Biology 3302: 001, VMC, V01 / 5323:001 (ALP/DR/EP/UV/MC)
Evolution – Fall 2024
Lecture M-W 9:30-10:45 AM WSB 107 or personal computer
Syllabus

Instructor: Dr. Christopher M. Ritzi
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Phone: 837- 8420
Email: critzi@sulross.edu
Office hours: TR 9:30-10:45, W 2:00-5:00 PM., or appt.

Class Website: https://www.sulross.edu/bb/ and http://faculty.sulross.edu/critzi/

Text: Evolution: In Introduction. 2nd Edition. Stearns & Hoekstra.

Course Description: Evolution is a course that ties together many different aspects of science, including genetics, cell biology, paleontology, and reproductive biology. The goal of this course is to develop an understanding of how microevolution and macroevolution together have shaped the world we live in today.

Student Learning Outcomes for Undergraduates in the Program

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.

Student Learning Outcomes for Graduates in the Program

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

1) Understanding and implementation of scientific methodology.

2) Utilization of field techniques toward addressing scientific questions.

3) Be able to utilize statistics toward the analysis of data within the discipline.

4) Be able to effectively disseminate scientific findings using both written and oral communication.

Student Learning Objectives for this Course:

1) Students will define the genetic basis of evolution.

2) Students will illustrate knowledge of the interaction between genetic and environmental components.

3) Students will demonstrate an understanding of the different levels of evolution at the micro and macro levels.

4) Students will demonstrate an understanding of the mechanics of reproductive behavior in fitness.

Marketable Skills:

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.

Tests: There will be three exams over the course of the term, including a non-comprehensive final exam. Each exam will cover approximately one quarter of the course material as outlined below. The exact timing of these exams will be flexible in keeping with the progress of the lectures. However, in the spirit of fairness, students will be given at least 1 week notice prior to the date of each exam. Exams shall consist of multiple choice/short answer/short essay during class. In addition, graduate students will be required to complete a set of several take-home questions as secondary exams for each in-class exam.

Grading: Your grade will be assigned based on the percentage of points you get out of total possible. Each exam will account for between 200 and 250 points.

Attendance: Students missing 20% of lectures (6 lectures) may be dropped from the class per the SRSU catalog. Any student dropped for excessive absences will receive an F for the course grade. Please notify your instructor BEFORE missing class for authorized activities, death in the family, or illness. Exams missed for any reason must be made up within one week of the originally scheduled date. REGARDLESS OF WHY AN ABSENCE OCCURS, YOU MAY BE GIVEN AN F FOR THE COURSE GRADE IF YOU ACCUMULATE SIX ABSENCES.

Lecture courtesy: The general rules of classroom etiquette are below.

1) Please do not talk to others in class while the instructor is lecturing. If you have a question, ASK THE INSTRUCTOR! That's what I'm here for.

2) No eating, chewing, dipping, etc.
3) Please turn cell phones and pagers to silent while in class. They are disruptive to the entire class, and detract from learning.

SUBJECTS TO BE COVERED

DATE	LECTURE TOPIC	CHAPTER
Aug 26	Introduction and the Idea that Changed the World	1
Aug 28	Adaptive Evolution	2
Sept 2	Labor Day Holiday – No Class	
Sept 4	Adaptive Evolution	2
Sept 9	Neutral Evolution	3
Sept 11	Genetic Impacts on Selection	4
Sept 16	Genetic Impacts on Selection	4
Sept 18	Origin and Maintenance of Variation	5
Sept 23	Development in Evolution	6
Sept 25	Expression of Variation	7
Sept 30	Expression of Variation	7
Oct 2	Exam I	
Oct 7	Evolution of Sex	8
Oct 9	Genomic Conflict	9
Oct 14	Life Histories and Sex Allocation	10
Oct 16	Life Histories and Sex Allocation	10
Oct 21	Sexual Selection	11
Oct 23	Sexual Selection	11
Oct 28	Exam II	
Oct 30	Macroevolution and Speciation	12
Nov 4	Macroevolution and Speciation	12
Nov 6	Phylogeny and Systematics	13
Nov 11	Phylogeny and Systematics	13
Nov 13	Comparative Methods	14
Nov 18	Exam III	
Nov 20	Key Events in Evolution	15

Nov 25	Major events in Geology that Shaped Evolution	16
Nov 27	Thanksgiving Break – No Class	
Dec 2	The Fossil Record	17
Dec 4	Coevolution	18
Dec 5	Dead Day	
Dec 6 10:15 am	Final exam on **Friday** – Dec 6th	

Note – This outline is subject to change for reasons of course interest, time constraint, or instructor whim. The exams will be administered on the dates given, unless material relevant for a given exam has not been covered. Under such cases, an exam may be moved a class period or two to aid in the clarity and understanding of the material.

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. Students seeking accessibility/accommodations services must contact 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 counseling@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, SUI Ross State University, Alpine. Texas, 79832.

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.

Libraries: 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 logging in with your LobolD and password. Librarians are a tremendous resource for your coursework and can be reached in person, by email (srsulibrary@sulross.edu), or phone (432-837-8123).

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.

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.

Supportive Statement: I aim to create a learning environment for my students that supports various perspectives and experiences. I understand that the recent pandemic, economic disparity, and health concerns, or even unexpected life events may 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 a supportive 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.