

BIOLOGY 375-H02: HONORS CONSERVATION BIOLOGY

INSTRUCTOR: Dr. Maria Stanko

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OFFICE HOURS: M: 11:30AM – 2:00PM or
by appointment

COURSE SCHEDULE: T, R: 2:30PM- 3:55PM CKB 320

COURSE WEBSITE: <http://moodle.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/Writing Intensive 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, and two major writing assignments.



PREREQUISITES:

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

REQUIRED TEXT:

- A Primer of Conservation Biology, Fifth Edition: Paper Text © 2012 by Richard B. Primack; ISBN: 978-0878936236.

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 Moodle site.

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LEARNING OUTCOMES:

Students are able to...

- Identify and explain important threats to biological diversity as well as the variety of approaches to protecting biodiversity.
- Read critically and be able to form and articulate opinions on complex issues in conservation biology.
- Independently research and present an oral report on a chosen topic in conservation biology.

WRITING INTENSIVE/HONORS: This NJIT honors course fulfills the Rutgers writing intensive requirement. Students enrolled in the Honors section will complete two (2) 5-10 page research papers, in addition to all other assignments for the course. One paper will be written in the style of a long-form journalism article about the role and work of a particular local conservation worker and/or conservation organization. Research for this paper will include conducting an interview with someone working in conservation in New Jersey. The second research paper will be a "book chapter" in the style of the chapter in the course text *The Sixth Extinction*, using a single species to highlight major issues in conservation biology. For each writing assignment, a complete draft is due prior to the final due date. You will receive extensive comments on your draft which you should incorporate into your revisions. Only the final version of the paper will be graded, though submission of incomplete drafts will result in a penalty of up to 20% from your final grade on each paper.

GRADING POLICY: Grades will be calculated based on the proposed point distribution at right. Slight changes may be made to this point distribution; you will be notified of any changes.

GRADES	POINTS
Participation	30 points
Assignments	50 points
Midterm	100 points
Final Exam	150 points
Honors Papers	150 points
Total	480 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 case studies.
- ⊕ Exams will be predominantly short-answer style. The Final Exam is cumulative, with an emphasis on the second half of the semester.
- ⊕ All students will research in detail some topic related to conservation biology and share what he/she researched in an 8 minute presentation to the class. Each student will propose his/her topic, to be approved by the instructor.

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COURSE POLICIES:

- ⊕ No electronics (cell phones etc.) in class; laptops permitted for note taking and case study research only.
- ⊕ I expect you to attend all the lectures; you are responsible for all material covered in the lectures.
- ⊕ You must update your Moodle profile with an email address that you will check regularly.
- ⊕ 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.
- ⊕ Late assignments will be accepted but penalized 10% per day late.
- ⊕ 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: [Academic Integrity Code](#).

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.*

DATE	LECTURE TOPIC	READINGS / ASSIGNMENTS
T – 1/17	About this course; Defining Conservation Biology; Geography Review	PCB Chapter 1 (pp. 3-17)
TH- 1/19	Biodiversity: Species Diversity & Genetic Diversity	PCB Chapter 2 (pp. 19- 27)
T – 1/24	<i>Discussion:</i> 6 th Ex Prologue & Chap. 1 <i>Case Study:</i> Biodiversity of Spiders	6 th Ex Prologue & Chap. 1 <i>Case Study 1</i>
TH – 1/26	Ecosystem Diversity	PCB Chapter 2 (pp. 27-33)
T – 1/31	Patterns of Biodiversity	PCB Chapter 2 (pp. 33-45)
TH – 2/2	Valuing Biodiversity: Direct & Indirect Economic Values	PCB Chapter 3 (pp. 47-66), Leopold 1949, Kareiva & Marvier 2007, Kaimowitz & Sheil 2007
T – 2/7	Ethics & Economics	PCB Chapter 3 (pp. 67-77)
TH – 2/9	Human Population Growth, Habitat Destruction	PCB Chapter 4 (pp. 78-98), <i>Case Study 2</i>
T – 2/14	Fragmentation & Environmental Degradation	PCB Chapter 4 (pp. 98-104)
TH – 2/16	Pollution & Climate Change	PCB Chapter 4 (pp. 104-116)
T – 2/21	Overexploitation	
TH – 2/23	Invasive Species, Disease	PCB Chapter 4 (pp. 116-132)
T – 2/28	Extinction	PCB Chapter 5 (pp. 135-150, Paper 1 Draft DUE)
TH – 3/2	<i>Case Study:</i> Red List Exploration	<i>Case Study 3</i>
T – 3/7	<i>Discussion:</i> 6 th Ex Chaps. 2-5 & Review	6 th Ex Chaps. 2-5, Wilson 1987, Terborgh 1988
TH – 3/9	MIDTERM EXAM	MIDTERM EXAM
▶	MARCH 12-19: SPRING BREAK – NO CLASSES	Swaigood & Sheppard 2010 & responses

T – 3/21	Problems of Small Populations & Applied Population Biology	PCB Chapter 5 (pp. 150-167), PCB, Chapter 6 (pp. 168-176)
TH – 3/23	<i>Case Study:</i> Genetic Drift	<i>Case Study 4</i>
T – 3/28	Applied Population Biology, Conservation Categories, & Legal Protection	PCB Chapter 6 (pp. 176-190)
TH – 3/30	Establishing New Populations & Ex Situ Conservation Strategies	PCB Chapter 6 (pp. 191-211), Paper 1 Final DUE
T – 4/4	<i>Case Study:</i> Designing a Zoo	<i>Case Study 5</i>
TH – 4/6	Protected Areas: Establishment & Design and Management	PCB Chapter 7 (pp. 213-252)
T – 4/11	<i>Discussion:</i> 6 th Ex Chaps. 6-11	6 th Ex Chaps. 6-11, Paper 2 Draft DUE
TH – 4/13	Conservation Outside of Protected Areas	PCB Chapter 8 (pp. 255-270)
T – 4/18	Restoration Ecology	PCB Chapter 8 (pp. 270-281), Kolbert 2016
TH – 4/20	Sustainable Development	PCB Chapter 9 (pp. 283-303)
T – 4/25	<i>Case Study:</i> Priority Setting	<i>Case Study 6</i>
TH – 4/27	<i>Discussion:</i> 6 th Ex Chaps. 12-13	Radiolab “Galápagos”, 6th Ex Chaps. 12-13, Paper 2 Final due
FINALS	FINAL EXAM WEEK: MAY 5-11, 2017	

FINAL EXAM – Do not schedule travel until date posted