

Conservation Biology, BIOL 3470
Spring 2021, 3 Credits
Fulfills requirements for CEL, AS, & SUSL

Course Instructor –Lucas Moyer-Horner

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Office Location – BIOL room 103

Office Hours – By appointment

TH 12:25-1:45

JTB310

Community Engaged Learning Coordinator (CEL) – Amanda Hoepfner

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Office Location – Bldg 44, Rm 221

Office Hours – By appointment

*Please direct any CEL related questions to Dr. Hoepfner

TAs: TBA

COURSE OVERVIEW

This class will focus on the defining principles of ecology and conservation biology. We will explore the nature of rarity, how human impacts influence rarity in the natural world, and what actions we can take to reduce or reverse the negative impacts. We will also explore issues of environmental justice and equity and discuss how sustainable development practices can address those issues. The class will discuss current conservation management, monitoring, and research techniques, with a particular emphasis on population biology and species interactions. Students will get hands-on experience in applying conservation techniques and science communication by collaborating with conservation-oriented community partners working in the field.

EXPECTED LEARNING OUTCOMES

By the end of this course students should be able to:

1. Define major principles, scales, patterns, and research methods of conservation biology
2. Identify the major human threats to biodiversity and environmental equity, and what members of our community are doing to address those threats
3. Understand common methods for diminishing those threats and restoring degraded populations and ecosystems, using real-world examples and community partners
4. Explain the defining processes in population biology, metapopulation dynamics, and species interactions
5. Build skills for problem solving real-world conservation and environmental equity issues using interdisciplinary, integrative, and applied methods through collaboration with community partners.

APPLIED SCIENCE ESSENTIAL LEARNING OUTCOMES

This course meets the Applied Science General Education requirement. As such, I will require that you practice certain professional skills in addition to attaining the above-described learning outcomes. These skills include collaborative teamwork and oral communication, both of which will be achieved during CEL work and a small-group research presentation.

INSTRUCTOR-TA-STUDENT INTERFACE

For Spring 2022, Biology 3470 will be meeting in-person for most of the semester. In order to protect everyone from COVID-19, masks are strongly recommended (except for those with approved accommodations for disabilities), and social distancing will be enforced.

In order to participate in the online components of the course, you will need to have access to a computer and a broadband internet connection. You will also need to be able to use Canvas, Zoom, and other online

resources effectively. Please contact the instructor as soon as possible if you have concerns about these requirements. Further details are provided in the sections below.

Current information about the university's response to COVID-19 can be found at:
<https://coronavirus.utah.edu/>

In order to help monitor the spread of COVID-19 and respond appropriately, the university is requiring that all students complete a reporting form if they have been exposed to, are being tested for, or have been diagnosed with COVID-19.

CANVAS will be the expected method of communicating outside of class lectures. Lecture slides, class assignments & announcements, dates of exams, community engaged learning opportunities, grades etc. will all be posted to CANVAS. You are expected to check the site regularly and stay up to date.

COURSE TEXT - Required

Primack & Sher. *An Introduction to Conservation Biology*, 2016 (newer or older edition ok).
This textbook is an excellent reference for class lectures. Assigned reading is required and will complement the lecture material.

INSTRUCTION METHODS

This course will be taught using a variety of methods including lectures, group discussions, guest speaking, project site visits and community partner engagement. The expectation for the class atmosphere is one of reciprocity and open-mindedness. We will explore ideas from multiple points of view, including yours.

CLASS POLICIES

Attendance & Participation: Attendance is required for work with the community partners and in-class activities, and cannot be made up later (see dates below). If you must miss one or more of those sessions because you are sick, quarantined, or for other reasons, please email the instructor before the class session. You will not be able to make up the points if you email after the missed session. Attendance is not required for normal lectures, but strongly suggested. Those who attend class will understand the class material better and likely have higher exam scores. Exam questions will come from lectures, both by the instructor and guests, and student research presentations (for Exam 3). Lecture slides will be posted on canvas after each lecture.

Cell Phones & Computers: Feel free to use your laptop/tablet during class to view lecture slides and take notes. However, please do **not** feel free to surf the web, text your friends, or engage in behaviors that are generally considered rude during a class. All phones should be in silent mode during class.

Cheating/Plagiarism: Not tolerated. Considered academic misconduct. Standard U of U policy will be followed which can include a grade reduction, a failing grade, probation, suspension or dismissal from a program or the University, or revocation of a student's degree or certificate, community service, and a written statement of misconduct put into your student and professional record.

COURSE GRADES: Exams & Assignments

Exams: There will be 3 non-cumulative exams based on class lectures, guest lectures, & group presentations. Expect a mix of fill in the blank, true/false, multiple choice, and short paragraph answers.

Group CEL Project Work: You will get hands-on experience in applying conservation biology skills by collaborating on a project with conservation-oriented community partners. You will be assigned to a group of ~5 students that will tackle one of these real-world projects for our community partners. (*More details on CEL Group Project* [handout](#). *Some of these may change*).

- HawkWatch International: Kestrel nestbox monitoring for the American Kestrel Study
- Salt Lake County Open Space "Wetlands In a Box" Habitat Restoration

Group CEL Research Presentation: In addition to the hands-on CEL project work, your assigned group will conduct background research on a question related to your CEL work and develop an ~8-minute oral presentation to present to class. Topics will be assigned to each group after CEL projects are determined during the second week of class.

Community Engaged Learning Days & Reflection Discussions: You will participate in three in-class CEL workdays and one reflection discussion in addition to the project described above. Graded on attendance. See calendar below.

Evaluation Methods & Criteria: 550 possible points: 300 from Exams & 250 from CEL.

In-Class Exams: 300 possible points for 2 best grades out of 3. Each exam is worth 150 pts. I will automatically drop the worst of your 3 exam grades. There will be NO MAKEUP exams. If you are absent, for any reason, on exam day, that zero automatically becomes your dropped grade.

Dates: Feb 8, Mar 3, Apr 26

CEL Project Work Final Report: 100 points.

As a group, you will plan, develop, and implement your CEL work throughout the course of the semester, per your community partner's expectations. You will submit a 4-5 page final report detailing your work, connecting it to broader conservation biology topics, and reflecting on how it impacted you (plan for the reflection portion to be ~1 page). In addition to the 4-5 pages of text, you will submit a time log of each team member's time spent on the project. You must also include at least 3 pictures of your team conducting the CEL work.

Grading: 3 components: 1) quality of the final report, **50 points**, 2) completing the work itself (we ask that you spend ~20-25 hours on the project over the course of the semester), **25 points**; and 3) peer review, **25 points**. Final Reports are due before the third exam date, uploaded to canvas by **Sun, April 24**, by midnight.

CEL Research Presentation: 70 points.

Your group will also be assigned a topical question related to your CEL work. Your group will conduct research, both in the library and online, and you will present the results of your research to the class in a ~8-minute PowerPoint presentation. **DATES: April 5 & 7**

Grading: 2 components: 1) quality of presentation, **50 points** and 2) Peer review, **20 points**, due **Apr 8**

The quality of your presentation includes the following components: professional use of PowerPoint, depth and accuracy of content, works cited, & connectivity to broader conservation biology issues.

CEL Group Work & Reflection days: 80 points, 20 points each.

- Three CEL group workdays **DATES: Jan 25, Feb 25, Mar 24**. Your group will have the class time to work on your project and/or research presentation.
- The penultimate day of class **DATE: Apr 21** will include a reflection discussion. You will be asked to reflect on the successes and weaknesses of your CEL project, and contemplate your future contributions to community work and conservation biology. *Attendance is mandatory and you cannot make up these points.*

Extra Credit CEL Activities:

- 1) **Attend Lecture: TBA, extra credit points for attending**
- 2) **City Nature Challenge with The Natural History Museum Of Utah (NHMU): TBA**

CALENDAR

Week/Date	Topic	Reading	Assignments
Week 1 T Jan 10 H Jan 12	Syllabus review/ What is Conservation Biology & Biodiversity? Natural Selection and Scales of Biodiversity	Chapter 1 Chapter 2	N/A N/A
Week 2 T Jan 18 H Jan 20	Value of Biodiversity The Nature of Rarity	Chapter 3 Chapter 2	Choose CEL project
Week 3 T Jan 25 H Jan 27	<u>CEL Group Workday 1-Research topics chosen</u> Threats to Biodiversity 1	N/A Chapter 4	CEL Attendance <i>In-class time for group projects</i> N/A
Week 4 T Feb 1 H Feb 3	Threats to Biodiversity 2 Extinction & Endangered Spp	Chapter 5 Chapter 6	N/A N/A
Week 5 T Feb 8 H Feb 10	Exam 1 Population Dynamics	Chapter 7	Exam N/A
Week 6 T Feb 11 H Feb 13	Wildlife ecology methods case study New Populations and Ex Situ Conservation	N/A Chapter 8	N/A N/A
Week 7 T Feb 15 H Feb 17	Science Communication & discussing controversies Biodiversity & Conservation in UT	"The Size of the Board" McKibben article N/A	N/A N/A
Week 8 T Feb 22 H Feb 24	Protected Areas <u>CEL Group Workday 2</u>	Chapter 9 N/A	N/A CEL Attendance <i>In-class time for group projects</i>
Week 9 T Mar 1 H Mar 3	Guest visit- Amy Sibul, Invertebrate Conservation: Pollinators and Beyond Exam 2	N/A	N/A Exam
Week 10 T Mar 8 H Mar 10	SPRING BREAK		
Week 11			

T Mar 15	Conservation Tools	Chapter 10	N/A
H Mar 17	Protecting Habitat	Chapter 10	N/A
Week 12 T Mar 22	Grad student lectures: Austin Green and/or David Blount	N/A	N/A
H Mar 24	<u>CEL Group Workday 3</u>		CEL Attendance <i>In-class time for group projects</i>
Week 13 T Mar 29	Restoration Ecology	Chapter 11	N/A
H Mar 31	Ecosystem Conservation & Sustainable Development	Chapter 12	N/A
Week 14 T Apr 5	CEL Research Project Presentations		Class Pres
H Apr 7	CEL Research Project Presentations		Class Pres
Week 15 T Apr 12	Conservation Biology & the Future	Chapter 13	N/A
H Apr 14	Bruce Pavlik guest lecture, Plant conservation at the U of U's Red Butte Garden	N/A	N/A
Week 16 T Apr 19	<u>Site Visit: RBG</u>	N/A	
H Apr 21	<u>CEL Reflection, final thoughts</u>	N/A	N/A
Week 17 T Apr 26	Exam 3		Exam

No final exam, but you must upload your CEL Final Report to Canvas April 24, by midnight!

Note: This syllabus is meant to serve as an outline and guide for the course. Please note that the instructor may modify it at any time so long as reasonable notice of the modification is provided to students. The instructor may also modify the General Course Outline at any time to accommodate the needs of a particular class. Should you have any questions or concerns about the syllabus, it is your responsibility to contact the instructor for clarification.

Academic Conduct

In order to ensure that the highest standards of academic conduct are promoted and supported at the University, students must adhere to generally accepted standards of academic honesty. Acts of academic misconduct include cheating, plagiarizing, research misconduct, misrepresenting one's work, and inappropriately collaborating. Suspected cases of academic misconduct are dealt with according to the rules found in the Student Code, University Policy 6-400(V): <http://www.regulations.utah.edu/academics/6-400.html>.

The Americans with Disabilities Act

The University of Utah seeks to provide equal access to its programs, services, and activities for people with disabilities. If you will need accommodations in this class, reasonable prior notice needs to be given to the Center for Disability Services, 162 Olpin Union Building, 801-581-5020. CDS will work with you and the instructor to make arrangements for accommodations. All written information in this course can be made available in an alternative format with prior notification to the Center for Disability Services.

Addressing Sexual Misconduct.

Title IX makes it clear that violence and harassment based on sex and gender (which includes sexual orientation and gender identity/expression) is a civil rights offense 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, color, religion, age, status as a person with a disability, veteran's status or genetic information. If you or someone you know has been harassed or assaulted, you are encouraged to report it to the Title IX Coordinator in the Office of Equal Opportunity and Affirmative Action, 135 Park Building, 801-581-8365, or the Office of the Dean of Students, 270 Union Building, 801-581-7066. For support and confidential consultation, contact the Center for Student Wellness, 426 SSB, 801-581-7776. To report to the police, contact the Department of Public Safety, 801-585-2677(COPS).

Names/Pronouns

Class rosters are provided to the instructor with the student's legal name as well as "Preferred first name" (if previously entered by you in the Student Profile section of your CIS account, which managed can be managed at any time). While CIS refers to this as merely a preference, I will honor you by referring to you with the name and pronoun that feels best for you in class or on assignments. Please advise me of any name or pronoun changes so I can help create a learning environment in which you, your name, and your pronoun are respected. If you need any assistance or support, please reach out to the LGBT Resource Center.

https://lgbt.utah.edu/campus/faculty_resources.php

Campus Safety

The University of Utah values the safety of all campus community members. To report suspicious activity, call campus police at **801-585-COPS (801-585-2677)**. You will receive important emergency alerts and safety messages regarding campus safety via text message. For more information regarding safety and to view available training resources, including helpful videos, visit safeu.utah.edu. Wellness Statement. Personal concerns such as stress, anxiety, relationship difficulties, depression, cross-cultural differences, etc., can interfere with a student's ability to succeed and thrive at the University of Utah. For helpful resources contact the Center for Student Wellness at

www.wellness.utah.edu or 801-581-7776.

Diversity / Inclusivity

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for

you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you. (Source: University of Iowa College of Education) Further examples of diversity statements: <https://ctl.yale.edu/DiversityStatements>

Veterans Center

If you are a student veteran, the U of Utah has a Veterans Support Center located in Room 161 in the Olpin Union Building. Hours: M-F 8-5pm. Please visit their website for more information about what support they offer, a list of ongoing events and links to outside resources:

<http://veteranscenter.utah.edu/>. Please also let me know if you need any additional support in this class for any reason.

English Language Learners

If you are an English language learner, please be aware of several resources on campus that will support you with your language and writing development. These resources include: the Writing Center

(<http://writingcenter.utah.edu/>); the Writing Program (<http://writingprogram>).

<http://continue.utah.edu/>); the English Language Institute (<http://continue.utah.edu/eli/>). Please let me know if there is any additional support you would like to discuss for this class.

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I have thoroughly read the entire syllabus for Spring 2022 Biol3470, Conservation Biology. I have asked for clarifications if needed, and I understand the course requirements and grading criteria.

Print your Name and UID

Signature and Date