

BIOL 1306
BIOLOGY FOR MAJORS I
SUL ROSS STATE UNIVERSITY
FALL 2023



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Course Meeting Times: Tues/Thurs 11:00 a.m.-12:15 p.m. in WSB 201.

Office Hours: M 9-11 & 2:00-3:00; W 9-11; R 2:00-3:00; F by appt. Please email me at any time. I will respond within 24 hours (up to 48 hours on weekends).

Highly Recommended Text: Urry, L., M. Cain, S. Wasserman, and P. Minorsky, 2017. *Campbell Biology 11th ed.* Pearson Publications

Tentative Schedule of Lectures and Topics (subject to change)

Week 1 (8/29 and 8/31)	Themes of Biology; Subdisciplines
Week 2 (9/05 and 9/07)	Chemical Context of Life
Week 3 (9/12 and 9/14)	Water & Life; Carbon and Molecular Divisions of Life; ARTICLE SUMMARY #1 DUE
Week 4 (9/19 and 9/21)	Macromolecules; Review
Week 5 (9/26 and 9/28)	EXAM 1; Tour of the Cell
Week 6 (10/03 and 10/05)	Membrane Function and Structure; Metabolism
Week 7 (10/10 and 10/12)	Cellular Respiration & Fermentation; Photosynthesis
Week 8 (10/17 and 10/19)	Cell Communication & Signaling; ARTICLE SUMMARY #2 DUE
Week 9 (10/24 and 10/26)	Cellular Reproduction; Review
Week 10 (10/31 and 11/02)	EXAM 2; Meiosis & Sexual Reproduction
Week 11 (11/07 and 11/09)	Mendelian Genetics & Heredity; Basis of Inheritance
Week 12 (11/14 and 11/16)	DNA and the Molecules of Heredity <i>11/17: LAST DAY TO DROP WITH a "W." Submit paperwork before 4:00 PM.</i>
Week 13 (11/21)	DNA Structure & Function; ARTICLE SUMMARY #3 DUE 11/23: Thanksgiving Holiday—NO CLASS
Week 14 (11/28 and 11/30)	Gene Expression; Biotechnology
Week 15 (12/05)	Review; 12/07 Study Day—NO CLASS
Week 16 (12/11)	EXAM 3 Monday, 11 Dec @ 10:15-12:15

GRADING

Exams (3 @ 100 points)	300	67%
Journal Article Summaries (3 @ 50 points)	150	33%
TOTAL	450	100%

COURSE OBJECTIVES:

- 1) Learn the subdisciplines of biology and their applications to modern science.
- 2) Understand the molecular basis of life.
- 3) Recognize major cell structures and their functions.
- 4) Analyze cell division and reproduction.
- 5) Understand genes and chromosomes.
- 6) Understand the role of DNA and RNA in the process of protein synthesis.
- 7) Understand cellular respiration and photosynthesis.

STUDENT LEARNING OUTCOMES (SLOS) The 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 the 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 writingskills by summarizing and critiquing recent relevant biological literature.

CORE OBJECTIVES ADDRESSED:

- 1) Communication Skills – Students will effectively communicate the results of scientificinvestigations, using oral, written, and visual communication, either in group discussions or on written exams.
- 2) CriticalThinking 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.

SRSU Attendance Policy. Roll will be taken during each class meeting. The SRSU catalog states “The instructor may, at their discretion, drop a student from a course when the student has a total of nine absences in lecture and three absences in lab. An absence is defined as non-attendance in fifty minutes of class. Exams must be taken on the scheduled exam date that will be announced at least a week prior unless other arrangements have been made with the instructor. Exams must be made up within a week form the scheduled date. **RULE TO LIVE BY: DON’T MISS ANY CLASSES!** If you absolutely must miss, make sure you let me know before.

Academic Integrity. Students in this class are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation is appreciated. Examples of academic dishonesty include but are not limited to: Turning in work as original that was used in whole or part for another course and/or professor; turning in another person’s work as one’s own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden.

SRSU Disability Services. SRSU Disability Services. Sul Ross State University (SRSU) is committed to equal access in compliance with Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student’s responsibility to initiate a request each semester for each class. Alpine students seeking accessibility/accommodations services must contact Mary Schwartz Grisham, M.Ed., LPC, SRSU’s Accessibility Services Coordinator at 432-837-8203 (please leave a message and we’ll get back to you as soon as we can during working hours), or email mschwartz@sulross.edu Our office is located on the first floor of Ferguson Hall (Suite 112), and our mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas, 79832.

Technical Support. SRSU 24/7 Blackboard Technical Support: Phone: 888.837.6055. Email: blackboardsupport@sulross.edu

SRSU Library Services. The Bryan Wildenthal Memorial Library in Alpine 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 by phone (432-837-8123).

Classroom Climate of Respect. This class will foster free expression, critical investigation, and open discussion of ideas. This means that all of us must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. Similarly, we must all learn how to probe, oppose, and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another based on race, religion, ethnicity, age, gender, national origin, or sexual preference. Still, we will not be silenced by the difficulty of fruitfully discussing politically sensitive issues.

Diversity Statement. SRSU aims to create a learning environment for my students that supports a diversity of thoughts, perspectives, and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, socioeconomic class, age, nationality, etc.). We also understand that the crisis of COVID, economic disparity, health concerns, or even unexpected life events could impact the conditions necessary for you to succeed. Our commitment is to be there for you and help you meet the learning objectives of this course.