RANGER COLLEGE

STEPHENVILLE, TEXAS

COURSE SYLLABUS
AND
INSTRUCTOR PLAN

GENERAL BIOLOGY I
BIOL 1406

4 credit hours

INSTRUCTOR:

Gordon Woolam

BIOL 1406 Syllabus

SCHEDULED HOURS/WEEK: Lecture: 3 Lab: 3 Lec/Lab Combined: **6**

Instructor: Gordon Woolam
E-Mail: gwoolam@rangercollege.edu
Office Phone**:** 254 965 1078
Office Hours**:** By appointment

***Disclaimer: All schedules and procedures in this syllabus and this course are subject to change in the event of extenuating circumstances. ***

I. Texas Core Curriculum Statement of Purpose

Through the Texas Core Curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world, develop principles of personal and social responsibility for living in a diverse world, and advance intellectual and practical skills that are essential for all learning.

II. Course Description

Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Laboratory activities will reinforce these concepts. (3 Lec., 3 Lab.)

III. Required Background or Prerequisite

Passing score on TSI Reading section or equivalent alternate test is recommended.

IV. Required Textbook and Course Materials

"Campbell Biology: Concepts and Connections" 9Th edition by Taylor, Simon, Dickey, Hogan and Reece. 2018 Pearson ISBN 13: 978-0-134-29601-2

V. Course Purpose

Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method.

Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences

VI. Course Objectives

Biology 1406 is designed to instruct students in methods that will result in a student obtaining a working knowledge in the following areas:

- Identify the significant concepts of the atom and how it forms bonds with other atoms to form molecules, the difference between inorganic molecules and organic molecules and recognize the various forms of each and the significance of these forms as they relate to living organisms and identify the 4 macromolecular molecules found common to living organisms and their units of structure as well as their functions important for life.
- Understand the cell in terms of its anatomical structure and the functions of each structure and understand the processes by which substances move into and out of the cell.
- Explain energy production and utilization by the different forms of cells which are common to our planet.
- Understand the heredity of life and the alterations which occur in its structure and the consequences of these alterations.
- Recognize the importance of evolution to the continuity of living forms and the various forms of support for evolution.
- Understand the various concepts of ecology required to have a rudimentary grasp of its aspects

VII. Learning Outcomes

- Describe the characteristics of life.
- Explain the methods of inquiry used by scientists.
- Identify the basic requirements of life and the properties of the major molecules needed for life.
- Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
- Describe the structure of cell membranes and the movement of molecules across a membrane.
- Identify the substrates, products, and important chemical pathways in metabolism.
- Identify the principles of inheritance and solve classical genetic problems.
- Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
- Describe the unity and diversity of life and the evidence for evolution through natural selection.

VIII. Core Objectives

Life and Physical Sciences Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on human experiences. The Core Objectives of critical thinking skills, communication skills, empirical and quantitative skills, and teamwork are addressed by each course in this component area.

This course directly meets the following of the six Core Objectives:

- ☒ **Critical Thinking Skills**: To include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information
- ☒ **Communication Skills**: 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
- ☐ **Personal Responsibility**: To include the ability to connect choices, actions, and consequences to ethical decision-making
- ☐ **Social Responsibility**: To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

IX. Methods of Instruction

Lectures (twice weekly) on the major concepts and theories in biology will be discussed.

Labs (2.75 hours once weekly) in which major biological principles will be demonstrated by examination of specimens, conducting experiments and viewing videos

X. Methods of Assessment

Lecture: The lecture portion of the course comprises 75% of your final grade in BIOL 1406. Exams will cover all material discussed since the last exam and may consist of one or more of the following:

- fill-in-the-blank questions,
- short answer questions or short essay,
- matching,
- multiple choice

Each question will be graded as correct or incorrect in accordance with information in the text and lectures. Exam grades will be taken as the number of points correct. Each exam will carry equal weight in the average, including the Final Exam.
Lecture Exams and Final Exam (CT, COM, EQS): Students will take a 4 Exams and a Final.

Laboratory grades: The lab portion of the course comprises 25% of your final grade in BIOL 1406. Further information including safety guidelines in the laboratory will be given by your lab instructor.

- Students will often work in teams of two or more to accomplish lab objectives. **(EQS, TW)**
- **Lab Tests:** Two lab tests **(CT, COM)**

No make-up tests!

XI. Course/Classroom Policies

The following rules and guidelines about classroom behavior are to be memorized, internalized, and strictly adhered to. Failure to do so will negatively impact your experience of this class, not to mention your grade.

- **Arrive on time.** Class begins promptly at the scheduled time. This means you should be in your seat and ready to begin.
- **Come to class prepared.** You are expected to participate in class discussions and come to class meetings having completed all assigned readings and written work.
- **Turn in assignments on time.** By accepting this syllabus, you agree to accept a score of zero on any late work.
- **Don't cheat.** Any assignment reflecting cheating, plagiarism, or any other form of academic dishonesty will receive a grade of zero. A second instance will result in automatic failure of the class and a report being filed with Ranger College's Vice President of Instruction. The consequences of this report can be quite severe for your academic future. For more details, see the section of the Ranger College Catalog (available at www.rangercollege.edu/catalog.pdf), titled "Student Misconduct," subsection "Academic Dishonesty."
- **Six absences = Dropped from class with a failing grade.** I expect you to attend class regularly. As per Ranger College's stated absence policy in the general college catalog (see pages 25-26 at http://rangercollege.edu/catalog.pdf), the only absences that will be excused are "official" ones, defined as those that occur due to authorized Ranger College activities (such as sporting events). Unofficial absences are counted from the first day of class as listed in the College Calendar, regardless of the date of your registration.
- **No phones.** Your phone must be turned off and properly stowed in your bag or otherwise stored off your person prior to class.

- **Email:** I am happy to communicate with you by email and will do my best to respond within 24 hours during the week. Messages sent over the weekend will be read on Mondays. In the subject line of any email that you send me, please indicate the content of the email. Then begin your message in the following manner:

  Dear Mr. Woolam,

  My name is _____ and I am in your Biology I class.

XII. Course Outline/Schedule

See Handout

XIII. Non-Discrimination Statement

Admissions, employment, and program policies of Ranger College are nondiscriminatory in regard to race, creed, color, sex, age, disability, and national origin.

XIV. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. The student is responsible for making the initial contact with the Ranger College Counselor. It is advisable to make this contact **before** or i**mmediately** after the semester begins.

XV. Laboratory Safety

Students are expected to understand and comply with all environmental, health and safety procedures and protocols, and must agree to abide by all lab safety policies. Specific safety guidelines will be discussed at the beginning of each lab activity. Any student who is late and misses the safety training or instructions may not be allowed to participate in the lab activity. Any student who intentionally or thoughtlessly jeopardizes the safety of another student will be immediately dismissed from the lab and may be withdrawn from the course.

Students should read the upcoming lab exercises (if available) **prior** to attending labs to be prepared for the required protocols and procedures and enhance safety.