

Biology 306: Ecological Methods

Instructor: Dr. Brian C. Barringer
Email: bbarring@uwsp.edu
Phone: 715-346-2452
Office: TNR 337
Office Hours: Mondays 9:00 – 12:00 or by appointment

Text: *Field & Lab Methods for General Ecology* (Brower et al.) 4th edition (rental)

Course Objectives: To learn about and apply a variety of methods used to conduct and interpret ecological studies of populations, communities, and ecosystems, and to explore fundamental concepts in ecology via both theoretical approaches and hands-on activities.

Communication and course documents: In addition to our interactions in class I will frequently use email as a means for sharing information. While taking this course I expect that you check your email on a regular basis. If you need to reach me outside of class or regular office hours, email is probably your best bet, though you are always welcome to stop by or try calling my office as well. If you can find me I will be happy to meet with you as long as I don't have something else going on.

Course activities and assignments: This course includes a variety of activities/topics designed to help you become familiar with some of the concepts and methods used in the scientific field of ecology. Most of these are stand-alone assignments that you will work on for 1-2 weeks. In addition to the assignments themselves, three quizzes and two exams will help me assess your knowledge of information covered.

Attendance: This course includes quite a bit of collaboration and we only meet once/week. Therefore, on-time attendance is mandatory. You will drop one-half of an entire course grade for each unexcused absence. Excused absences are restricted to documented, verifiable, extraordinary situations (e.g., university sanctioned events, extreme illness or other emergent medical situations, deaths in the family, etc.). Timely communication with me about such absences is key. In addition, late arrivals will result in two points being deducted from your participation score (see participation, below) for each 5-minute block of time. I reserve the right to consider significantly late arrivals (i.e., > 15 minutes late) as absences. Note that if you miss a class it is your responsibility to obtain missed information/data from one of your classmates.

Participation: You are expected to be an active participant in all of our meetings and activities. This means that I expect you to take notes, engage in discussions, ask questions, share thoughts and opinions, and volunteer to help each other out when appropriate. Forty points are allocated to participation (see grading, below). You must earn these points! Students who are always quiet, unengaged, and/or generally appear uninterested in our activities will not fare well in this regard.

Late Policy: Assignments lose 20% of their point-value for each day they are late.

Cell/SmartPhones, Laptops, ipads, ipods, etc.: Please note that using these items is not allowed during our meetings unless explicitly told otherwise. They are distracting to your peers and to me. If I observe that you are using these items during class I will (1) deduct five points from your participation score and (2) ask you to leave.

Course Schedule: A schedule of activities/topics follows. Many of these have associated assignments, which are generally due in lab the week following the activity (I will let you know of exceptions). Dates with asterisks refer to meetings involving time spent outside. Note that I reserve the right to change this schedule and/or these activities/topics with due notice as we progress through the semester.

| Week of: | Activity/Assignment | Assignment |
|----------|--|---|
| 9/5 | Course introduction. Estimating population sizes. | Estimating population sizes (20 pts.). Read sections 1-2 of the statistics tutorial document and complete the descriptive statistics pre-lab (5 pts.). |
| 9/12 | Recording and describing ecological data. | Read section 3 of the statistics tutorial document and complete the inferential statistics pre-lab (5 pts.) |
| 9/19 | Inferential statistics. | Statistics questions (20 pts.). |
| 9/26 | Quiz I (5 pts.). Discussion of Primack <i>et al.</i> 2004. Mammal/fish collection and herbarium tours. | |
| 10/3 | <i>Brassica</i> project – setup and sow seeds. Finding/citing relevant information. Format of <i>Brassica</i> lab report. | <i>Brassica</i> lab report (30 pts.). |
| 10/10 * | Quantifying/interpreting spatial patterns in nature. | Spatial patterns assignment (20 pts.). |
| 10/17 * | Meet in Schmeackle at shelter building. Quiz II (5 pts.). Discussion of Hartnett and Abrahamson 1979 <i>Solidago</i> project – measure plants/collect galls | <i>Solidago</i> lab report (30 pts.). |
| 10/24 | Exam I (20 pts.). <i>Solidago</i> project – measure and dissect galls. | |
| 10/31 | <i>Brassica</i> project – harvest and gather data. | |
| 11/7 | Survivorship curves and demography. | Survivorship curves/demography assignment (20 pts.). |
| 11/14 | No formal meeting (work on survivorship curves/demography assignment). | |
| 11/21 | No class this week (Thanksgiving Break) | |
| 11/28 * | Estimating species diversity. | Estimating species diversity assignment (20 pts.). |
| 12/5 | Quiz III (5 pts.). Discussion of Vellend 2013. | |
| 12/12 | Exam II (20 pts.). | |

Grading: You will earn points in this course via a combination of assignments (up to 170 points), quizzes (up to 5 points each), exams (up to 20 points each) and participation (up to 40 points). Your final grade in this course will be based on the percentage of all possible points (265 total) that you earn throughout the semester. To determine your final grade the following metric will be used:

| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| ≥ | 90- | 87- | 84- | 80- | 77- | 74- | 70- | 67- | 60- | ≤ |
| 94% | 93% | 89% | 86% | 83% | 79% | 76% | 73% | 69% | 66% | 59% |
| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | F |

Students with Disabilities: I will be happy to help you if you need special accommodations to succeed in this course. Please see Student Disability Services to complete the paperwork required to document your needs and then contact me so that appropriate arrangements can be made. More information can be found here: <http://www.uwsp.edu/disability/Pages/default.aspx>

Academic Integrity: It is your responsibility to be aware of your rights and responsibilities as a UWSP student. Please take the time to read and understand the information found here (and let me know of any questions): <http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf>