

BIOL 1306 – Biology I for Majors Fall 2023 Syllabus

INSTRUCTOR AND COURSE DESCRIPTION

Instructor: Dr. Thornton R. Larson
appt

Office Hours: M 9 AM to Noon; T 2 PM to 4 PM; or by

Office: WSB 221

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Email: trl21jz@sulross.edu

Lectures: Monday/Wednesday 2:00 PM to 3:15 PM

Laboratory: Depends on lab section

Course Description

This course is meant to be part 1 of an overview into biology as a whole. This course will cover the foundational aspects of biology including the makeup of basic biological components and what makes up a living thing. Working in a standard biological perspective starting small with elements growing into single celled organisms and their structure, function, and their ability to replicate and diversify. These concepts will directly feed into Biology II for Majors where the discussion regarding more complex, multicellular organisms with cell specialization occurs.

This course will include concepts that include the molecular makeup of life, what is a cell, basic structure and functions of cells, cellular respiration, photosynthesis, cellular metabolism and an introduction to cellular genetics and proliferation of cells. These form the basis of understanding how structure and function relate in living things leading to the diversity of life at micro levels that can be applied later on to more macro level concepts and scientific questions.

This course will introduce the scientific method and modern research papers to promote scientific literacy early in the curriculum to create scientists able to follow scientific protocol and understand the purpose of experimentation. From these basic steppingstones we will develop fully independent and objective biologists able to function within laboratories and in natural field work by the end of the program in biology.

Required Materials

Internet to connect to openstax biology textbooks the link for this particular textbook is:

<https://openstax.org/details/books/biology-2e>

Labs will be posted on Blackboard

Exams and Grading

Lecture:

3 lecture exams (each 20% of total grade)	60%
3 Lecture Assignments (each 10% of total grade)	30%
Attendance	10%

Lab:

Prelab Quizzes (8)	10%
Group Assignments (4)	20%
Individual Assignments (2)	20%
Group Presentation (1)	25%
Research Summary (1) (Individual)	25%

A 90 – 100% B 80 – 89% C 70 – 79% D 60 – 69% F <60%

COURSE OBJECTIVES, LEARNING OUTCOMES, MARKETABLE SKILLS, POLICIES, AND UNIVERSITY SERVICES

Course Objectives: At the end of the semester, students will:

1. Display a basic knowledge of biology from the chemical makeup to how it replicates.
2. Know the basic building blocks of biology.
3. Know what constitutes a cell and the differences between different basic cell types.
4. Understand what a living thing is.
5. Understand the basic levels of photosynthesis and respiration in cells.
6. Demonstrate how function and structure are related in biology

Student Learning Outcomes (SLOs) for Biology:

1. Demonstrate an understanding of evolution by natural selection.
2. Demonstrate an integration of environmental awareness into everyday modern life.
3. Understanding how to incorporate molecular biology into the study of the whole organism.
4. Demonstrate utilization of various field techniques toward addressing scientific questions in the discipline.
5. Conduct basic laboratory experiments utilizing standard observational strategies.

Marketable Skills

1. Ability to organize, analyze, and interpret data.
2. Proficiency in using presentation software.
3. Experience in managing time and meeting deadlines.
4. Ability to speak effectively and write concisely about scientific topics.
5. Experience in the development of professional email correspondence.

Attendance:

Mandatory. Roll will be by sign in sheet at front of the class. I am allowed to drop you from my class if you miss more than six times (that accounts for 3 full weeks of lecture). I generally do not drop you myself so don't expect that I will. I do not wish to hear excuses for missing class and do not want to hear about it every time you are gone. Absences are excused only if you have a documented, university-approved excuse (hospitalization, funeral, etc.) **DO NOT MISS EXAMS** unless you have a documented, university-approved excuse. If you do not inform me of your approved absence before the exam, it will be a ZERO.

Late Work Policy:

Late work is frowned upon for assignments to be turned in. All assignments will be due turned in to the appropriate assignment section (Blackboard or other online program) before class starts that day. That means if class starts at 11:00 AM the assignment is in Blackboard by 10:59.59 AM. After this time, you will lose 10% on the assignment. After 24–48 hours late it will be 20% off, and 48–72 hours late it will be 30% off. Beyond these times it will be a '0' on the assignment. These terms are meant to respect both timeliness and flexibility of deadlines and will be upheld.

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).

SRSU Disability Services:

ADA (Americans with Disabilities Act) 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. Students seeking accessibility/accommodations services must contact Rebecca Greathouse Wren, LPC-S, 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 rebecca.wren@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

ACADEMIC HONESTY:

The University expects all students to engage in all academic pursuits in a manner that is beyond reproach and to maintain complete honesty and integrity in the academic experiences both in and out of their classroom. The University may initiate disciplinary proceeding against a student accused of any form of academic dishonesty, including but not limited to, cheating on an examination or other academic work, plagiarism, collusion, and the abuse of resource materials. "Cheating" includes 1. Copying from another student's test paper, laboratory report, other report, or computer files, data, listings, and/or programs, or allowing another student to copy from same. 2. Using, during a test, materials not authorized by the person giving the test. 3. Collaborating, without authorization, using, buying, selling, stealing, transporting, soliciting, copying, or possessing, in whole or in part, the contents of a non-administered test. 5. Substituting for another student; permitting any other person, or otherwise assisting any other person to substitute for oneself or for another student in the taking of an examination or test or the preparation of academic work to be submitted for academic credit. 6. Bribing another person to obtain a non-administered test or information about a non-administered test. 7. Purchasing, or otherwise acquiring and submitting as one's own work any research paper or other writing assignment prepared by an individual or firm. This section does not apply to the typing of a rough and/or final version of an assignment by a professional typist. 8. "Plagiarism" means the appropriation and the unacknowledged incorporation of another's work or idea in one's own written work offered for credit. 9. "Collusion" means the unauthorized collaboration with another person in preparing written work offered for credit. 10. "Abuse of resource materials" means the mutilation, destruction, concealment, theft or alteration of materials provided to assist students in the mastery of course materials. 11. "Academic work" means the preparation of an essay dissertation, thesis, report, problem, assignment, or other project that the student submits as a course requirement or for a grade. 12. "Falsification of Data" means the representation, claim, or use of research, data, statistics, records, files, results, or information that is falsified, fabricated, fraudulently altered, or otherwise misappropriated or misrepresented. All academic dishonesty cases may be first considered and reviewed by the faculty member. If the faculty member believes that an academic penalty is necessary, he/she may assign a penalty but must notify the student of his/her right to appeal to the department chair, the dean and eventually, to the Provost and Vice President for Academic and Student Affairs before imposition of the penalty. At each step in the process, the student shall be entitled to written notice of the offence and/or of the administrative decision, an opportunity to respond, and an impartial disposition as to the merits of his/her case. The decision of the Provost and Vice President for Academic and Student Affairs shall be final.

I will reiterate here, I take academic dishonesty and plagiarism very seriously. Citations are your friend.

Classroom Climate of Respect

Importantly, this class will foster free expression, critical investigation, and the 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 on the basis of 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

"I aim 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.). I also understand that the crisis of COVID, economic disparity, and health concerns, or even unexpected life events could impact the conditions necessary for you to succeed. My commitment is to be there for you and help you meet the learning objectives of this course. I do this to demonstrate my commitment to you and to the mission of Sul Ross State University to create an inclusive environment and care for the whole student as part of the Sul Ross Familia. If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you."

For Remote/Online Courses Only - SRSU Distance Education Statement.

Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should correspond using Sul Ross email accounts and submit online assignments through Blackboard, which requires secure login. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website. Directions for filing a student complaint are located in the student handbook.

TENTATIVE LECTURE SCHEDULE

	TOPIC	Chapter
<i>Week 1 Aug 28th</i>	Welcome/ Student Expectations/ Syllabus	
	The Study of Life	Chapter 1
<i>Week 2 Sept 4th</i>		
	Labor Day no lecture Mondays/Tuesdays?	
	Chemical Context of life	Chapter 2.1
<i>Week 3 Sept 11th</i>		
	Water	Chapter 2.2
	Carbon Journal Summary 1 due 9/13	Chapter 2.3
<i>Week 4 Sept 18th</i>		
	Macromolecules	Chapter 3
	Review	
<i>Week 5 Sept 25th</i>		
	Exam 1	
	The Cell	Chapter 4
<i>Week 6 Oct 2nd</i>		
	Plasma Membranes Structure and Function	Chapter 5

	Cellular Metabolism: How Cells Function	Chapter 6
<i>Week 7</i> Oct 9th		
	Cellular Respiration and Photosynthesis	Chapter 7 and 8
<i>Week 8</i> Oct 16th		
	Cell Communication and Signaling	Chapter 9
	10/18 Journal Summary 2 Due	
<i>Week 9</i> Oct 23rd		
	Cellular Reproduction	Chapter 10
	Review	
<i>Week 10</i> Oct 30th		
	Exam II	
	Meiosis and Sexual Reproduction	Chapter 11
<i>Week 11</i> Nov 6th		
	Mendelian Genetics and Heredity	Chapter 12
	Chromosomes and Inheritance	Chapter 13
<i>Week 12</i> Nov 13th		
	DNA the Molecules of heredity	Chapter 14
<i>Week 13</i> Nov 20th		
	DNA Structure and Function; 11/20 Journal Summary 3 Due	Chapter 15
	Thanksgiving No Class Wed/Thurs?	
<i>Week 14</i> Nov 27th		
	Gene Expression	Chapter 16
	What can we do with it? Biotechnology and Genomics	Chapter 17
<i>Week 15</i> Dec 4th		
	Review	
	No Class Wed/Thurs for Mental Health Day	
<i>Week 16</i>	FINALS Tuesday, Dec 12 3 PM to 5 PM	

LAB SCHEDULE

	DATE	TOPIC
<i>Week 1</i>	Aug 28	No Lab
<i>Week 2</i>	Sept 4	Scientific Method
<i>Week 3</i>	Sept 11	Data Analysis, Presentation, and Writing (Library 2nd Floor)
<i>Week 4</i>	Sept 18	Microscopy and Cells
<i>Week 5</i>	Sept 25	Macromolecules
<i>Week 6</i>	Oct 2	Diffusion and Osmosis
<i>Week 7</i>	Oct 9	Enzymes
<i>Week 8</i>	Oct 16	Open Lab (Dr. Larson or Ms. Hilscher will be present to help with writing questions)
<i>Week 10</i>	Oct 23	Cellular Respiration and Photosynthesis
<i>Week 10</i>	Oct 30	Cell Cycle; Meiosis; Mitosis
<i>Week 11</i>	Nov 6	Nucleic Acids
<i>Week 12</i>	Nov 13	Presentations
<i>Week 13</i>	Nov 20	Thanksgiving End of Labs