TENNATIVE EV510: Ecology: Syllabus - Fanuchånan 202x
(3 credits)

Instructors and Course Coordinator: Ross Miller, Professor of Entomology at University of Guam WPTRC.
Michael Orr, Associate Professor of Biology, College of Natural and Applied Sciences, UoG and Lecturer at Bamfield Marine Science Centre, University of Victoria Canada.

TENATIVE Guest Lecturers – evolving daily :
12 Ross Miller - Professor of Entomology, College of Natural and Applied Sciences
2 Shane Siers – Director snake research USDA Wildlife Services.
2 Chris Lobban - Professor Emeritus of Biology, Division of Natural Sciences
3 Ciemon Cabales – UoG Marine Lab
4 Bruce Hatcher – Professor Cape Breton University, Director Bras D'Or Institute

Office and Office Hours

Office: Orr Laboratory, Dean's Circle, House 16
Office Hours: M 11:00AM-1:00 PM, W 11:00AM-1:00 PM, TH 11:00AM-1:00 PM or other times by appointment.
Office Phone: 735-2787

Lecture: T & Th 9:35 – 10:50 am, Orr Laboratory, House 16, Dean's Circle.

Rationale: The term "ecology" was coined by Haeckel over 100 years ago and literally means the "study of our house." From its heady "glory" days in the 1970s when an awareness of the environment and the effect humans have on it first gained the general public's attention, the field has grown into a multidisciplinary and multifaceted discipline that encompasses the entire globe. It is therefore imperative that environmental scientists understand the myriad complex interactions that occur in nature, appreciate the role that humans play as members of the global environmental community, and gain a basic understanding of the technology available to conduct research on various ecological principles, many of which are yet in their infancy.

Course Description: An overview of general ecology taught at the graduate student level as a core course in the Environmental Science Program. It is expected that many EV students taking this course will have little previous exposure to ecology, while others may have a substantial ecological and biological background. The course is designed to bring those students lacking a biological background quickly up to speed, while challenging those students with a substantial biological foundation. Emphasis is placed on fundamental ecological concepts with supplemental outside readings of seminal papers that form the foundation of current ecological thought.

While there is no formal laboratory associated with this course, a substantial independent research project (similar in format to those used by the Organization of Tropical Studies (OTS) in their Costa Rica-based courses) is required. This independent research will necessitate the submission of a detailed research proposal, require fieldwork, data analysis, and a written and oral report. Most work on this project will occur outside of normal classroom hours.

There are three hours of lecture weekly, divided into two sessions of approximately 1.5 hours each. Multiple lecturers drawn from CNAS and the UOG Marine Lab will present material on topics in which they are particularly interested.

Course Objectives:

1. Understand and appreciate the biotic and abiotic processes that sustain life, and the forces that shape it into the patterns we see around us.
2. Understand and appreciate the diverse interactions occurring between organisms and between organisms and the environment.
3. Understand and appreciate the interconnectedness of human activities with the abiotic and biotic environment.
4. Develop a foundation of knowledge adequate to undertake basic ecological research.

Environmental Science Program PLOs met by EV 510

Environmental Science Program Learning Objectives:	A. **Demonstrate the ability to design experiments and analyze data using standard statistical procedures.**
	B. **Demonstrate the ability to write highly technical scientific reports and articles.**
	C. **Demonstrate knowledge of basic biological and ecological and the environmental principles.**
	D. Demonstrate a knowledge of basic geosciences and engineering principles
	E. **Demonstrate knowledge of management of environmental resources.**
	F. **Demonstrate knowledge of environmental impact assessment.**
	G. **Demonstrate knowledge of current topics and research activities related to environmental science in the international as well as local literature.**
	H. **Demonstrate ability to conceive, conduct and report original research.**
	I. **Demonstrate knowledge of watershed management and other natural resources, affecting and/or affected by the environment.**

Classroom Format: The lecture will cover an extensive array of topics associated with the environment. Some topics involve interactions between the environment and organisms, between organisms of the same or different species, and between humans and the abiotic and biotic environment. Students are encouraged to take lecture notes and read assigned text material and handouts before each class. The reading material is a supplement to the information presented in the lectures and demonstrations. The schedule of lecture activities, including topics to be covered and required readings, and test dates, is contained in this syllabus. In general, you should expect to spend 2 hours studying outside of class for every hour spent in lecture.

Texts: "Krebs, C.J. 2009. Ecology, the experimental analysis of distribution and abundance. 6th ed. Benjamin Cummings. San Francisco. (required)

Cain, M.L., W.D Borman, S.D. Hacker. 2014. Ecology, 3rd ed. Sinauer Assoc., Sunderland, MA, USA. (optional text in place of Krebs)

Real, L.A. and J.H. Brown. 1991. Foundations of Ecology-classic papers with commentaries. Univ. Chicago Press. Chicago. (required)

Chazdon, R.L. and T.C. Whitmore. 2002. Foundations of Tropical Forest Biology. Univ. Chicago Press. Chicago.

Brower, J.E., J.H. Zar, C.N. von Ende. 1997. Field and Laboratory Methods for General Ecology. McGraw-Hill. San Francisco.

Vietmeyer, N. 2011. Our daily bread, the essential Norman Borlaug. Bracing Books, Lorton, VA.

COURSE REQUIREMENTS:

1. Lecture activities:

   a. Attendance at lectures is required. There will be material present in the lectures that may not be found in texts or additional readings. Make-up quizzes and exams will be given **only with consent of the instructor obtained prior to the quiz or exam date**.

   b. Students are encouraged to take detailed notes and to read assigned text material and readings prior to each class.

4. Term Paper:

   A paper based on original research, and designed to enhance writing and field/library/internet research skills is required. It must be a minimum of 10 double-spaced typewritten pages, excluding tables and figures, and be written in the scientific format employed by the Ecological Society of America. The

topic will be chosen by each student in consultation with the instructor, and a formal written proposal submitted. In addition to the written paper, a 10-15 minute oral presentation summarizing the research project and using presentation media or other visual media, will be also be made to the class.

6. Examinations and grading.

Exams:
First Midterm **100 points**
Final Verbal Exam **100 points**
Research Proposal **100 points**
Oral Presentation (25 points)
Written Proposal (75 points)

Research Paper **200 points**
Final Project Oral Presentation **100 points**
Total Points:**600 points**

Grading Scale:
558 -600 (93-100%)A
540 - 557 (90-92%)A-
522 - 539 (87-89%)B+
498 - 521 (83-86%)B
480 - 487 (80-82%)B-
462 - 479 (77-79%)C+
438 - 461 (73-76%)C
420-437(70-72%)C-
360-419(60-69%)D
0-359 (<60%)F

Student Workload

Students should expect to spend a minimum of two hours in outside preparation for each hour spent in lecture sessions. Preparation of research projects will require substantial time out of normal classroom hours.

Special needs

Students with special needs must make arrangements through the ADA office. The University makes every attempt to accommodate such requests (see below). Students who cannot meet the requirements of a particular field trip or activity must discuss the problem with the instructor in advance.

Drop dates

University policy sets the dates for dropping a class. You can withdraw from classes "voluntarily" until mid October (i.e., without notifying me) and as late as the end of the semester with my signature on a withdrawal form. Be aware of your standing in the course. When in doubt, ask.

DSS Accommodation Services
If you are a student with a disability who will require an accommodation(s) to participate in this course, please contact the Student Counseling and Advising Service Disability Support Services office to discuss your specific accommodation needs confidentially. A Faculty Notification letter will be emailed to me specifying your approved accommodations. If you are not registered, you should do so immediately at the Student Center, Rotunda office #5, sssablan@triton.uog.edu or ph/TTY: 735-2460, to coordinate your accommodation request.

Policy on Plagiarism and Cheating

Academic dishonesty: All assignments and tests must be your own original work. In this course, the use of **artificial intelligence (AI)** tools during tests and exams is strictly prohibited unless explicitly authorized by the instructor. It is crucial that tests reflect your own understanding and abilities. Any attempt to use AI to generate answers, write essays, solve problems, or otherwise influence your performance in assessments will be considered a violation of academic integrity.

Plagiarism includes but is not limited to the use, by paraphrase or direct quotation, of the published or unpublished work of another person without adequate acknowledgement of the original source. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

Cheating includes but is not limited to: (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, e.g., looking at other students' answers, using crib notes

(including electronic), getting information from another person via any kind of communication.

Plagiarizing in the term paper or cheating on tests will result in a score of 0 for that paper or exam. If a plagiarized paper is not replaced with original work during the semester, a grade of F will be assigned for the course. No retaking of an exam for which a 0 for cheating has been received will be allowed. If you are not sure what plagiarism is and how to avoid it in using sources for your work, see www.indiana.edu/~wts/pamphlets/plagiarism.shtml, and contact me as well. We will also discuss this in class, as well as how to correctly cite others' work in a scientific paper.

Other

Professional meetings for faculty and students, and other unforeseen circumstances may (and almost certainly will) make it necessary to amend parts of this syllabus. In such case, I will inform you in class, and by email, of the changes to be made, and wherever possible will consult with you prior to initiating the change.

UOG is a tobacco and smoke-free campus.

EV/BI 510 Course Outline

Tentative Schedule of Lecture Activities

Week of	Session No	Reading & Task Assignment	Subject
12 Aug	1	Syllabus, Ch. 1 Krebs,	Course Description; What is Ecology, Principles (Orr)
19 Aug	2	Ch. 2 & 3 Krebs, FE 3, 38 (27)	Student led presentations (Orr)
26 Aug	3	Ch. 4 & 5 Krebs, FE 4, 39	Student led presentations (Orr)
2 Sep	4	Ch. 6 & 7 Krebs, FE 6, 16	(Miller)
6 Sep	5	Ch. 15, 21 Krebs, FTFB Loiselle (441), 33	(Miller)
16 Sep	6	Ch. 8 Krebs, Flew-Intro to Malthus; FTFB 4	(Miller)
16 Sep	7	WSU Wheat; Our Daily Bread	(Miller)
23 Sep	8	Ch. 14 Krebs, FE 13	(Miller)
23 Sep	9	Ch. 9 Krebs, FE Real & Levin, 9, 10, 12; FTFB Whitmore, 9	Miller)
30 Sep	10	Ch. 14 Krebs, FE 13	Research proposals / Student led presentations (Orr)
30 Sep		**Oral Research Proposals Due by TBD**	
7 Oct	11	Ch. 10,11 Krebs, FE 33, 36,	(Lohban)

		37; FTFB Shemske	
7 Oct	12	Ch. 12,13 Krebs, FE 34, 35; FTFB 10	(Lohban)
14 Oct	13	Appendix I Krebs; FTFB Loisell (269)	(Shane Siers)
	14	FE 38; FTFB 17, 20	
Oct 7-11		Break	
21 Oct	15	Ch. 12,13 Krebs, FE 34, 35; FTFB 10	(Shane Siers)
21 Oct	16	Ch. 10,11 Krebs, FE 33, 36, 37; Groom et al. Chapt. 5	(Cabales)
28 Oct	**17**	Midterm Take Home Exam;	(Cabales)
28 Oct	18	Ch. 17 Krebs; FE16, Kyoto Protocol	(Orr)
4 Nov	19	Handouts, FTFB 13 FTFB Marquis	
11 Nov	20	Handouts, FTFB 16	Student led presentations (Orr)
11 Nov	21	Midterm Exams Due;	(Orr)
18 Nov	22	FE 27, 32; FTFB Chazdon (513), Burslem	
25 Nov	23	Handouts, FTFB 26, 28	(Hatcher) On-line
25 Nov			(Hatcher) On-line
	24		(Hatcher) On-line
25-27 Nov		**Thanksgiving Break**	
2 Dec	25	Ch. 22-24 Krebs; Handouts	Research topics questions/help (Orr)
2 Dec	26	Ch. 22-25 Krebs, FTFB Denslow	Research topics questions/help (Orr)
9 Dec	27		**Research Presentations**
9 Dec	28		**Research Presentations**
6-9 Dec	29	**Research Papers Due TBD**; **Research Presentations**	**Research Presentations**
6-9 Dec		Final Comprehensive Oral Exam	TBD