BIOL 327: Conservation Biology 2020 – Syllabus

Tuesday & Thursday 12:50-2:30pm - ISC136

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Office Hours: MW 10:30am-12:00pm; T 8-9:30am

The schedules and policies associated with this course may be subject to revision or change as a consequence of changing circumstances or events. Reasonable notification will be provided to students prior to any major changes in course policies or procedures.

Course Goals

The primary goal of this course is to provide students with the tools they need to understand and appreciate biodiversity, to actively participate in the science and management of Earth's biological systems, and to develop their individual perspectives on how they can be responsibly engaged in the world. Following the course, the student should expect to:

- Comfortably read, interpret and synthesize scientific literature
- Persuasively argue their viewpoints while actively listening to, acknowledging and reflecting on the viewpoints of others
- Present scientific information in both oral and visual formats
- Work effectively as a member of a team
- Determine their own conservation priorities, and act on and advocate for them
- Become comfortable in camping situations and with camping equipment
- Understand the relationship between conservation priorities, socioeconomical issues, and geography

Required Textbook & Lab Material

- Kareiva, P and Marvier, M (2015). Conservation Science, 2nd edition. Balancing the Needs of People and Nature. Roberts and Company, Greenwood Village CO
- Scientific literature accessed from Concordia's library website or Moodle
- Dedicated notebook or journal

Attendance Policy

Regular attendance and participation in class is critical to your success in this class and at Concordia College. Because any absence, excused or unexcused, detracts from the learning experience, **you are expected to attend all classes**. Attendance in class is crucial to gaining participation points and participation in the spring break trip is required for the field component of the class (and 30% of the grade, see below). In extreme cases (4 unexcused absences), I may assign a failing grade.

If you know you will be gone for a school sanctioned event, please let me know ahead of time. If you are ill, please email me as soon as possible. **No matter the nature of your absence, you are still responsible for obtaining and understanding the material you missed.**

If you miss an exam for an excused absence (e.g. documented illness, travel for school sports or music) you must make arrangements with me to make up the exam in a time reasonable for the absence. The format of the make-up exam may be different than the one given in class.

Accommodations for Students with Disabilities

In accordance with the Americans with Disabilities Act, Concordia College and your instructor are committed to making reasonable accommodations to assist individuals with documented disabilities to reach their academic potential. Such disabilities include, but are not limited to, learning or psychological disabilities, or impairments to health, hearing, sight, or mobility. If you believe you require accommodations for a disability that may impact your performance in this course, you must schedule an appointment with Disability Services to determine eligibility. Students are then responsible for giving instructors a letter from Disability Services indicating the type of accommodation to be provided; please note that accommodations will not be retroactive. The Disability Services office is in Old Main 109A, phone 218-299-3514; https://cobbernet.cord.edu/directories/offices-services/counseling-center-disability-services/

Respect for Diversity

It is my intent that students from diverse backgrounds and perspectives be well-served by this course, and that the diversity that students bring to this class be viewed as a resource. Please let me know ways to improve the effectiveness of the course for you, personally, or for other students or student groups. As a student in this class, you are required to treat other members of the class with respect and kindness. Disrespectful, rude, or exclusive behavior will not be tolerated.

Academic Integrity (from Student Handbook)

"The Concordia community expects all of our members to act with integrity–to act with honesty, uprightness and sincerity. Every member of our academic community is charged with the responsibility of encouraging and maintaining an environment of academic integrity.

"Academic misconduct is defined as any activity that comprises the academic integrity of the college or undermines the educational process. Academic misconduct includes but is not limited to:

- cheating: using a resource other than one's own work to answer questions;
- plagiarism: misrepresenting another's ideas as one's own or not giving credit to the creator of a work;
- falsification: submitting falsified or fabricated information;
- facilitating others' violations: knowingly permitting or facilitating the dishonesty of others;
- impeding: placing barriers in the way of others' academic pursuits"

Concordia College has university-wide policies about academic integrity, and all students are responsible for being familiar with and adhering to them. These policies are in place to protect students, first and foremost. **My role as instructor is to teach each of my students how to become responsible scholars.** As a student at Concordia College and as a student in this class, you are expected to fully and properly acknowledge the work of others. Every instance of plagiarism will be reported, as per the policies of the college, but please do not hesitate to ask me in advance if you think something might be questionable or if you are unsure about what is considered to be plagiarism. I am happy to help, as long as you inquire in advance!

Grades

Category	Item	Date	%
Exams			
	Exam 1	Feb. 11	12
	Exam 2	Mar. 24	12
	Exam 3	Apr. 30	16
Journal Club			
	Discussion Leader 1		10
	Discussion Leader 2		10
	Discussion Participation	various	10
Field Trip			
	Trip Participation	various	15
	Field Notebook	Mar. 7	10
	Infographic Project	Mar. 31	5
Total		100%	

Percentage	Grade
≥ 94	A
90-93.9	A-
87-89.9	B+
83-86.9	B
80-82.9	B-
77-79.9	C+
73-76.9	C
70-72.9	C-
67-69.9	D+
60-66.9	D
< 60	F

EXAMS will be comprised of essay and short answer questions. You will be able to use your textbook, journal articles (printed), notes, and annotated bibliography (printed, see below) on the exams. You will hand in your annotated bibliography with each exam, and it will be worth 5% of that exam's grade. Answers will be graded based on the level of detail, evidence of comprehension of the literature and topics, and ability to interpret scientific graphs and tables.

JOURNAL CLUB discussions will consist of discussion leaders presenting the material in the scientific article and also providing any contextual information required to understand the paper. Discussion leaders will be expected to summarize the main points of the paper, including an overview of the methods, results, and main conclusions. The presentation of the paper should take about 30 minutes and can include a PowerPoint, although this is not required. After presenting the paper, discussion leaders should first ask for any questions that other students have about the paper, and then they will need to facilitate an indepth discussion of the paper and how it applies to topics that we are covering in class. Discussion leadership will be graded based on ability to synthesize the paper, teach the main methods and findings, and lead a discussion that includes everyone in the class.

All students are expected to read the paper ahead of the journal club and participate in the discussion. Bring questions about parts of the paper that you didn't understand. Discussion participation grade (out of 10) will be determined as follows:

- 10 points: Student participates in 13/13 discussions in which they did not lead.
- 9 points: Student participates in 11-12/13 discussions in which they did not lead.
- 8 points: Student participates in 9-10/13 discussions in which they did not lead.
- 7 points: Student participates in 7-8/13 discussions in which they did not lead.
- 6 points: Student participates in <7 discussions in which they did not lead.

If you miss a Journal Club because of an excused absence, you can hand in a one-page review of that paper that includes a summary of the main methods and findings as well as a discussion of how the paper applies to conservation science.

ANNOTATED BIBLIOGRAPHY should include all of the Journal Club papers. The format should be the paper cited with Ecology journal format, followed by an indepth summary of the paper's justification, goals, hypotheses (if applicable), methods, findings, and implications. The more indepth that this is, the better it will help you during the exams. You will hand in your annotated bibliography with each exam, and it will be worth 5% of that exam's grade.

FIELD TRIP PARTICIPATION will be based on your participation in discussions, driving, camp set-up and breakdown, cooking, cleaning, hikes and activities. Students will be assigned specific tasks and meals in which you will be expected to participate. Professional and respectful behavior will be required at all times on the trip. In order to pass the class, you will need to participate in and document 24 hours of field experience during the trip.

FIELD NOTEBOOK will be filled out daily or more often during our field trip. You will be required to add dates, location, weather, and descriptions of the activities. You will need to also include a reflection of the activity and a list of any skills obtained. You are responsible for keeping track of the number of hours of field work you participate in.

INFOGRAPHIC PROJECT will be done in groups of 2-3 students and based on a conservation issue that we discover during the field trip. Your group will be expected to create a visually clear and informative infographic outlining the conservation issues surrounding your topic of choice. More information will be provided in class.

Biology Department policy on use of electronic devices (phones, smart watches, laptops, tablets, etc.)

Faculty in the Biology Department work to make the classroom and laboratory a space conducive to student learning. We encourage writing notes by hand because it is an effective learning strategy for many students. However, the Biology Department also understands the valuable role of electronic devices in learning and scholarship. Thus, the Biology Department policy on the use of these devices in the classroom is as follows:

1. Electronic devices used during class time should be limited to appropriate class-related activities as outlined by the instructor. We reserve the right to check devices at any time and to ask you to put them away or leave if we see you using them inappropriately. Please reduce distractions to yourself and your fellow classmates.
2. All electronic devices must be set to silent during scheduled classroom and laboratory sessions. Tones and vibrations are distracting.
3. Only approved electronic devices (such as non-programmable calculators) may be available or used during examination periods. We expect that all non-approved electronic devices will be turned off and stored away from the exam areas.
4. Sharing calculators during exams is not allowed without permission.
5. Cheating in any form, including through use of an electronic device, will not be tolerated. See the academic integrity policy for more information.

   Inappropriate or distracting use of electronic devices in the classroom may adversely affect your grade.

Course Schedule (version dated 1/8/2020)

TUESDAY	THURSDAY
Jan 7th	9th **First Day of Class** Syllabus, Human Population
14th Kareiva & Marvier: Ch 1 ..... Introduction to Conservation Science, Human Impacts	16th Journal Club: Vitousek et al. 1997. Human domination of earth's ecosystems. Science 277:494-499 (Graham, Skyler)
21st Kareiva & Marvier: Ch 2 ..... Extinction and biodiversity	23rd Journal Club: Ceballos et al. 2015. Accelerated modern human-induced species losses: Entering the sixth mass extinction. Science Advancements. **and** Urban. 2015. Accelerating extinction risk from climate change. Science 348 (Emma, Sam)
28th Kareiva & Marvier: Ch 4 ..... Policy responses to conservation priorities	30th Journal Club: Dunn. 2002. Using decline in bird populations to identify needs for conservation action. Conservation Biology 16:1632-1637 (Tommy, Arthur)
Feb 4th Kareiva & Marvier: Ch 5 ..... Protected areas	6th Journal Club: Butt et al. 2016. Challenges in assessing the vulnerability of species to climate change to inform conservation actions. Biological Conservation 199:10-15 (Karl, Maya)
11th Exam 1	13th Journal Club: de Thoisy et al. 2016. Predators, prey and habitat structure: Can key conservation areas and early signs of population collapse be detected in neotropical forests? PLoS ONE 11:e0165362 (Marley, Mia)
18th Kareiva & Marvier: Ch 7 ..... Conservation genetics and small populations	20th Journal Club: Britt et al. 2018. The importance of non-academic coauthors in bridging the conservation genetics gap. Biological Conservation 218:118-123 (Jake, Casey)

TUESDAY	THURSDAY
25th Kareiva & Marvier: Ch 8 ..... Conservation population dynamics	27th Journal Club: Hedrick et al. 2019. Genetics and extinction and the example of Isle Royale wolves. Animal Conservation 22:302-309 (Leah, Faith)
Mar 3rd *Spring Break*	5th *Spring Break* Discussion leaders: (Emma, Olivia) & (Jake, Arthur) & (Maya, Casey)
10th Kareiva & Marvier: Ch 10 ..... Islands and metapopulation dynamics	12th Journal Club: Young. 2000. Restoration ecology and conservation biology. Biological Conservation 92:73-83 (Karl, Tommy)
17th Kareiva & Marvier: Ch 11-12 ..... Restoration, reintroduction, and adaptive management	19th Journal Club: Corlett. 2016. Restoration, reintroduction, and rewilding in a changing world. Trends in Ecology and Evolution 31 (Leah, Marley)
24th Exam 2	26th Dr. ArchMiller out of town, TBD
31st Kareiva & Marvier: Ch 13 ..... Forests and forestry	Apr 2nd Journal Club: Ramsfield et al. 2016. Forest health in a changing world: effects of globalization and climate change on forest insect and pathogen impacts (Skyler, Sam)
7th Kareiva & Marvier: Ch 14 ..... Agriculture and biodiversity	9th Easter break, no class
14th Kareiva & Marvier: Ch 15 ..... Water conservation	16th Journal Club: Erisman et al. 2016. Agriculture and biodiversity: a better balance benefits both (Mia, Faith)
21st Kareiva & Marvier: Ch 17 ..... Invasive species	23rd Journal Club: Courchamp et al. 2017. Invasion biology: specific problems and possible solutions. Trends in Ecology and Evolution 32 (Graham, Olivia)
28th Study day	30th Exam 3: 11am-1pm