# BIOLOGY 1313_002 GENERAL ZOOLOGY (3 CREDIT HOURS)
## Fall 2021 Sul Ross State University

**Lecture:** MWF 9:00 am -9:50 am, WSB 201
**Instructor:** Ms. Anne Marie Hilscher **Office:** WSB 220 **Phone:** 432.837.8820
**Office Hours:** MWF 10-11:30; M 1:00-3:00; T 10:50-11:30 & 1:00-3:00;
R 10:50-11:30 & 1-3; & by appt.
**Email:** ahilscher@sulross.edu (Type **Biology 1313_002** in subject line)

**TEXTBOOK NOT REQUIRED.** ANY COLLEGE-LEVEL TEXT WILL WORK. THIS IS THE TEXTBOOK I HAVE USED IN THE PAST:
Miller, Stephen A. and John P. Harley. 2013. *Zoology,* 10th edition. McGraw Hill.
ISBN 978-0-07-783727-3; ISBN 0-07-783727-4

### COURSE DESCRIPTION
General Zoology provides a general survey of the animal kingdom, which considers the fundamentals of biological facts, laws, and principles as they apply to animals and functions of the organs and systems of representative animals.

### COURSE OBJECTIVES
1) Students will identify, recall, and label basic cellular structures and processes.
2) Students will identify animal-like protists and classify organisms within the kingdom Animalia
3) Students will be able to summarize and explain the processes of evolution.
4) Students will be expected to demonstrate understanding of the genetic code and how it relates to protein synthesis.
5) Students will understand physiological systems, such as aerobic respiration and reproduction

### ATTENDANCE
- Missing any test/exam without notifying me in advance will result in a zero for that exam grade—no exceptions. You must email or tell me in person before the test/exam.
- You will have FIVE days (including weekends) from the test date to make up a missed test; often, the makeup will be different from the original exam. If you fail to appear (on time) for your scheduled test or a makeup test, you will be given a zero.
- If you arrive for test/exam after other students have completed and turned in their exam, you will not be allowed to take the test/exam.
- Finally, if you miss a class, it is your responsibility to get notes and other important information from a classmate.

### GRADING

| | |
|---|---|
| Student Introduction | 20 |
| Comprehension Tests (3 @ 100 pts) | 300 |
| Assignments (2 @ 40 pts ea) | 80 |
| Final lecture exam | 120 (comprehensive) |
| **TOTAL** | **520 points** |

The use of books, notes, cell phones, etc. during exams is not permitted. The only item allowed at your desk during an exam is a writing implement.

| WEEK | DATE | MWF 9:00-9:50am |
|---|---|---|
| **1** | M Aug 23 | Zoology & the Ecological Perspective |
| | W Aug 25 | The Chemistry of Life |
| | F Aug 27 | The Chemistry of Life |
| **2** | M Aug 30 | Cells, Tissues, Organs |
| | W Sep 01 | Cell Division and Inheritance (Mitosis & Meiosis)<br>***Student Introductions due*** |
| | F Sep 03 | DNA Structure, DNA Replication |
| **3** | ***M Sep 06*** | ***No Class – Labor Day*** |
| | W Sep 08 | DNA Replication, cont. |
| | F Sep 10 | Protein Synthesis; ***A#1 due*** |
| **4** | M Sep 13 | Animal Taxonomy |
| | **W Sep 15** | **Comprehension Test #1** |
| | F Sep 17 | Cellular Respiration |
| **5** | M Sep 20 | Cellular Respiration, cont. |
| | W Sep 22 | Evolution: Gene Frequencies |
| | F Sep 24 | Evolution: Gene Frequencies, cont. |
| **6** | M Sep 27 | Reproduction & Development |
| | W Sep 29 | Reproduction & Development, cont. |
| | F Oct 01 | Poriferans |
| **7** | M Oct 04 | Cnidarians |
| | W Oct 06 | Cnidarians, cont. |
| | F Oct 08 | Platyhelminthes |
| **8** | M Oct 11 | Wrap-up and Review |
| | **W Oct 13** | **Comprehension Test #2** |
| | F Oct 15 | Annelids |
| **9** | M Oct 18 | Nematodes |
| | W Oct 20 | Intro to Arthropods |
| | F Oct 22 | Crustaceans |
| **10** | M Oct 25 | Crustaceans |
| | W Oct 27 | Hexapods |
| | F Oct 29 | Hexapods, cont. |
| **11** | M Nov 01 | Intro to Chordates; Fishes |
| | W Nov 03 | Fishes, cont. |
| | F Nov 05 | Amphibians; ***A#2 due*** |
| **12** | M Nov 08 | Amphibians, cont. |
| | **W Nov 10** | **Comprehension Test #3** |
| | F Nov 12 | Reptiles |
| **13** | M Nov 15 | Reptiles, cont. |
| | W Nov 17 | Birds |
| | F Nov 19 | Birds, cont. |
| **14** | M Nov 22 | Mammals |
| | **Nov 24-26 NO CLASSES -Thanksgiving Holidays** | |
| **15** | M Nov 29 | Mammals, cont. |
| | W Dec 01 | LAST CLASS -- Wrap-up and Review |
| **16** | ***Final Exam December ___ @ _____*** | |

**STUDENT LEARNING OUTCOMES (SLOS)**

The graduating biology student graduating with a BS in Biology should be able to:

1) The student will be able to demonstrate an understanding of basic biological concepts, including but not limited to evolution via natural selection, cell theory, and the role and function of DNA.
2) The student will be able to demonstrate utilization of various field techniques toward addressing scientific questions in the specific discipline. These field techniques can include, but are not limited to, plant collection and processing, various animal collection techniques, ecological surveying and sampling, and biodiversity indexing.
3) The student will be able to use biological instrumentation to solve biological problems using standard observational strategies.
4) The student will develop writing skills by summarizing and critiquing recent relevant biological literature.

**CORE OBJECTIVES ADDRESSED:**

1) Communication Skills – Students will effectively communicate the results of scientific investigations; using oral, written, and visual communication, either in group discussions or on written exams.
2) Critical Thinking Skills – Students will include creative thinking, innovation, inquiry, and analysis required to relate new information with previous information in a way that demonstrates the diversity and similarity due to evolutionary ancestry.
3) Empirical and Quantitative Skills – Students will use basic math skills to solve problems (e.g. related to genetic outcomes, cellular energy production, and probability) resulting in informed conclusions.
4) Teamwork Skills – Students will work effectively with others to support a shared goal during lab sessions on activities, such as dissections, problem solving, and other experimental procedures.

**MARKETABLE SKILLS:** A student getting a degree in the Biological sciences would be expected to acquire the following marketable skills by graduation.

1) Students will be able to organize, analyze, and interpret data.
2) Students will be proficient at using presentation software.
3) Students will acquire experience in managing time and meeting deadlines.
4) Students will gain the ability to speak effectively and write concisely about scientific topics.
5) Students will acquire experience and guidance in the development of professional email correspondence.

**ADA Statement**: Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. Students with qualifying disabilities who seek accommodations must initiate a request for a meeting for accessibility services. Students seeking accessibility services must contact Rebecca Greathouse Wren, M.Ed., LPC-S, Counseling & Accessibility Services, Telephone: 432-837-8203, or email: rebecca.wren@sulross.edu. For more information see: https://www.sulross.edu/page/1384/accessibility-services

**SRSU Library Services.** The Sul Ross Library offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, library.sulross.edu. Off-campus access requires your LoboID and password. Check out materials using your photo ID. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or phone (432-837-8123).

**COVID-19.** COVID-19 Response: Hand sanitizer stations are placed at all building entrances and students are encouraged to use them in addition to handwashing. Given the high level of contagion of this coronavirus and the implications of its disease COVID-19, it's highly recommended you wear a mask and socially distance in public spaces.

**Educator Standards.** For students seeking certification, this course will cover aspects of the following SBEC educator standards and competencies for Science EC-6 Standard IV:

Competency 002 (History and Nature of Science): *The teacher understands the history and nature of science, the process and role of scientific inquiry and the role of inquiry in science instruction.* A,J,M,N,P

Competency 003 (Impact of Science): *The teacher understands how science impacts the daily lives of students and interacts with and influences personal and societal decisions.* S,T,U

Competency 004 (Concepts and Processes): *The teacher knows and understands the unifying concepts and processes that are common to all sciences.* C,F,H

Competency 005 (Students as Learners and Science Instruction): *The teacher has theoretical and practical knowledge about teaching science and about how students learn science.* C,F,G,H

Competency 006 (Science Assessment): *The teacher knows the varied and appropriate assessments and assessment practices for monitoring science learning in laboratory, field and classroom settings.* B,C,D

Competency 011 (Structure and Function of Living Things): *The teacher understands the structure and function of living things.* H,I,J,L

Competency 012 (Reproduction and the Mechanisms of Heredity): *The teacher understands reproduction and the mechanisms of heredity.* A,B,C,E

Competency 013 (Adaptations and Evolution): *The teacher understands adaptations of organisms and the theory of evolution.* A,F,G

Competency 014 (Organisms and the Environment): *The teacher understands the relationships between organisms and the environment.* B,C,D,E,F