population growth, human impacts
Chapter 20 – Communities and Ecosystems	Genetic diversity, species diversity, ecosystem diversity, interspecific interactions, energy flow, chemical cycling, conservation biology

Last Modified: January 16, 2017