

BIOLOGY 375 H02: CONSERVATION BIOLOGY

INSTRUCTORS:	Dr. Maria Stanko	EMAIL:	mstanko@njit.edu
OFFICE:	CKB 340E ▪ (973) 642-7976	OFFICE HOURS:	R: 11:30am – 2:30pm or by appointment
COURSE SCHEDULE:	M & W: 1:00PM–2:20PM, FMH 309	COURSE WEBSITE:	https://canvas.njit.edu/

COURSE DESCRIPTION:

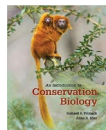
Conservation biology is a developing and complex field. It draws upon the biological disciplines of population biology, taxonomy, ecology, genetics, and resource management as well as the fields of economics, ethics, and politics to document, understand, and protect the world's biodiversity. This course will give students an overview of this emerging discipline including the scientific methods employed, the biological principles behind conservation techniques and strategies, as well as the complexities involved in attempts to influence and implement conservation-oriented policies. The Honors section of this course will focus on problem-solving and communication in conservation biology and will involve extensive reading and discussion of scientific and popular literature on conservation issues, exploration of conservation case studies, writing assignments, and a collaborative applied conservation project.



PREREQUISITES:

- Foundations in Biology: Ecology & Evolution (BIOL 205 & 206 or R120: 205 & 206)
- Foundations in Biology: Cell & Molecular (BIOL 201 & 202 or R120:201 & 202)

REQUIRED TEXT:



- Primack, Richard B., and Anna A. Sher. 2016. *An Introduction to Conservation Biology*. Sinauer Associates, Inc.



- Kolbert, Elizabeth. 2014. *The Sixth Extinction: An Unnatural History*. Henry Holt and Co.

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ADDITIONAL READINGS:

Throughout the semester, I'll be providing additional readings to supplement the course text and to serve as the basis for class discussions. These readings will be posted to the course Canvas site.

PROJECT: As a class, we will work together throughout the semester to design and implement a collaborative project that has application to a conservation problem on our campus or local environment. Project assessment will involve largely independent work contributing to the group project. Tasks may vary depending on the nature of the project chosen, but will involve data collection, writing, and oral presentation.

LEARNING OUTCOMES:

Students should be able to:

- Identify and explain important threats to biological diversity as well as the variety of approaches to protecting biodiversity.
- Describe the ways that human activity contributes to threats to biodiversity, including climate change
- Read critically and be able to form and articulate opinions on complex issues in conservation biology.
- Explain the interdisciplinary nature of the practice of applied conservation biology.
- Research and present a report (including written component) on an applied topic in conservation biology.

GRADING POLICY:

Grades will be calculated based on the proposed point distribution below. Slight changes may be made to this point distribution; you will be notified of any changes.

COMPONENT	POINTS
Assignments	40 points
Quizzes	20 points
Project	100 points

COMPONENT	POINTS
Midterm Exams	150 points
Final Exam	150 points
TOTAL	460 points

- Please note that participation in class discussions is part of your grade!
- Periodically, short assignments will be given, primarily related to course readings and casestudies.
- Exams will be predominantly short-answer style. The Final Exam is cumulative, with a stronger emphasis on the chapters since Midterm Exam 2.

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COURSE POLICIES:

Electronics/Cell Phone Policy:

Please don't use your cell phone in class; laptops permitted for note-taking and case study research.

Attendance:

I expect you to attend all the lectures; you are responsible for all material covered in the lectures.

Make-Up Exams and Quizzes:

Make up exams and quizzes will be permitted only with a doctor's or a dean's letter or with prior approval. If you have a serious reason for missing an exam, you must contact me BEFORE the scheduled exam period to notify me that you cannot take the exam.

Course Website: You must check Canvas regularly and ensure that you regularly check the email address associated with your Canvas profile.

Late Assignments: Late assignments will be accepted but penalized 10% per day late.

Academic Integrity: I have a zero tolerance policy for academic dishonesty, including plagiarism and cheating. If you have any questions about what constitutes plagiarism or cheating, please ask me or refer to the academic integrity code: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

COURSE OUTLINE: *Please note that this is the proposed schedule. I reserve the right to make changes to the schedule when needed; you will be notified of any changes. Additional readings and assignments will be posted to the course website. Do not schedule travel until date is posted:* <https://www.njit.edu/registrar/exams/>



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DATE	LECTURE TOPIC	READINGS / ASSIGNMENTS (COMPLETE BEFORE CLASS)
W – 1/22	About this course; Defining Conservation Biology; Geography Review	ICB Chapter 1 (pp. 2-20), Godet and Devictor 2018
M – 1/27	Biodiversity: Species Diversity & Genetic Diversity.	ICB Chapter 2 (pp. 22- 32)
W – 1/29	Discussion: 6th Ex Prologue & Chap. 1, Case Study: Biodiversity of Spiders	6th Ex Prologue & Chap. 1 Case Study 1
M – 2/3	Ecosystem Diversity	ICB Chapter 2 (pp. 33-41)
W – 2/5	Patterns of Biodiversity	ICB Chapter 2 (pp. 41-50)
M – 2/10	Valuing Biodiversity	ICB Chapter 3 (pp. 52-80)
W – 2/12	Ethics & Economics	ICB Chapter 3 (pp. 80-89), Leopold 1949, Kareiva & Marvier 2007, Kloor 2015
M – 2/17	Human Population Growth, Habitat Destruction	ICB Chapter 4 (pp. 90-106)
W – 2/19	Fragmentation & Environmental Degradation	ICB Chapter 4 (pp. 106-118)
M – 2/24	Climate Change & Overexploitation	ICB Chapter 4 (pp. 118-132)
W – 2/26	Invasive Species & Disease	ICB Chapter 4 (pp. 132-148)
M – 3/2	Discussion: 6th Ex Chaps. 2-5	6th Ex Chaps. 2-5
W – 3/4	MIDTERM EXAM 1	MIDTERM EXAM 1
M – 3/9	Extinction	ICB Chapter 5 (pp. 150-172), Pyron 2017, Safina 2018
W – 3/11	Problems of Small Populations, <i>Project Planning</i>	ICB Chapter 5 (pp. 172-191), Case Study 2
M – 3/16	SPRING BREAK - NO CLASS	Swaigood & Sheppard 2010 & responses
W – 3/18	SPRING BREAK - NO CLASS	Swaigood & Sheppard 2010 & responses
M – 3/23	Case Study: Genetic Drift & Applied Population Biology	Case Study 3, ICB Chapter 6 (pp. 192-212)
W – 3/25	Conservation Categories, Legal Protection	ICB Chapter 6 (pp. 212-233)
M – 3/30	Establishing New Populations, Ex Situ Conservation Strategies, Technology	ICB Chapter 7 (pp. 234-263)
W – 4/1	Case Study: Designing a Zoo	Case Study 4
M – 4/6	Protected Areas: Establishment & Design	ICB Chapter 8 (pp. 264-286)
W – 4/8	Protected Areas: Management & Challenges.	ICB Chapter 8 (pp. 286-303)
M – 4/13	Discussion: 6 th Ex Chaps. 6-11	6th Ex Chaps. 6-11
W – 4/15	MIDTERM EXAM 2	MIDTERM EXAM 2
M – 4/20	Conservation Outside Protected Areas	ICB Chapter 9 (pp. 304-335)
W – 4/22	Restoration Ecology	ICB Chapter 10 (pp. 336-361), Donlan et al. 2005, Kolbert 2016
M – 4/27	Sustainable Development	ICB Chapter 11 (pp. 362-391)
W – 4/29	<i>Project Presentation</i>	
M – 5/4	Discussion: 6th Ex Chaps. 12-13 and the Future	Radiolab “Galápagos”, 6th Ex Chaps. 12-13, ICB Chapter 12 (pp. 392-410)
TBD	FINAL EXAM WEEK: MAY 8-14, 2020	