COURSE SYLLABUS

BIOL 1407
GENERAL BIOLOGY for SCIENCE MAJORS I
EASTFIELD COLLEGE
STEM DIVISION
Spring 2019

INSTRUCTOR INFORMATION
Instructor: Andra Archer
Email: ararcher@garlandisd.net

COURSE DESCRIPTION

BIOL 1407 Biology for Science Majors II (4 credit hours)
Prerequisite: Biology 1406. One of the following must be met: (1) Developmental Reading 0093 AND Developmental Writing 0093; (2) English as a Second Language (ESOL) 0044 AND 0054; or (3) have met Texas Success Initiative (TSI) Reading and Writing Standards AND DCCCD Writing score prerequisite requirement. An introductory survey of current biological concepts for students majoring in the sciences. Emphasis will be placed on topics which include evolution, biological diversity, ecology, and comparative structure and function of organisms. (3 Lec., 3 Lab.) (Coordinating Board Academic Approval Number 2601015103)

REQUIRED/RECOMMENDED TEXTS


STUDENT LEARNING OUTCOMES (SLO’s)
Your performance in each of these areas will be judged by grades obtained from assignments and exams that measure your understanding of the textbook material and laboratory experiments requiring you to follow a written procedure to collect and analyze scientific information.

Lecture Learning Outcomes
1. Describe modern evolutionary synthesis, natural selection, Mendelian inheritance, micro and macroevolution, and speciation.
2. Describe phylogenetic relationships and classification schemes.
3. 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.
4. Describe basic animal physiology and homeostasis as maintained by organ systems.
5. Compare different sexual and asexual life cycles noting their adaptive advantages.
6. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

Lab Learning Outcomes
Upon successful completion of this laboratory-based course, students will:
1. Be able to 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 investigations.
4. Demonstrate knowledge of modern evolutionary synthesis, natural selection, Mendelian inheritance, 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

Core Objectives:

BIOL-1407 develops the following Core Objectives:

- **Critical Thinking** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.

- **Communication** - to include effective development, interpretation and expression of ideas through written, oral and visual communication.

- **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.

- **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Core Objective Development Statements:

- **BIOL 1407 develops Critical Thinking and Empirical and Quantitative Skills** by requiring students to research, analyze and interpret data derived from an experimental setting and drawing a well-informed conclusion of the data through the application of sound biological concepts. Examples: research paper, case studies, and/or lab reports.

- **BIOL 1407 develops Teamwork and Communication** by requiring students to effectively work in a small group on an assigned problem, exercise or course concept that will then be presented in a written, oral or visual format. Example: lab exercises.

The project that will assess these Core Objectives will be an exercise involving the “Identification of Specimens within a Sample of Tropical Calcareous Beach Sand.”

**ATTENDANCE POLICY**

Students are expected to regularly attend all classes in which they are enrolled. Students have the responsibility to attend class and to consult with the instructor when an absence occurs. Instructors are responsible for describing attendance policies and procedures to all students enrolled in their class.

**Religious Holidays/Observances:**
Absences for observance of a religious holy day are excused. Notification of the absence must be given to the instructor in writing at least two weeks prior to the date of the holy day. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to take a make-up examination or complete an assignment within a mutually agreed upon time after the absence.

**DROP / WITHDRAWAL POLICY**
If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar's Office by May 4th. Failure to do so will result in your receiving a performance grade, usually an “F.” If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdraw) in each class dropped. For more information
about drop deadlines, refer to the current printed Credit Class Schedule, contact the Admissions/Registrar’s Office at 972-860-7167 (Room C119), or contact the division office.

If you drop a class via eConnect, make sure to print a copy of the confirmation and keep the copy. In the event of a discrepancy it will be the responsibility of the student to provide documentation of having dropped the class.

INSTITUTIONAL POLICIES

DISCLAIMER
The instructor reserves the right to amend this syllabus as necessary. The guidelines set forth in this syllabus may be changed, deleted, or amended at any time by the instructor. The attached course outline is intended as an aid in helping you know your responsibilities for the semester. It is possible that some changes in the course outline or class policies will be made during the semester. Any changes that are made to the class policies or course outline will be announced in class.

Lecture Schedule
Spring – 2019

TOPIC / CHAPTER

Course Orientation; and Chapter-27: “Bacteria and Archaea”
Chapter-28: “Protists”
Chapter-31: “Fungi”
Chapter-33: “Invertebrates”
Chapter-33: “Invertebrates” and Chapter-34: “Vertebrates”
Chapter-40: “Histology”
Chapter-41: “Digestive System”
Chapter-42: “Respiratory and Circulatory Systems”

Note: Thursday May 4th – Last Day to Withdraw with a “W”

Chapter-25: “Origin of Life” and Evolution (Chapters: 22, 23, 24)
Ecology (Chapters: 52, 53, 54, 55, 56)

BIOLOGY – 1407

Lab Schedule
Flex-2 / Spring – 2019

CHAPTER / TOPIC

Orientation/Lab Safety; Introduction to Taxonomy; Chapter-15: “Evolution”
Chapter-18: “Bacteria” and Chapter-19: “Protista”
Chapter-19: “Protista” continued and Chapter-25: “Fungi”
Chapters – 20, 21, 22 & 23: “Plant Kingdom”
Chapter – 24: “Roots, Stems and Leaves”
Chapters – 27, 28, 29 and 30: “Animal Kingdom”

Note: Saturday May 4th ----- Last Day to Withdraw with a “W”

Chapters – 27, 28, 29 and 30: “Animal Kingdom” continued
Chapter-37: “Ecology” and Review for Lab Exam – 3