Conservation Biology

Fall 2018 - BIOL 3307 (CRN: 32448)
Undergraduate Course, 3 credit hours

Dr. Brent Sewall
Office: 203 Biology-Life Sciences Building
Phone: 215-204-6115
Email address: bjsewall@temple.edu

Course meetings: Tuesday & Thursday, 11am – 12:20pm

Location: 306 Tuttleman Learning Center

Office hours: Tuesday & Thursday, 12:30 – 2:00 pm, and by appointment.

Pre-requisites:
The course “Principles of Ecology” (BIOL 2227) with a grade of C- or better is required for participation in this course.

Course Description:
The Earth harbors an incredible diversity of species and communities, most still poorly understood by science. This biodiversity is essential to the functioning of natural ecosystems and provides a wide array of priceless services to people today and a treasure of benefits for the future. Yet human threats to biodiversity have led us to the brink of the sixth major extinction event in Earth’s history. This loss of biodiversity, as E.O. Wilson put it, “is the folly our descendants are least likely to forgive us.”

Which populations, species, communities, and ecoregions are most diverse? Which are most threatened, and by which human activities? What is the contribution of biodiversity to human livelihoods? What does the science suggest is needed to conserve biodiversity? How might this best be done given social, economic, and political realities? We will examine all these questions and more in this course, focusing on the key principles of conservation biology and the application of those principles to conservation of terrestrial, freshwater, and marine ecosystems at local, national, and international scales.

Overall course goal:
The overall goal of this course is to develop student capacity to apply scientific principles and integrate diverse perspectives for the conservation of the Earth’s biodiversity.

Course objectives:
The course objectives are to foster understanding of:
(1) the ecological and evolutionary context of biodiversity;
(2) the anthropogenic threats biodiversity faces; and
(3) strategies to mitigate threats to biodiversity and sustain it over the long term.
Course Approach:
The course is organized to facilitate students’:
1. mastery of key concepts in the discipline of conservation biology;
2. critical thinking about issues relating to biodiversity and conservation;
3. understanding of diverse perspectives on biodiversity and conservation issues; and
4. capacity to understand the uncertainties, risks, and trade-offs inherent in different conservation strategies.

Course Format:
Conservation Biology is an integrative discipline, and we will likewise use a variety of techniques to facilitate learning. This course will integrate lecture, case studies, exercises, interactive activities, and readings from your textbook and the primary literature. We will also have a course website on Canvas, on which I will post announcements and supplementary materials. It is your responsibility to regularly check the website, and your Temple-based email account for announcements and potential schedule changes. If you are unfamiliar with Canvas, please see this tutorial video to get started:
https://community.canvaslms.com/videos/1124-canvas-overview-students

Required textbook:
The required textbook for this course will be *An Introduction to Conservation Biology* by Richard B. Primack and Anna A. Sher. It is available from the University bookstore, and from a variety of online and other sources. (Note: be sure you get the ‘Introduction’ book – Primack also has a couple of other textbooks by similar names). Here are details:


I’ve noted above that the publisher is Sinauer, but since publication of the book, Sinauer has become part of Oxford University Press. This book is available in new and used versions, and an e-book is available at redshelf.com (just enter in the ISBN on the home page).

Other readings, and class discussions on readings:
In addition to the text, we will read several articles from the primary literature. These articles, and the dates we will discuss them in class, are noted on the course schedule. It is important to have fully read and understood these articles prior to class so that we can have an engaged discussion. Please also bring a paper or electronic copy to class with you to facilitate the discussion. Material from these articles, and from the discussions of them, may be included on exams. Your participation in discussions of these articles will also become part of your attendance and participation grade.

Student-led discussions:
Each of you will take part in a small group that will lead a short discussion of an article I have assigned to class. I will explain in further detail in class, but the goal will be for you to lead
discussion of the article with the class. You may do a short overview of the article, such as with a PowerPoint presentation, but since students will already have read the article, this is simply a quick review. The main focus should be on generating discussion in the group. The total time your group should take to discuss the article is 25 minutes, with more than half of this time devoted to discussion or other interaction with the class about the article and its implications. Except in unusual circumstances, there will be a single group grade for your small group.

Midterm Exams:

We will have three midterm exams. Exams may be in a variety of formats (multiple choice, fill-in-the-blank, short-answer, essay questions, etc.). Exams will cover material from the textbook, readings from the primary literature, lecture, discussions, handouts, and the course website. You may not use notes, books, or calculators during the exams.

Integrative Presentation and Paper on an Emerging Issue in Conservation:

As part of a small group, you will be expected to identify an emerging issue in conservation. Then your group will research it, present it to the class, and write up a paper on it by the end of the semester. Together with your group, analyze the environmental problem posed and potential conservation solutions, applying diverse perspectives to the issue and potential solutions. Support your arguments primarily with peer-reviewed articles. Cite all sources – ideas, statistics, or facts – in text, and provide a list of cited references.

Your group will work together on a common theme, but there will be some independent parts and some parts you work on collaboratively. The presentation will be a group presentation by all of you that will last 20-25 minutes, including discussion and questions. The final paper will have:

- An Introduction written by your group as a whole
- Separate chapters, written independently by each of you
- A Conclusion, written by your group as a whole

You will receive a group grade for the group presentation (7 points). For the paper, you will receive a group grade on the basis of the Introduction and Conclusion sections, and on the basis of the overall flow and connections among all the chapters (8 points for all of this). You will also receive an individual grade for your own chapter (20 points).

I will provide you with more information on the project in class, but the expectation will be about 3 pages for the Introduction and about 3 pages for the Conclusion. Each chapter should be about 8 pages. Format for all of this is double-spaced, 12-pt font, Times New Roman, and 1-inch margins. All sections should be carefully and concisely written with well-supported arguments. The project is due by 11:59pm, December 10th.

Attendance and Participation:

In this course, students will learn a lot from each other, especially during the discussions, interactive activities, and student presentations. We will engage in many active learning activities throughout the semester. It is essential for your sake and for that of your classmates that you attend and participate during these activities. Yes, I may actively note who is present and absent during that period, and absences will cause your grade to decline.
However, full attendance is not enough – you must also ask questions and participate in discussions. *I will keep track of participation throughout the semester.* Participation points are not automatic. I don’t expect everyone to say something in every single discussion, but *you are expected to engage fully in small group activities, and the whole class should hear your questions or thoughts on a number of occasions during the semester.* *I will especially appreciate informed discussion that illustrates that you have prepared fully for class.*

**Policy on absences or make-up of exams or presentations:**

If you perceive that you will have a conflict either on an exam or on the day your group is scheduled to present, please notify me as far in advance as possible. I will try my best to be flexible if you have a legitimate conflict due to a university-sanctioned activity, significant religious holiday, or an activity that would provide you a significant opportunity for learning or professional development – and provided you contact me with sufficient advance notice.

In addition, there may be something unexpected that turns up at the last minute which prevents you from attending, such as an illness or family emergency. If so, please notify me as soon as possible once this occurs. I may require an excuse, such as a doctor’s note.

**Evaluation:**

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<tr>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>First midterm exam</td>
<td>18</td>
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<tr>
<td>Second midterm exam</td>
<td>17</td>
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<tr>
<td>Third midterm exam</td>
<td>15</td>
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<tr>
<td>Student-led discussion of reading – group presentation</td>
<td>7</td>
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<tr>
<td>Integrative paper – group presentation</td>
<td>7</td>
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<td>Integrative paper – group component of paper</td>
<td>8</td>
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<tr>
<td>Integrative paper – individual component of paper</td>
<td>20</td>
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<td>Attendance and participation</td>
<td>8</td>
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<td><strong>Total</strong></td>
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**Final Grades:**

Grades will be assigned based on the overall weighted score at the end of the course. A score of 93% or better will receive an A, a 90% will receive an A-, a 87% will receive a B+, and so on; thus a 60% or better is required to receive a D-. *There is no limit on the number of students that can get a top grade, but getting an A or B in this class is not easy, and requires your careful preparation and full engagement in the course.*

**Conduct:**

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on Student and Faculty and Academic Rights and Responsibilities (Policy #03.70.02) which can be accessed through the following link:

http://policies.temple.edu/getdoc.asp?policy_no=03.70.02.

Please keep your focus on course material while in class. You may feel you can multitask or use smartphones and other electronic devices discreetly, but I and many of the students around you tend to find it disruptive and disrespectful to teaching and learning when
during class you read or send text messages, consult your email, chat online, or otherwise are distracted by things not related to the course. Further, studies consistently show that users of text/chat, etc. are not aware of the degree to which they are distracted by this activity, or the extent to which their comprehension and performance on other tasks suffers while they use these devices. Therefore, you may use a laptop or other device to take notes or display an article or lecture notes, but please turn off or otherwise ignore anything not related to class during the course meeting times. Also, during small group work, keep conversations focused on the topic we are studying; unrelated chatter can be distracting to the rest of your group. Lack of engagement in the class due to electronic or other distractions could negatively affect your attendance and participation grade.

In addition, all students are expected to follow Temple University’s Student Code of Conduct, which prohibits “academic dishonesty and impropriety, including, but not limited to, plagiarism and academic cheating.” Also in accordance with the Code, let’s all work together to:

1. Foster an environment conducive to continued intellectual and educational stimulation within the university free from unlawful harassment by other members of the community; and
2. Foster the maintenance of physical and mental health, the safety and welfare of each member of the community; and
3. Respect the rights of others.

How to do well in this course:

It is certainly true that if you work harder you do better. Hard work is most definitely a necessary prerequisite to obtaining a good grade. As a rough guide, most professors assume, when assigning readings and other work to students, that students will devote about 3 hours on average to studying outside of class for every hour spent in class (thus, 9 hours of outside-class work in this course per week). Of course the time will vary depending on many factors, including the amount of related courses you have taken in the past.

However, hard work alone is not always sufficient for a good grade. The students who do best in my classes – and in most university classes for that matter – are those that not only work hard, but who attend regularly, are well-prepared for class, participate in class, and are proactive. Here is a description of what I mean:

First, attend all class periods. On days with interactive activities (most days), much of the learning comes from interacting in small and large groups, so if you are absent on those days, you will miss critical information that would be hard to make up. Also, keep in mind that there are only 6-8 classes per midterm, so if you miss one you will have missed a significant portion of the material for the exam. If you miss several classes you are digging a hole for yourself, from which it is hard to emerge with a good grade. Try to attend all class sessions, and if you do miss a class, you should work extra hard to learn the material you missed.

Second, prepare. Complete all the assigned readings prior to class. We have a lot of material to cover; and simply won’t have sufficient time to cover it all in class. I will cover key points and assume that you are reading to understand the rest. If you read in advance, then what I present will reinforce and strengthen what you have already learned from the reading.
Good preparation will also enable you to participate fully in – and get the most from – in-class activities and discussions. If you have not read in advance, you may find it difficult to keep up.

Third, participate. If you don’t understand something, ask a question. If you think of an interesting implication of one of the concepts we are covering, then share it with the class. And join fully in the discussions and other activities. Participation is powerful in helping you to understand the material, and will help you improve learning among your classmates as well.

Finally, be proactive. If you find that you don’t understand something, are falling behind, or are not satisfied with your performance in the course, then get additional help. I encourage you to come see me and/or contact one of the resources listed below as soon as possible if you are concerned about your performance and don’t know how to improve. Often I can give suggestions about ways to study to help get you back on the right track, as long as you don’t wait until the very end – there is little anyone can do to help you out at the very last minute, or after you have already received your final grade! By seeking help as soon as you perceive a problem, I will most likely be able to help you to understand concepts or with your study skills.

Additional resources:
Here are a few additional resources on campus that may be helpful:

- Temple Center for Learning and Student Success. This is an academic support center to assist students who are having academic difficulty, or who are doing well but want help improving their study skills and performance. It is free to Temple University students, and is located at 100 Tuttleman Learning Center, or by phone at 215-204-0561 or online at http://www.temple.edu/class.

- Tuttleman Counseling Services. This is a support center for a variety of educational, vocational, or emotional concerns. This center is free to Temple University students, and is located at 1700 N. Broad St., 2nd Fl. Corner of Broad St. and Cecil B. Moore Ave. (above Barnes and Noble). Or you can reach them by phone at 215-204-7276, or online at http://counseling.temple.edu/.

- Any student who has a need for accommodation based on the impact of a documented disability, including special accommodations for access to technology resources and electronic instructional materials required for the course, should contact me privately to discuss the specific situation by the end of the second week of classes or as soon as practical. If you have not done so already, please contact Disability Resources and Services (DRS) at 215-204-1280 in 100 Ritter Annex (1301 Cecil B. Moore Ave.) to learn more about the resources available to you. I will work with DRS to coordinate reasonable accommodations for all students with documented disabilities. More information is available online at http://disabilityresources.temple.edu/.