BIOL 270 Ecology & Evolution (Section 2)
Fall 2017
Lecture M W F @ 11:00 – 11:50 AM in SCI A208
Lab T @ 10:00 – 11:50 AM in TNR 461

Instructor:	Dr. Daniel L. Graf	Course web site:	Desire2Learn site at http://mypoint.uwsp.edu
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email:	dgraf@uwsp.edu (include "BIOL 270" in subject)	Office Hours:	M 2-4 PM, Th 10 AM-noon or by appointment

General Course Description. "Ecological processes from populations to biomes; evolution and its processes involved in generating biodiversity. An integration of molecular, cellular, organismal, ecological and evolutionary processes. Scientific method writing emphasized in lab." This course is required for Biology majors, and it fulfills 4 credits of Communications in the Major under the GEP.

Objectives. The objectives of BIOL 270 are 1) to introduce students to the foundational concepts of evolution and ecology, and 2) to provide experience writing and speaking on biological subjects.

Learning Outcomes:

You will be able to:

1. Apply knowledge of ecological processes that operate at the level of the individual organisms, populations, communities, and ecosystems to explain patterns of species distribution and abundance.
2. Generalize how micro- and macro-evolutionary processes are responsible for historical and contemporary patterns of biological diversity within and among species.
3. Demonstrate the ability to write and orally present biological information that is articulate and grammatically correct with properly organized and documented data and ideas.
4. Critique your own and others' writing and oral communication skills by providing and applying useful feedback.

Required Materials. *Ecology*, 2nd edition by Cain et al. (2011, Sinauer Associates, ISBN: 978-0878934454) AND *Evolutionary Analysis* 5th edition by Herron & Freeman (2013, Pearson, ISBN: 978-0321616678). These books are available for rent at the campus bookstore.

Writing in the Biological Sciences: A Comprehensive Resource for Scientific Communication 1st edition by Hoffman (2012, Oxford University Press, ISBN: 978-0199765287) is available in the bookstore for purchase. It is not required.

A dedicated notebook for the course is recommended.

Equipment Return Policy. At times, you will check out equipment for this class, such as binoculars, clipboards, etc. You should treat equipment as if it were your own. You are expected to return the equipment in the same condition as it was checked out to you. If you fail to return equipment by the end of the semester or return it damaged, your student account will be charged a replacement cost.

Exams, Assignments, and Grading. Your final grade for the course will be based upon 480 possible points.

BIOL 270	points
Lecture Exam 1	50
Lecture Exam 2	50
Daily Quizzes	60
Lecture Discussions	20
Lab Notebook	50
Communication	150
Final Exam	100
TOTAL	**480**

There are two lecture exams (50 points each) that constitute about 21% of your total points. Lecture exams may include matching, multiple choice, short-answer, or essay type questions. These exams will NOT be cumulative — they will only include material since the previous exam. The cumulative final exam is worth 100 points (21%) and will cover material from the entire course.

2-point quizzes will take place at the beginning of each lecture period. All questions will be short-answer format, and topics from preceding sessions *as well as the lecture scheduled for that day* are fair game. Any daily quiz points acquired above 60 are "bonus" points. Daily quizzes will constitute roughly 13% of your final grade.

We will occasionally suspend lecture to discuss articles or book chapters that supplement textbook material. Your participation during each discussion session will be assessed based on a 5-point group exercise for a total of 20 points (4%).

Lab exercises are worth 5 points each, for a total of 50 points (10%).

Various communication projects, including mini-posters, oral presentations, lab reports, and other writing assignments, will make up 31% of your total grade (150 total points).

- Foraging Experiment Methods & Results (10 points, 6 October)
- Foraging Experiment Group Presentation (20 points, 24 October)
- Foraging Experiment Lab Report (30 points, 27 October)
- Review Paper Research Bibliography (5 points, 10 November)
- Review Paper Article Summary (15 points, 17 November)
- Phylogeny Analysis Abstract (5 points, 1 December)
- Review Paper Draft (5 December)
- Review Paper Mini-Poster (30 points, 12 December)
- Review Paper (35 points, 15 December)

Grades will be based upon the following percentages of the course total:

		100-93%	A	92-89%	A-
88-87%	B+	86-83%	B	82-79%	B-
78-77%	C+	76-73%	C	72-69%	C-
68-67%	D+	66-59%	D	<59%	F

REQUESTS FOR EXTRA POINTS WILL NOT BE HONORED.

Exam and Quiz Rules. The following rules apply to exam periods as well as quizzes.

- If you arrive so late for an exam that anyone else has finished and left, you will not be allowed to take the exam at that time. You may be able to take a make-up exam (see attendance policy below). There are no make-up quizzes.
- If you arrive late for a quiz or exam, you will not be given extra time. When the rest of the class is finished, you will need to be done.
- Work to be handed in must be completed in black or blue ink or pencil.
- MP3 players, cell phones, etc. will not be allowed in the testing area.
- There may be multiple forms of exams and quizzes.

Laboratory. YOU MUST DRESS APPROPRIATELY FOR LAB.

- You MUST wear shoes — not sandals, flip-flops, or similar options that do not protect your feet.
- When we are scheduled to be outside, we will be outside. Dress appropriately!
- FAILURE TO COMPLY WITH THESE RULES WILL RESULT IN YOUR REMOVAL FROM CLASS UNTIL YOU ARE PROPERLY ATTIRED.

Attendance. YOUR COMMITMENT TO YOUR CLASSES IS AMONG THE MOST IMPORTANT THINGS IN YOUR LIFE RIGHT NOW. You are expected to attend all lecture, lab, and exam sessions. Two unexcused absences from lab will result in a 1/3 reduction in your final grade.

If you will miss a class to participate in a college-sanctioned event, you must notify your instructor in advance and complete the work, including exams, before the otherwise scheduled class or due-date. Absences relating to religious beliefs will be accommodated according to UWS 22.03 (below). In either case, Dr. Graf should be notified within the first three weeks of class regarding the specific dates that you will be absent.

http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap22.pdf

Make-Up Exams. You must make every effort to take exams at the scheduled times. MAKE-UP EXAMS MAY BE ALLOWED IN CASES OF MEDICAL EMERGENCY, FOR WHICH YOU MUST PROVIDE WRITTEN DOCUMENTATION. You must make arrangements with Dr. Graf within 24 hours of the exam to schedule a make-up exam within one week or you will forfeit the points.

- **E•mer•gen•cy** |iˈmərjənsē| (noun): *a serious, unexpected, and often dangerous situation requiring immediate action*.
- A good rule of thumb: *If your situation wouldn't cause you to postpone your wedding, then it isn't a good reason to miss a scheduled exam.*

Academic Integrity. Any misrepresentation of your work, including plagiarism, or cheating of any kind will result in a zero (0) for that assignment. Students are encouraged to become familiar with the UWS/UWSP Student Academic Standards and Disciplinary Procedures governing student academic conduct. This is available for download at:

http://www.uwsp.edu/stuaffairs/Documents/RightsRespons/SRR-2010/rightsChap14.pdf

- Copying whole passages written by someone else is plagiarism. Even if you right-click in Word to use the thesaurus and replace some words.
- Cobbling together sentences from various sources and presenting them as your own is plagiarism.
- Quoting passages is not appropriate for this class. Use your own words.

Remember: DR. GRAF IS NOT AS DUMB AS YOU THINK HE IS.

Classroom Conduct. Student and instructor behavior should promote an environment favorable to both teaching and learning. It is disruptive to come late to class, read extra-curricular media in class, or use cell phones (and other electronic devices) during class time.

We will engage in periodic discussions of issues relevant to ecology and evolution. You are not required to agree with every opinion expressed by your instructors or your peers. In fact, healthy skepticism is expected of any good scientist. However, you must respect the rights of others to hold opinions different from your own. You are expected and encouraged to have opinions, ask questions, and participate in discussions.

Students that choose to disrespect their classmates and their instructor by disrupting lectures or labs will be asked to leave.

Disabilities. Students with disabilities are welcome and encouraged in this class. Students with disabilities should contact the Disability and Assistive Technology Center during the first two weeks of the semester if they wish to request specific accommodations.

http://www.uwsp.edu/disability/Pages/default.aspx

Wk	Date	Day	#	Lecture	Reading	Lab (T 10-11:50 AM)
1	4-Sep	M		LABOR DAY — NO CLASS		Course Intro
	6-Sep	W	1	Introduction to Ecology	Cain 1	
	8-Sep	F	2	Species Tolerances & Limitations	Cain 4	
2	11-Sep	M	3	Global Biome Diversity	Cain 3	Field Studies Literature
	13-Sep	W	4	Introduction to Population Ecology	Cain 8	
	15-Sep	F	5	Survivorship, Fecundity, Age Structure	Cain 9	
3	18-Sep	M	6	Models of Population Growth	Cain 9	Foraging Experiment
	20-Sep	W	7	Population Dynamics	Cain 10	
	22-Sep	F	*D1*	*Discussion — Demography*	*TBA*	
4	25-Sep	M	8	Interactions: Predation & Parasitism	Cain 12-13	Intro to Bio Statistics
	27-Sep	W	9	Interactions: Competition, etc.	Cain 11, 14	
	29-Sep	F	10	Community Structure & Succession	Cain 15-16	
5	2-Oct	M	11	Species Diversity in Communities	Cain 18	Population Growth Models
	4-Oct	W	12	Energy Fixation & Flow	Cain 19-20	
	6-Oct	F	13	Productivity & Nutrient Cycling	Cain 21	**Methods/Results Due!**
6	9-Oct	M	**E1**	**Exam 1**	—	Proposal Writing
	11-Oct	W	14	The Pattern of Evolution	Herron 2	
	13-Oct	F	15	Evolution by Natural Selection	Herron 3	
7	16-Oct	M	16	Fossil Record & the History of Life	Herron 18	Independent Data Collection
	18-Oct	W	17	Mutation & Variation	Herron 5	
	20-Oct	F	18	Hardy-Weinberg Equilirbium	Herron 6	
8	23-Oct	M	19	H-W Equilibrium: Selection	Herron 6	**Group Presentations Due!**
	25-Oct	W	20	H-W Equilibrium: Drift	Herron 7	
	27-Oct	F	*D2*	*Discussion — Natural Variation*	*TBA*	**Lab Report Due!**
9	30-Oct	M	21	Quantitative Traits	Herron 9	Hardy-Weinberg Equilibrium
	1-Nov	W	22	Selection & Adaptation	Herron 9-10	
	3-Nov	F	23	Sex & Sexual Selection	Herron 8, 11	
10	6-Nov	M	24	Kin Selection	Herron 12	Review Paper Research
	8-Nov	W	25	Life Histories: Life Spans	Herron 13	
	10-Nov	F	26	Life Histories: Reproduction	Herron 13	**Bibliography Due!**
11	13-Nov	M	**E2**	**Exam 2**	—	Reading Ecology & Evolution Literature
	15-Nov	W	27	Species	Herron 16	
	17-Nov	F	28	Speciation	Herron 16	**Article Summary Due!**
12	20-Nov	M	29	Modes of Speciation	Herron 16	Independent Review Paper Research
	22-Nov	W	*D3*	*Discussion — Species*	*TBA*	
	24-Nov	F		THANKSGIVING — NO CLASS		
13	27-Nov	M	30	Phylogeny & Classification	Herron 4	Phylogeny Reconstruction
	29-Nov	W	31	Human Evolution	Herron 20	(TNR 356)
	1-Dec	F	32	Global Determinants of Climate	Cain 2	**Phylogeny Abstract Due!**
14	4-Dec	M	33	Regional Determinants of Climate	Cain 2	**Review Paper Draft Due!**
	6-Dec	W	34	Global Ecology & Climate Change	Cain 24	
	8-Dec	F	*D4*	*Discussion — Climate Change*	*TBA*	
15	11-Dec	M	35	Anti-Evolution Propaganda I	Herron 3	**Mini-Poster Presentations**
	13-Dec	W	36	Anti-Evolution Propaganda II	Herron 3	
	15-Dec	F	37	Synthesis & Review	—	**Review Paper Due!**
16	21-Dec	Th	**F**	**FINAL EXAM 2:45-4:45 PM**		