

## Biology 306: Ecological Methods

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 Office: TNR 337  
 Office Hours: Fridays 11:00 – 1:00 or by appointment

Meeting time/location: Mon (Sec. 1) or Wed (Sec. 3) 9:00-11:50 in TNR 461

Textbook: *Field & Lab Methods for General Ecology*, Brower *et al.*, 4<sup>th</sup> edition (rental)

**Course Objectives:** To study 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 an exam 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-third of an entire course grade (e.g. from a B+ to a B) 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 one point per minute being deducted from your participation score (see participation, below). Significantly late arrivals (i.e., > 15 minutes late) will be counted as unexcused 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 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.

**Grading:** You will earn points in this course via a combination of assignments (up to 170 points), three quizzes (up to 10 points each), an exam (up to 30 points) and participation (up to 40 points). Your final grade in this course will be based on the percentage of all possible points (270 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): <https://www.uwsp.edu/dos/Documents/CommunityRights.pdf>

**Course Schedule:** A schedule of activities/topics follows. Many of these have associated assignments, which are generally due in their dropbox on D2L the week following the activity (I will let you know of exceptions). Dates with asterisks refer to meetings involving time spent outside; please dress accordingly. 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
1/22	No meeting during first week of semester.	
1/29	Course introduction. Estimating population sizes.	Estimating population sizes assignment (20 pts.). Read sections 1-2 of the statistics tutorial document and complete the descriptive statistics pre-lab (5 pts.).
2/5	Recording and describing ecological data. Descriptive statistics.	Read section 3 of the statistics tutorial document and complete the inferential statistics pre-lab (5 pts.).
2/12	Inferential statistics.	Statistics assignment (20 pts.).
2/19	Quiz I (10 pts.). Discussion of Primack <i>et al.</i> 2004. Mammal/fish collection and herbarium tours.	
2/26	<i>Brassica</i> project – setup and sow seeds.	<i>Brassica</i> assignment (20 pts.).
3/5	<i>Acer</i> project – discussion and setup	<i>Acer</i> assignment (20 pts.).
3/12	No formal meeting (work on <i>Acer</i> project)	
3/19	Quiz II (10 pts.). Discussion of Gausse 1932 Introduction to <i>Populus</i> software	<i>Populus</i> assignment (20 pts.).
3/26	No class (spring break)	
4/2	<i>Brassica</i> project – harvest and gather data.	
4/9	Demography and survivorship curves.	Demography/survivorship curves assignment (20 pts.).
4/16 *	Spatial patterns in nature.	Spatial patterns assignment (20 pts.).
4/23 *	Estimating species diversity.	Estimating species diversity assignment (20 pts.).
4/30	Quiz III (10 pts.). Discussion of Vellend 2013.	
5/7	Exam (30 pts.).	