Bio 211: General Ecology  
Fall 2019 Course Syllabus

**GENERAL INFORMATION:**

**Lecture:** Tuesday and Thursday 9:30-10:50 in Thompson 193  
**Lab:** Tuesday 1-5 or Wednesday 1:30-5:30 in Thompson 221

**Instructor:** Dr. Stacey Weiss  
Email: sweiss@pugetsound.edu  
Office Hours: Monday 2:00-4:00  
Office: Thompson 223H  
Phone: 253-879-2744  
**Tuesday Lab IA:** Helena Heyer-Gray (hheyergray@pugetsound.edu)  
**Wednesday Lab IA:** Katie Hetterly (650-704-6952; khetterly@pugetsound.edu)

**Office:** Tuesday 11:00-12:00  
Wednesday 9:00-10:00  
Or by appointment

**REQUIRED RESOURCES:**

- SimUText Ecology Collection: Chapters on Competition and Predation  
  - You will receive an email with instructions on how to purchase this online textbook  
- Course Canvas site: [https://pugetsound.instructure.com/](https://pugetsound.instructure.com/)  

**OTHER RESOURCES:**

- Library Course Guide: [http://research.pugetsound.edu/BIOL211](http://research.pugetsound.edu/BIOL211)  
- Your Biology Liaison Librarian: Eli Gandour-Rood (egandourrood@pugetsound.edu)  
- Sound Writing Guide: [https://www.pugetsound.edu/academics/academic-resources/cwlt/sound-writing-resources/](https://www.pugetsound.edu/academics/academic-resources/cwlt/sound-writing-resources/)  
- CWLT Writing Advisors: There are many great writing advisors. You can see their schedules here: [http://www.pugetsound.edu/academics/academic-resources/cwlt/writing-advisor-schedule/](http://www.pugetsound.edu/academics/academic-resources/cwlt/writing-advisor-schedule/)  
- CWLT Biology Peer Tutor: Erin Stewart (CWLT: Mon 7-9pm, Wed 7-9pm, Thurs 1-2pm (drop-in), Thurs 2-3pm)  
- Phi Sigma Tutor Hours (dates and times TBD)

**WHAT IS ECOLOGY?:**

Ecology is defined by Molles (2016) as “the study of relationships between organisms and the environment”. Because an organism’s environment includes everything from its internal hormone concentrations to global CO₂ levels, the field of ecology includes a huge range of temporal and spatial scales, and utilizes a wide variety of approaches and techniques. How can such a broad field of study be surveyed in one semester of General Ecology? In Bio 211, we will explore the theories and practice of ecology at a many different levels of biological organization: the individual, populations of
con specifics, species interactions, and communities, as well as larger-scales. For each of these subfields of ecology, I will emphasize both what we know about the field and how we have come to learn it; we will discuss both classic and modern ecological research that address real ecological problems; and you will put your ecological knowledge into action by interpreting ecological theories and models, and by designing, conducting, and analyzing your own ecological experiments.

The understanding of theory, the manipulation of models, and the analysis of data require quantitative and graphical skills that you may not have been previously asked to master. A number of tools are in place to help you improve on these skills. (1) I chose your textbook, in part, based on its illustrations, which include text boxes to facilitate both the interpretation and comprehension of equations, graphs, and other figures. (2) I will emphasize graphical analysis skills in all components of the course. (3) We will devote both lecture and lab time to learning analytical statistics, and stats will be discussed throughout the course. You will use statistics to analyze data from labs and from your independent research project. (4) I will introduce you to model building and manipulation, and you will use computer models to advance your understanding of key ecological concepts. (5) Building upon skills you are already developing through your experience in introductory biology courses, I will stress the importance of effective library research, careful interpretation of the primary literature, and clear scientific writing.

**Student learning objectives:** At the end of this course you should...
- Be familiar with different levels of organization within the study of ecology
- Understand ecological theory, processes and patterns as described in the course
- Be familiar with the methods by which ecological knowledge develops
- Have learned and appropriately utilized analytical statistics and computer modeling to further advance your understanding of complex ecological relationships
- Have developed and tested hypotheses concerning ecological processes, and communicated your findings in written, graphical and oral formats
- Be able to think critically and logically about relationships between evidence and explanations
- Have improved upon your academic skills “tool belt” including: critical thinking, graphical data interpretation & construction, library research, clear scientific writing, and oral presentation of scientific data.

**COURSEWORK:**

Your grade in this course will be determined by the following course components:

**Quizzes & Exams:** There will be 4 quizzes, 3 midterm exams, and a comprehensive final exam. Quizzes and exams will cover material from all aspects of the course (e.g., labs, readings, etc.), but will focus on material from lecture. Questions will be designed to assess your understanding of facts and concepts, your ability to apply facts and concepts to novel situations, and your ability to interpret graphical, tabular, and statistical representations of ecological data. Your goal is to demonstrate, in writing, a clear understanding of various ecological concepts. Be warned: doing so takes practice!

**There are no make-up quizzes or exams.** See the course schedule for the dates of your quizzes and exams and mark them on your calendar today. If you anticipate a problem, see me immediately. If you miss an exam due to an unforeseen emergency and can provide appropriate documentation, I will take this into consideration when assigning final grades. Your lowest quiz grade is thrown out from calculations of your final course grade; thus, if you miss one quiz that will be the score that is dropped.
Independent Projects (IP’s): During this course, you will design, conduct, analyze, and present original research in ecology. Although we will call these “independent” projects, you are expected to work in groups of two. These projects should be fun and rewarding. The more thought you put into developing a project you really care about, the better your experience will be. So, start thinking about potential topics for your study as soon as possible and discuss them with me and your IA! There are a number of ways for you to get started... Look on the “Independent Projects” section on the course Canvas site for the “Getting Started” information to find a lot of ideas. I enjoy batting around potential study topics, so please discuss your ideas with me.

You should aim to develop a specific, limited question that can be answered in the available time period. (You may be surprised to discover how difficult it can be to rigorously test what seems like a simple idea!) Also, be sure that the study you develop involves accessible organisms, and supplies/equipment that are either already available or easy & cheap to obtain.

A proposal of your research plan is due in lecture during Week 7. Once you have approval for your plan, you will dive into your experimental set-up and data collection. While working on your project, it will be your responsibility to care for any captive organisms required for your study (even over Thanksgiving Break!) and to coordinate with the stockroom staff. [Send me your favorite Thanksgiving recipe before Week 2 of the semester for 2 pts of extra credit.] Your project will culminate in both written and oral presentations of your research.

Realize that several other classes and all your classmates will be utilizing the same limited pool of resources. So, do not expect to be able to request, order, or sign-out supplies at the last minute! Plan ahead and always be courteous to the staff! Complete and thorough clean-up of your Independent Project (including proper disposal of any organisms, cleaning and storage of all supplies and equipment, cleaning of study area, etc.) is required in order for your final write-up to be graded.

Labs: Labs are required and will begin promptly at 1:00 (on Tuesdays) or 1:30 (on Wednesdays). If you have a problem making it to a particular week’s lab, please ask at least one week in advance to attend a different lab period (if possible). I will try my best to accommodate one such request from each student, but please understand that such accommodation cannot be guaranteed. Missing two or more labs may be cause for withdrawal from the course.

Four labs will involve working outside – rain or shine. The dates of these labs are set (denoted as “FIELD LAB” on your schedule). On these days, coming to lab prepared includes being dressed appropriately! Wear good walking shoes (sneakers or hiking boots) and long pants. Bring layers of clothing (including rain gear) to deal with possible weather variations, pencils (which write better in the rain than do pens), and perhaps a clipboard. Be prepared to get wet, walk through high vegetation, etc. All the fun of field work!

For most labs, you will turn in pre-lab questions at the start of lab. Pre-lab questions will not be accepted late. During many lab periods, you will complete a worksheet or problem set that will be turned in for grading at the end of that lab period. Assignments for labs you did not attend will not be graded, although you are encouraged to do the work anyway (if logistically possible) to receive feedback on it.

Some lab exercises will result in formal writing assignments. You will write partial scientific papers based on Week 1’s activities (due Week 5) and on an experiment you run Weeks 5-7 (due Week 10). Clear scientific writing is a very important skill that usually requires a great deal of effort and practice to perfect. I will do my best to help you improve as a writer by asking you to write from “the reader’s perspective” and by giving you a great deal of feedback on your writing. In return, I expect that all of your written assignments will be pieces of professional work of which you are proud. All your
written work should be well-edited, double-line spaced, page numbered, and free of typographical errors. All papers will be submitted electronically via TurnItIn.

Within 7 days of receiving a graded writing assignment back from me, you are welcome to revise and resubmit. This 7 day period is strictly enforced, and no revisions will be accepted after this 7 day period. Any late penalty on the original submission is also applied to the revision. Revisions must be thoughtful (i.e., they must include more than making simple editorial changes that I recommend) and the original version must be attached. See Chapter 5 in Knisely’s A Student Handbook for Writing in Biology (2013) for information about the revision process, as well as Chapter 4 in the Sound Writing Guide.

Four lab periods are set aside for IP work. On these days, you must check in with me in the lab room at the start of your lab period. Do not expect to complete your entire project in these four time periods. Your independent project will require work outside of lab time, and you should get started on them as soon as your proposal is approved.

Paper Discussions: A few times during the semester, we will discuss assigned primary literature articles in lecture. You must come prepared for these discussions. To help you prepare, you will be required to complete a pre-discussion assignment, the structure of which will vary each time. Discussion prep assignments are not accepted late.

Participation: Your participation will be assessed by your attendance, your contributions to classroom conversations and activities, and your general classroom behavior. You are expected to show up to each class and lab session on time and well-prepared, and stay for the duration of the class period. You are expected to contribute to a respectful, supportive, collaborative, and productive learning environment where everyone can feel comfortable contributing. You are expected to follow course guidelines concerning appropriate behavior, including use of electronics (see below). Do these things, and you will earn all participation points.

If you feel like your performance in class is being impacted by the classroom climate, please don’t hesitate to come and talk with me, or submit anonymous feedback. Students that fail to follow classroom expectations described throughout this syllabus may be asked to leave the classroom, may lose all participation points, and/or may be withdrawn from the class.

SOME NOTES ON GRADING

Late Assignments: Pre-lab questions, discussion preps & revised writing assignments will not be accepted late. For all other assignments, work will be accepted late, but will be assessed a 10% late penalty per 24 hour period that the assignment is late. Late assignments submitted as hardcopies (vs. electronic submissions) can be turned in to me personally or to the Biology Department Office (Thompson 223A. You must ask the secretary (Laura Strong) to date and time stamp the assignment first. She leaves at 4:00 or 4:30 pm.).

Missed Exams, Lectures & Labs: No make-up quizzes or exams will be provided. In addition, you cannot receive credit for in-class or in-lab assignments for a lecture or lab that you did not attend. Check the course schedule. If you anticipate a problem with a given exam or lab date, discuss it with me as soon as possible. If you miss an exam or lab due to an unforeseen emergency, I may take this into consideration when assigning final grades if you provide appropriate documentation.
Will grades be “curved”? Grades will be assigned based on the total accumulated points. Final course grades will be assigned on a straight scale, meaning that those of you with 90% or more of the total available points will earn yourselves an A− or greater, those with 80% will earn a B− or greater, and so on. Thus, you will not be in competition for grades with your peers.

However, I reserve the right to adjust the scale in your favor at the end of the semester (i.e., an adjusted scale may assign A’s to students with less than 90%). Additionally, I reserve the right to take improvement and effort into account in determining your final grade if, at the end of the semester, your grade falls on a borderline.

ACADEMIC HONESTY

Academic honesty is a crucial tenet of higher education, and helps ensure a respectful learning environment. Similarly, scientific integrity is crucial to the development of scientific knowledge, and helps ensure the validity of scientific research. You are expected to be honest and respectful in all aspects of this course.

I assume that you have committed to the University’s Student Integrity Code (https://www.pugetsound.edu/files/resources/studentintegritycode082219.pdf) and that you understand the University’s policies regarding academic integrity (https://www.pugetsound.edu/files/resources/sicprocedures082119.pdf). You may also want to review this learning guide about the topic (https://research.pugetsound.edu/academicintegrity). Please talk to me if you have any questions about this information.

Students often are confused about plagiarism, which is an intellectual property violation. It occurs when one person misrepresents someone else’s work/words/data/figures/etc. as their own, whether or not this misrepresentation is intentional. Avoiding plagiarism requires an active approach, as even poor note-taking can result in unintentional plagiarism! Please review Chapter 3 in Knisely’s A Student Handbook for Writing in Biology (2013), Chapter 8 in the Sound Writing Guide, and a document on Canvas called “Reading and note-taking to avoid plagiarism” for more information and helpful hints for avoiding this form of academic dishonesty. And if you have a question about it, please ask!

An act of academic dishonesty (such as cheating of any kind; alteration, fabrication, or other misuse of scientific data; unauthorized removal of or damage to library materials; or plagiarism) will result in a zero for the assignment linked to the offense, assuming it is your first offense. If it is your second offense, you will receive an F for the course. Additional penalties may apply as the University requires that all acts of academic dishonesty are reported to the Dean of Students, who may opt to impose further sanctions.

OTHER IMPORTANT ISSUES...

Electronics in the classroom: When in class, be prepared to focus solely on class and the day’s activities. These days, with so many distractions at our fingertips, this takes intentional practice. But it is important. Scientific study shows that multitasking in lecture reduces the learning of not only the multitasker, but also those students who sit around the multitasker, even if they self-report no apparent distraction. And anyway, taking class notes on a laptop results in lower long-term comprehension of course material (relative to taking notes by hand). See these interesting articles:

https://medium.com/scientific-american/students-are-better-off-without-a-laptop-in-the-classroom-3de1a5432b67?fbclid=IwAR2gljm2gcQgG-aiTPHLalwdGeHyVvSqLMd0WypMAeloCllrBM4D_WtsUU

Thus, my preference is that you do not use a laptop, tablet, etc. during lecture, though you are welcome to use it to view pdfs during paper discussions and to do lab work. Whenever you use electronic devices in class, please follow these expectations: 1) Devices must be muted, and 2) Refrain from engaging with email, instant messaging, social media, videos, and other non-course-specific content. Remember these expectations are to benefit not only your learning, but also the learning of your peers around you. Be considerate. [After you have read this and before Week 2 of the semester, for 2 points of extra credit, send me an email acknowledging your understanding of these expectations and providing any thoughts on the matter that you care to share.] Please note: If you have a personal situation that requires your attention to phone/email/IM during class, please let me know beforehand, have the device set to vibrate, and step outside the classroom to respond to any message.

**If you do not have a personal laptop** to use in lab, please let me know immediately so an alternative can be provided for you.

**Email correspondence:** Please take a professional approach to your email correspondence with me (and your other faculty). It demonstrates respect and is good practice for life post-graduation. To get an idea of what is expected for your email communication with faculty, check out Chapter 11 in the Sound Writing Guide and this document from the CWLT: [http://www.pugetsound.edu/files/resources/effective-emailing-with-faculty-3.pdf](http://www.pugetsound.edu/files/resources/effective-emailing-with-faculty-3.pdf). Note that I primarily use email for arranging face-to-face appointments rather than for answering specific course-related questions, as it is usually quite inefficient to try to discuss conceptual material via an email exchange. And I enjoy seeing you in my office!

**Diversity and inclusion in science:** In an ideal world, science would be objective. However, much of science is subjective and historically built on a small subset of privileged voices. Thus, even though the material covered in this course is of a scientific nature, I acknowledge that there may be both overt and covert biases within it. Integrating a diverse set of experiences is important for a more comprehensive understanding of science. Please contact me (in person, electronically, or anonymously) if you have suggestions to improve the representation of a diverse group of scientists in course materials.

**Getting help:** Taken from Smith College’s “Failing Well” campaign: Know that you can struggle in your academic and personal life, and “still be a totally worthy, utterly excellent human.” If you find yourself struggling this semester, please get help (even if you think of yourself as someone who shouldn’t need help). If your struggle is course-related, please come to me with your questions and concerns. If your struggle is outside of this course, I can help direct you to appropriate resources.

**Student Accessibility and Accommodation:** If you have a physical, psychological, medical or learning disability that may impact your course work, should please contact Peggy Perno, Director of the Office of Accessibility and Accommodations, 105 Howarth, 253-879-3395. She will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential;
professors are informed of the accommodation but not the underlying diagnosis. If you are unable to get formal accommodation (for example, due to financial circumstances), I am happy to chat with you about possible ways to improve the learning environment for you.

**Student Bereavement Policy:** Upon approval from the Dean of Students’ Office, students who experience a death in the family, including parent, grandparent, sibling, or persons living in the same household, are allowed three consecutive weekdays of excused absences, as negotiated with the Dean of Students. For more information, please see the Academic Handbook.

**Copyright and Fair Use:** Course materials are subject to the copyright law of the United States (Title 17 U.S. Code). They are for educational purposes only and limited to students enrolled in the course. Further reproduction or distribution is prohibited.

**Classroom Emergency Response Guidance:** The University has asked all faculty to include the following information in their syllabi:

Please review university emergency preparedness, response procedures and a training video posted at www.pugetsound.edu/emergency/. There is a link on the university home page. Familiarize yourself with hall exit doors and the designated gathering area for your class and laboratory buildings.

If building evacuation becomes necessary (e.g. earthquake), meet your instructor at the designated gathering area so she/he can account for your presence. Then wait for further instructions. Do not return to the building or classroom until advised by a university emergency response representative.

If confronted by an act of violence, be prepared to make quick decisions to protect your safety. Flee the area by running away from the source of danger if you can safely do so. If this is not possible, shelter in place by securing classroom or lab doors and windows, closing blinds, and turning off room lights. Lie on the floor out of sight and away from windows and doors. Place cell phones or pagers on vibrate so that you can receive messages quietly. Wait for further instructions.
Point distribution & due dates for Fall 2019 Bio 211

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Pts</th>
<th>Due date &amp; time</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lab Assignments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pre-lab Questions (9 x 5 pts each)</td>
<td>45</td>
<td>Throughout semester</td>
</tr>
<tr>
<td>In-lab worksheets, problem sets &amp; post-labs</td>
<td>170</td>
<td>Throughout semester</td>
</tr>
<tr>
<td>Meeting writing goals (optional extra credit: 4 x 5 pts each)</td>
<td>(20)</td>
<td>Throughout semester</td>
</tr>
<tr>
<td>Ecological Patterns: Methods &amp; Results</td>
<td>20</td>
<td>Week 5: Thursday before lecture</td>
</tr>
<tr>
<td>Growth Rate Experiment: Methods, Results &amp; Discussion</td>
<td>40</td>
<td>Week 10: Thursday before lecture</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>275</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Independent Project (IP)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IP Brainstorming Worksheet</td>
<td>5</td>
<td>Week 5 in lab</td>
</tr>
<tr>
<td>IP Proposal</td>
<td>30</td>
<td>Week 7: Thursday before lecture</td>
</tr>
<tr>
<td>IP Progress Reports (4 x 5 pts each)</td>
<td>20</td>
<td>TUES LAB: Week 10, 11, 13 &amp; 14 Labs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WED LAB: Week 9, 10, 11 &amp; 14 Labs</td>
</tr>
<tr>
<td>IP Intro Starter + Methods</td>
<td>20</td>
<td>Week 12 before lab</td>
</tr>
<tr>
<td>IP Presentation &amp; Participation</td>
<td>20</td>
<td>Week 15 in lab</td>
</tr>
<tr>
<td>IP Research Paper</td>
<td>100</td>
<td>Abstract: Week 14 Friday by 5pm</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Full paper: Week 15 Wednesday by midnight</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>195</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Other Course Assignments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Effective Learning Strategies (optional extra credit)</td>
<td>(5)</td>
<td>Week 1: Thursday in lecture</td>
</tr>
<tr>
<td>Paper Discussion Preps (2 x 10 pts each)</td>
<td>20</td>
<td>Throughout Semester</td>
</tr>
<tr>
<td>In-Class Work &amp; overall Course Participation</td>
<td>30</td>
<td>Throughout Semester</td>
</tr>
<tr>
<td>SimUText readings &amp; questions (3 sections x 5 pts each)</td>
<td>15</td>
<td>Throughout Semester</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>65</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Quizzes and Exams</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quizzes</td>
<td>15</td>
<td>Week 3: Tuesday</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Week 6: Thursday</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Week 11: Thursday</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Week 15: Tuesday</td>
</tr>
<tr>
<td>Midterm Exams</td>
<td>100</td>
<td>Week 4: Thursday</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>Week 9: Tuesday</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>Week 13: Tuesday</td>
</tr>
<tr>
<td>Final Exam (comprehensive)</td>
<td>120</td>
<td>Tues 13 Dec at 8-10am</td>
</tr>
<tr>
<td><strong>Sum</strong></td>
<td><strong>480</strong></td>
<td>(Throw out lowest quiz score)</td>
</tr>
<tr>
<td></td>
<td>-15</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>465</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>100</strong></td>
<td>0</td>
</tr>
</tbody>
</table>

Note 1: Dates are subject to change for all assignments except exams
Note 2: Pre-lab questions, SimUText questions, and Discussion Prep assignments are not accepted late

IF YOU HAVE QUESTIONS ABOUT ANY OF THE COURSE INFO, PLEASE ASK!