RANGER COLLEGE

Ranger, TEXAS

COURSE SYLLABUS

Biology for Science Majors II

Biology 1407

4 credit hours

INSTRUCTOR:

Dr. Jerry Glidewell

INSTRUCTOR: Dr. Jerry Glidewell
EMAIL: jglidewell@rangercollege.edu
OFFICE: Science Building #3 Ranger Campus
PHONE: 254-267-7030
HOURS:

MONDAY: 3:40 - 5:00 PM
WEDNESDAY: 3:40 - 5:00 PM

OTHER TIMES BY ARRANGEMENT

The above schedule and procedures in 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

A continuation of Biology 1406 Fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaption, and classification. Concepts of reproduction, genetics, ecology, and the scientific method are included. Credit 4 semester hours.

III. Required Background or Prerequisite

Passing score on TSI Assessment Test Reading section is recommended.

IV. Required Textbook and Course Materials

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

V. Course Purpose

Courses in the life and physical sciences focus on describing, explaining and predicting natural phenomena using the scientific method. These courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

VI. Learning Outcomes

Upon successful completion of this course, students will:
Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution,
and speciation.
Describe phylogenetic relationships and classification schemes.
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.
Describe basic animal physiology and homeostasis as maintained by organ systems.
Compare different sexual and asexual life cycles noting their adaptive advantages.
Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

VII. Core Objectives

This course meets the following of the six Core Objectives established by Texas:

☒ **Critical Thinking Skills (CT) –** Creative thinking, innovation, inquiry, and analysis; evaluation and synthesis of information

☒ **Communication Skills (COM) –** effective development, interpretation and expression of ideas through written, oral, and visual communication

☒ **Empirical and Quantitative Skills (EQS) –** The manipulation and analysis of numerical data or observable facts resulting in informed conclusions

☒ **Teamwork (TW) –** The ability to consider different points of view and to work effectively with others to support a shared purpose or goal

☐ **Social Responsibility (SR) –** Intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

☐ **Personal Responsibility (PR) –** The ability to connect choices, actions, and consequences to ethical decision-making

VIII. Methods of Instruction

Lectures (twice weekly) on the major concepts and theories in biology will be discussed.
Labs (twice weekly) in which major biological principles will be demonstrated by examination of specimens, conducting experiments and viewing videos.

IX. Methods of Assessment

Exams will consist of multiple choice and short answer questions and will cover all material discussed in class or in reading assignments. Each question will be graded as correct or incorrect in accordance with information in the text, lectures and readings. Exam grades will be taken as the points correct. Points may be added to exam scores for in class assignments, but you must be in class and complete these assignments in the appropriate manner to receive credit.
Students missing lectures are responsible for getting notes from the instructor or classmates (notes, and other resources, are available on the Ranger College Web Page via Blackboard).
Make-up exams, for exams missed due to an excused absence, will be given later in the semester and may include different style questions and will exclude bonus questions. Students are strongly urged to not miss exams. The final exam is required – it is not optional.

The course grade will be computed as follows:

$$\text{Average of lecture exams (CT, COM, EQS)} = 3/4 \qquad \frac{(\text{Lecture Ave.} * 3) + \text{Lab Ave}}{4}$$

Lab average (CT, COM, EQS, TW) = 1/4

Letter grades will be assigned as follows:

90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, below 60 = F

X. Course/Classroom Policies

Regular and punctual attendance in all classes and labs is considered essential for optimum academic success. If the student has the equivalence of three weeks of unofficial absences . . . the instructor may drop the student from the course with a grade of F (Ranger College General Catalog). Students are expected to be seated by the beginning of the lecture period. Excessive tardies (6) may be considered as absences. Excessive unexcused absences (6) may result in a grade of I (incomplete) and may result in dismissal from the course with a grade of F. It is your responsibility to inform the instructor of an excused absence. An absence is excused if you are excused by the Dean to participate in an authorized College activity or if you have a valid medical excuse.
Any student who is disruptive to the class will be dismissed from the class and may be dismissed from the course. Any student found with unauthorized notes (cheat sheets, electronic devices, etc.) during an exam or copying from another student's exam will be subject to disciplinary action. Any student misconduct will be reported to the Dean of Student Services (See Student Handbook).
Electronic devices (computers, phones) may be used in class with special permission and with the understanding that they will be used only for biology class material. Misuse of cell phones, or other electronic devices, in class may lead to the student being counted absent or points deducted on exams.
No tobacco use is permitted in the science building, or any location on the RC campus.

Biology 1407 Lab Policies and Procedures

Biology labs meet twice a week for 75 minutes. Each lab will consist of a series of experiments, demonstrations, observations, videos or other activities. Active learning and critical thinking skills will be stressed through a series of exercises in scientific problem solving. Daily grades will be based on work sheets and quizzes completed in the lab on these activities. **All lab exercises should be completed and work sheets should be turned in before you leave the lab**. The graded worksheets will be returned during the following lab, or as quickly as possible, for correction. These work sheets will form the basis for major practical exams so you should keep them for future studying.

* **To get full credit for a daily grade you must be in lab by the beginning of the class - and cell phones off**.* During the beginning of lab the exercise will be explained - being present and focused is important.

Your grade in the lab (which is 1/4 of the course grade) will be determined by the following formula:

50% - daily grades (work sheets, quizzes, participation, etc. - about 20 daily grades)
50% - five major practical exams

To receive credit for the daily grade you must attend the lab. If you miss a lab you may be able to attend another regularly scheduled lab covering the same topic, space permitting. Check with me before you do this. The times the labs are scheduled will be posted on my office door.

The major practical exams will be based on the daily exercises completed since the last practical. **You are responsible for the material covered in lab whether you attended the lab or not**.
Work sheets will be available after the lab is completed in order to allow you to study for the practical **but not for a daily grade**.
Make up practical exams are difficult.
You should make every effort to take the lab practical exams when they are scheduled.
No make up practical exams will be given for unexcused absences.

All lab materials will be provided except for pencils, paper and a notebook. Drawings and calculations are best done in pencil so that errors can be corrected more easily. In most cases, you will work with a lab partner, or in a small group; however you are individually responsible for completing and turning in work sheets.
When you have completed the lab please return all equipment (slides, microscopes, glassware, etc.) to the proper storage area.
No tobacco products, smokeless or otherwise, are allowed in the science building, or on the Ranger College campus.

XI. Course Outline/Schedule

Course Calendar

Text: "Campbell Biology: Concepts and Connections" 9Th edition

Class	Lecture Topic	Text Assignment
1	Introduction to class	Chs 1
2	Recap fall, plate tectonics / radiometric	Ch 15
3	Early Earth and the origin of life	"
4	Classification of life – prokaryotes, eukaryotes	Ch 16
5	"	"
6	Evolution and trends of animal diversity	Ch 18
7	**EXAM 1** (Early Earth history)	
8	Lower animals- acoeloms	" , Ch 20 - 30
9	Higher animals - protostomes	"
10	Higher animals - deuterostomes	Ch 19
11	Chordates	"
12	**EXAM 2** (Animals)	
13	Plants Nonvascular plants / early vascular plants	Ch 17
14	Gymnosperms and Angiosperms	" , Ch 31, 32
15	Characteristics and ecology of Fungi	"
	Spring Break	
16	**EXAM 3** (Plants)	
17	Introduction to ecology	Ch 34
18	Population dynamics	Ch 36
19	Life history and behavior	"
20	Behavioral adaptation to the environment	Ch 35
21	Communities - interactions	Ch 37
22	**EXAM 4** (Ecology – populations)	
23	Communities and interactions	"
24	Biodiversity and biomes	Ch 34
25	Trophic structure and productivity	"
26	Ecosystems and nutrient cycles	"
27	nutrient cycle imbalances	"
28	"	Ch 38
29	**EXAM 5** (Ecology – communities and ecosystems)	
30	**FINAL EXAM**	

XII. 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.

XIII. ADA Statement

Ranger College provides a variety of services for students with learning and/or physical disabilities. Students are responsible for making initial contact with the Ranger College Counselor, Gabe Lewis (glewis@rangercollege.edu). It is advisable to make this contact before or immediately after the semester begins.