



BIOL 211

SP 2018

General Biology I: Ecology & Evolution

What is this course about?

This active learning lecture and laboratory course presents a large scale, evolutionary framework for biological systems. The course includes experiential learning in a semester-long service learning research project. The course uses a rigorous, but practical, observational approach to basic evolutionary processes, biodiversity and the ecology of ecosystems. This course is the first of two parts for a two-semester general biology sequence, which is required of students who major in biology.

What you need before you take this course

Eligibility or completion of Math 120 and English 111 or completion of Biology 110.

Teaching Assistant

Eric Brown

Email: ebrown18@live.nmhu.edu, Ph.505-454-2238

Office Hours: HSCI 311, Wed. 3-5 pm and Thurs. 12-1 pm.

Supplemental Instruction Leader

Johnny Martinez, Email: amartinez100@live.nmhu.edu

ARMAS Phone: 505-425-2010

Class Meets

TR 2-3:15

Lora Shields 215

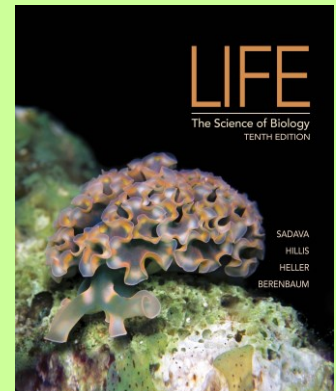
Labs Thursday

8-9:50 or 10-11:50

HSCI 367

Required Materials:

1. iClicker remote or REEF Polling subscription
2. LIFE, Edited by Sadava, Hillis, Heller, & Berenbaum, 10th ed.



DR. COREY-RIVAS

Office Hours HSCI 133
M 12:30-2, T 3:30-4:30

Email me for the fastest
response:

sjcorey@nmhu.edu

Ph: 505-454-3301

How will the course be conducted?

This course will be taught in a **learner-centered environment** using high impact practices including group activities, discussion, and lecture with PowerPoint using a SmartBoard. The lab portion of the course includes an integrated semester-long service-learning project with student group designed research and a final presentation and report to community partners at the Rio Mora National Wildlife Refuge. Activities punctuated with lectures are designed to convey critical information and foster active and inquiry-based learning. Presentation outlines will be posted on D2L prior to class. Students are also responsible for reading the assigned book readings before class. "iClicker" questions during class will be used to assess learning goals and gauge level of participation. Do not hesitate to ask questions or add information during class! Exams are given electronically on D2L and will assess students on their knowledge of the subject and critical thinking skills.

Supplemental Instruction

This course has a Supplemental Instruction Leader (SIL) who is a near-peer mentor available during class and in SI sessions at ARMAS to help you learn study skills and navigate the course. Your SIL is not a lecturer or test bank so please respect their role as your course mentor.

In this course, you will learn to...

COURSE OBJECTIVES	UNIVERSITY CORE TRAITS
✓ Communicate in the biological arena	Effective communication Effective use of technology
✓ Distinguish evolution as a process of natural selection acting on heritable genetic variation	Critical and reflective scientific thinking Mastery of Content Knowledge and Skills
✓ Measure and analyze relevant data for the solution of a biological problem using biological instrumentation.	Critical and reflective scientific thinking Mastery of Content Knowledge and Skills Effective use of technology
✓ Discuss the limitations and potentials of science in social issues.	Effective communication
✓ Compare processes at the population, community, and ecosystems levels of organization	Mastery of Content Knowledge and Skills Critical and reflective scientific thinking
✓ Map and explain the interdependence of organisms including human beings.	Mastery of Content Knowledge and Skills Critical and reflective scientific thinking Effective communication
✓ Recognize and distinguish among the diversity of life and the fundamental forces that have shaped this diversity.	Mastery of Content Knowledge and Skills Critical and reflective scientific thinking Effective communication

Service-Learning Research

Our lab time will include a semester-long service learning research project in collaboration with the Rio Mora National Wildlife Refuge.

"Service learning is a collaborative...learning strategy designed to promote academic enhancement, personal growth, and civic learning. Students render meaningful service in community settings that present them with experiences related to academic material....Students, faculty, and community members all serve as co-educators, co-learners, co-servers, and co-generators of knowledge."

To carry out your group research project, you will talk with wildlife refuge managers, visit the refuge, grow native plants in the NMHU greenhouse, and collect data. The product of this project will be a scientific report and oral presentation summarizing your results for the class and the RMNW Refuge. The learning objectives for this project are:

1. Identify important ecological restoration goals with Rio Mora service partners.
2. Use the scientific method to design and conduct a controlled experiment in the greenhouse that answers a scientific question within the theme of ecology and evolution that is useful to the Rio Mora community.
3. Work professionally in groups to carry out your experiment.
4. Analyze data and produce a scientific report.
5. Reflect about your experience and the value of serving your community.
6. Communicate your scientific findings to the class and our Rio Mora partners.

Information for Educators

Competencies for Elementary Teachers (general competencies and special reference to Science)

<http://www.nmcpr.state.nm.us/nmac/parts/title06/06.061.0002.htm>

Competencies for Secondary Teachers (general competencies)

<http://www.nmcpr.state.nm.us/nmac/parts/title06/06.061.0004.htm>

Standards and Benchmarks for P-12 Science

<http://www.ped.state.nm.us/MathScience/dl08/Standards/ScienceStandardsV2.pdf>

Laboratory Activities

Lab assignments including four lab reports will be due by one week after the lab in the D2L Dropbox. This Dropbox has a plagiarism checker *Turnitin* that you can use to get feedback on the originality of your writing. Group work in lab is for collaboration and ideas. **Writing up your report or assignment will be individual work in your own voice** (see policy 7 below). Laboratory TAs will collect and grade all lab reports and exercises therefore questions concerning grading should be directed to them. Labs can be **made-up only with permission from the instructor**. If you know that you are going to have to miss a lab and have a university approved excuse (policy 1 below) let the instructor know in advance so that we can arrange to save the material or make it available at other times.

Course Evaluation *(Subject to slight modification as necessary)*

LECTURE (65%)

30%	Three Exams
15%	Comprehensive Final Exam** **60% or higher on Final to pass class**
10%	D2L Online Quizzes (Drop lowest quiz)
10%	In-Class Activities & iClicker Participation

Grading Scale (%)

A+	97-100
A	93-96
A-	90-92
B+	87-89
B	83-86
B-	80-82
C+	77-79
C	70-76
D	60-69
F	Below 60

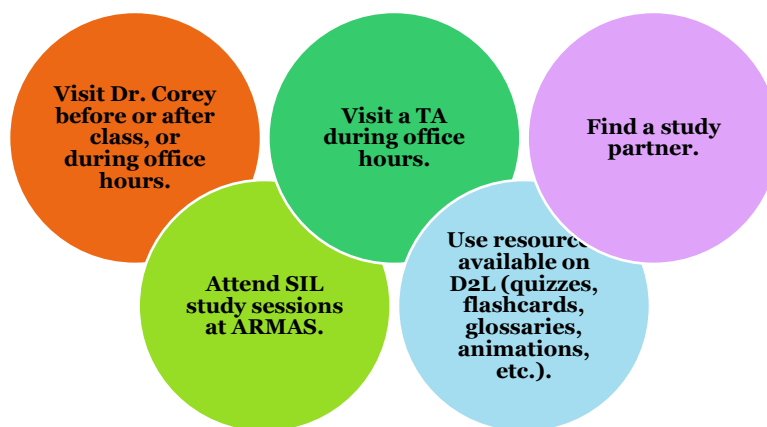
LABORATORY (35%)

- 8% Lab exercises and attendance
- 15% Three full laboratory reports

Service Project

- 4.5% Service reflection writing & peer evaluations
- 5% Research Report
- 2.5% Oral Presentation in Group

When you need help...



Class Policies

- Attendance is required (Come to class!).** iClickers will be used to take attendance. Attendance and active participation is required and will contribute towards your final grade. Missed exams and assignments cannot be made up except for students who can document the following: illness or injury, health emergency or death in the family, natural disaster or other unavoidable circumstance; involvement in a formal university activity. *It is your responsibility to keep track of what happens in class and to check your email or D2L for any class announcements.*
- Respect your classmates and the instructor by being quiet while others are talking to the class. Talk and listen attentively in group discussions. Talking disruptively in class will result in loss of attendance points.
- In class "clicker" quizzes or other in-class assignments **cannot** be made up. Quizzes are given timed online on D2L and are available for one week starting from their announcement in class. **Prior permission** by the professor is required to make up online quizzes, problem sets, and exams.
- Read and Participate!** Students are expected to complete assigned readings prior to class and positively

contribute to in-class learning activities.

- All class participants are expected to conduct themselves in a professional manner.
- Communication:** Dr. Corey will make announcements on D2L and during class. You are responsible for checking announcements.
- Academic Integrity (Don't cheat!):** Students and faculty are expected to share the responsibility for maintaining high standards of academic honesty and integrity. Cheating on exams, quizzes, or in lab reports will not be tolerated. Plagiarism, using someone else's words or ideas and passing them off as one's own, is a form of cheating. The software "Turnitin" will be used to screen documents for plagiarism. If you have any questions about how to write or use group data when writing, please see Dr. Corey. Please feel free to discuss assignments and exams with the professor or with your classmates, but remember that all cooperation should end when you begin to write. Cheating of any kind will result in a grade of "0" for the assignment, and a notice that a second instance of plagiarism will result in the student being reported to the Dean of the College of Arts & Sciences. Please consult the NMHU Academic Integrity Policy handout, available on the D2L site.

Disability Services Information

"In accordance with federal law, it is university policy to comply with the Americans With Disabilities Act (ADA). If you believe that you have a physical, learning, or psychological disability that requires an academic accommodation, contact the Coordinator of Disability Services by phone at (505) 454-3188 or 454-3252, via e-mail at desquibel@nmhu.edu, or visit Room 108 of the Felix Martinez building on the Las Vegas campus. If you need the document upon which this notice appears in an alternative format, you may also contact the Coordinator of Disability Service." David Esquibel Student Advisor/Coordinator of Testing and Disability Services.

HU-CARES Information

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you are encouraged to contact the Center for Advocacy, Resources, Education, & Support (HU-CARES) located in the Student Union Building at 800 National Ave in Suite 306. If you have questions or need to speak to someone regarding a concern, please call HU-CARES at 505-454-3529 or email preventviolence@nmhu.edu. HU-CARES can support you in various ways, regardless if you want to report to police or not. **All services are confidential, student-centered, and free for all NMHU students, including center campuses.**

Additional resources available to you include:

- Student Health Center Main Campus-(Counseling) 505-454-3218
- Campus Police 505-454-3278
- NMHU Dean of Students 505-454-3020
- Human Resources, Title IX Officer 505-426-2240
- NM Crisis & Access Line (Professional Counselors available 24/7) 1-855-662-7474

Center students are encouraged to contact HU-CARES for resources near the center campuses.

Electronic Devices in the Classroom Policy

Computers may be used to support the learning activities in the classroom. These include such activities as taking notes and accessing course readings under discussion. However, non-academic use of laptops and other devices are distracting and seriously disrupt the learning process for everyone. Neither computers nor other electronic devices are to be used in the classroom for non-academic reasons. This includes emailing, texting, social networking and use of the internet. The use of cell phones during class time is prohibited, except for using the phone to place iClicker votes. Cell Phones should be set on silent before class begins. In the case of an emergency, please step out of the room to take the call. Failure to meet these expectations may result in a loss of participation points or to be asked to leave class.

Course Schedule (*subject to change at Instructor's discretion*)

Week of	Chapter Readings	Lab & Service-Learning Research	Assessments
17 Jan	1: Studying Life	Intro to service research project	
EVOLUTION			
22 Jan	1: Studying Life 21: Mechanisms of Evolution	Designing Experiments: Service learning & Native seed germination	Ch 1 Quiz

29 Jan	21: Mechanisms of Evolution	Greenhouse w/ Rio Mora Seed Cleaning; Seed adaptations	
5 Feb	21: Mechanisms of Evolution	Oystercatcher selection	Ch 21 Quiz Oystercatcher Lab Report
12 Feb	22: Reconstructing and Using Phylogenies	Rio Mora Seed Planting Greenhouse	Feb 13 Tuesday Exam 1, Ch 21
19 Feb	22: Reconstructing and Using Phylogenies	Candy Cladogram Trees	Ch 22 Quiz
26 Feb	23: Speciation	Lizard Evolution Lab Part I	Ch 23 Quiz
5 March	23: Speciation & Value of Biodiversity	Lizard Evolution Lab Part II	March 6 Tuesday Exam 2, Ch 22, 23
12 March	<i>SPRING BREAK No Class</i>	No lab	
ECOLOGY			
19 March	54: Ecology & Distribution of Life	Campus tree population demographics (Field)	Tree Pop Lab Report
26 March	55: Population Ecology	Las Vegas Wildlife Refuge (Field) Ecotones & brochure	Ch 54 Quiz Ecotone Brochure
2 April	56: Species Interactions & Coevolution	Measuring Biodiversity Part I (Field)	Ch 55 Quiz
9 April	56: Species Interactions & Coevolution	Measuring Biodiversity Part II (Lab)	Ch 56 Quiz Biodiversity Lab Report
16 April	57: Community Ecology	Rio Mora Field Ecology Trip (Field)	April 17 Tuesday Exam 3: CH 1, 54, 55, 56
23 April	58: Ecosystems & Global Ecology	Native seeds project data analysis	Ch 57 Quiz Ch 58 Quiz
30 April	59: Biodiversity & Conservation Biology	Native seeds Project Presentations (Lab Report)	Ch 59 Quiz Oral presentation & Lab Report
7 May	Cumulative Final Thursday May 10th, 8-10:30 am		Final Exam <i>All chapters, with emphasis on Ch 57, 58, 59</i>