

BIOLOGY 305 ECOLOGY

Tentative Syllabus for Fall 2012

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COURSE OBJECTIVE: To acquaint students with the science of ecology. Our efforts will focus on the relationships/interactions between the physical and biological conditions under which species exist and function, and the factors which may influence their distribution, abundance, and evolutionary success.

ATTENDANCE: Attendance is required by UWSP policy—see the University Catalog. You are responsible for anything you missed as a result of non-attendance in lecture. Contact a fellow student for notes and/or assignments, etc. **THE ONLY EXCUSED ABSENCES FROM A SCHEDULED EXAM TIME ARE MEDICAL EMERGENCIES AND UWSP SPORT ACTIVITIES (ASSUMING THAT YOU'RE A PARTICIPANT IN THE SPORT), AND UWSP FIELD TRIPS. ALSO MAKE NECESSARY ARRANGEMENTS REGARDING CONFLICTS BETWEEN EXAM TIMES AND WORK SCHEDULES.**

TESTS AND GRADING: Electronically scored exams (primarily multiple choice and true/false) will cover lecture material, handouts, and assigned readings (see below) in your textbook. There will be 2 mid-term tests (50 questions each) and a final exam (110 questions); see times below. The 2nd mid-term and final exams will be comprehensive. A curve may or may not be used for grading purposes, otherwise expect 90% and above A, 80-89% a B, 70-79% a C, etc. Scores within the above ranges will be assigned “+” and “-“ grades. There is no extra-credit. **Do not hesitate to contact me to get an estimate of your performance/grade on tests or for the course overall.**

STUDENT RESPONSIBILITIES: It is your responsibility to know your rights and responsibilities: please read the following link (it is the same for all your other classes here at UWSP): <http://uwsp.edu/admin/stuaffairs/rights/rightschap14.pdf>

COURTESY CLAUSE: You will lose 5 UNANNOUNCED points for each episode of disruptive behavior or excessive chatting while the instructor is lecturing. Please respect your neighbor's learning and my teaching environment. And please turn off your computer and cell phones – “ringing” cell phones and activity with phones and other electronic gadgets during class is considered disruptive behavior.. Thanks.

TEXT: Smith, R.L. 1996. Ecology and Field Biology. Fifth Edition. HarperCollins Publishers, Inc. New York, NY. Available in text rental. I also believe that a dictionary comes in handy.

OFFICE HOURS: My office is Room 474 CNR; phone 346-4255. Office hours are 1000-1130 hrs on Tuesday and 1330-1530 on Thursday. If I'm not in the office at these times, please call or leave a note under my door so that I can schedule an appointment with you. Please note that my time has to be managed carefully due to research, departmental activities, advising, etc. I appreciate your understanding and patience.

COURSE TOPICS AND TEXT READINGS: In your text focus on themes and italicized and emboldened print; unless specified in lecture, you're NOT responsible for Latin names of species nor for names of authors in the textbook. But in lecture, and unless told otherwise, you ARE responsible for the names of scientists I mention/cite. NOTE: text reading assignments do NOT necessarily reflect my lecture organization, its timing and/or theme of focus. Readings are primarily for self-learning.

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Lectures:

Introduction: What is Science, Ecology, and a brief review of the History of Ecology (Ch.1)

What is a species? Speciation. Natural Selection and Evolution (Ch. 3)

Life history evolution: life history strategies and population growth

Diversity of life: biomes and ecosystems (Ch. 4, 10, 13, 15)

Soil Ecology, Biogeochemical cycling

Energy and primary and secondary production

Ecosystem trophic structure, related topics including optimal foraging (Ch. 29)

Behavioral and community ecology: evolutionary stable strategies (game theory), density, distribution, competition, mutualism, biodiversity, and island biogeography

MID-TERM AND FINAL EXAMS: The first mid-term test, on **Friday, 5 October**, is based on lectures/handouts and Chapters 1 and 3 in text; the 2nd mid-term is on **Friday, 2 November** and is based on all material for 1st exam and lectures/handouts since 1st test and Chapters 4, 10, and 13. THE FINAL EXAM is **comprehensive** for entire semester of lectures and ALL book chapters listed above under “Lectures”; it occurs on **Thursday, 20 DECEMBER, 14:45-16:45 in CNR 170.**

DO NOT EXPECT ALL EXAM QUESTIONS TO BE WORDED IN THE FORMAT IN WHICH THE MATERIAL WAS PRESENTED IN LECTURE. EXAMS WILL COVER BOTH WHAT YOU KNOW AND HOW YOU CAN APPLY WHAT YOU KNOW. THUS MEMORIZATION (AND THE NUMBER OF HOURS DOING SUCH) WILL NOT NECESSARILY GUARANTEE A PARTICULAR LEVEL OF PERFORMANCE, GIVEN YOUR ABILITIES, STUDY HABITS, ETC. QUESTIONS OR COMMENTS ON A PREVIOUSLY TAKEN EXAM WILL ONLY BE ADDRESSED IN MY OFFICE.

EXAM QUERY EXAMPLES:

Sexual selection theory predicts that the sex that initially invests the least in gametes will be the limiting resource for the sex that invests the most. T or F?

Zach and Falls showed that Bluegill Sunfish prefer larger prey. T or F? (Ask yourself both if these are the correct authors and if Bluegills did this).

Natural Selection can only work if there is phenotypic variation among individuals. T or F?

DDT:

- a) is highly soluble in lipids
- b) is persistent in the environment
- c) moves primarily through the atmosphere, rather than through soil or water
- d) all of the above
- e) only a and b

Fitness

- a) is not related to the relative reproductive success of an organism
- b) is correlated with adaptation
- c) can be portrayed as a coefficient of a genotype
- d) all of the above
- e) only b and c

Genetic drift is:

- a) a non-random event
- b) based on changes in the gene pool of a small population due to chance
- c) a macro-evolutionary event
- d) all of the above
- e) only b and c

Cultural Evolution

- a) is learned information
- b) occurs “quicker” than organic evolution
- c) deals with memes
- d) all of the above
- e) only b and c

The Paleozoic Era spanned:

- a) 325,000 years
- b) 325,000,000 years
- c) 325,000,000,000 years
- d) none of the above

