AMBROSE

BIO 213 INTRODUCTION TO ECOLOGY AND EVOLUTION (3)
FALL 2013

Course Description

The dynamics and maintenance of biological diversity are examined in terms of ecological processes and evolutionary principles.

Further Course Information

Prerequisite: BIO 133

Class Schedule

Meeting Times:

Lecture – Tuesdays and Thursdays 1:00-2:15
Lab – Fridays 2:30-5:15

Meeting Room:

Lecture – A2141
Lab – A2145

Instructor

Dr. Aaron L. Alford
Office: A2160
Phone: (403) 410-2000, ext. 5940
Email: aalford@ambrose.edu

Textbook (required)

Molles, M. C. and J. F. Cahill. 2011. Ecology: Concepts and Applications, 2nd Canadian Edition. McGraw-Hill Ryerson, Whitby.

Attendance

Regular attendance will be essential for success on all exams and assignments. No points will be subtracted from the grade for non-attendance. However, some assignments cannot be made up if missed.

Course Outline

I. Ecology, Evolution, and the Environment
   A. What is Ecology?
   B. Life on Land
   C. Life in Water
   D. Evolution and Speciation
   E. Environmental Relations
      1. Temperature Relations

2. Water Relations
3. Energy and Nutrient Relations

II. Populations
   A. Behavioral Ecology
   B. Life History and the Niche
   C. Distribution and Abundance
   D. Population Structure and Growth
   E. Competition

III. Communities and Ecosystems
   A. Ecological Interactions
      1. Competition
      2. Herbivory and Predation
      3. Symbioses
   B. Patterns and Processes
      1. Abundance and Diversity
      2. Succession
      3. Energy and Nutrient Cycling
      4. Macroecology and Global Ecology

Expected Learning Outcomes

This class will cover the introductory concepts of ecology and evolution, including biomes, population dynamics and growth, species interactions, and energy and nutrient cycling.

Learning Objectives

1. Students will gain a greater understanding of the evolution principles that shape phylogeny and be able to discuss the evolutionary history, biological diversity and modern relationships between species
2. Students will learn and apply the principles of population genetics, natural selection, predation, competition, and those of symbiotic relationships
3. Students will learn the principles of ecology that describe population growth, community dynamics, and ecosystem processes
4. Students will collaborate with peers in a laboratory setting

Course Requirements

Assignments

All exams and assignments are announced and/or scheduled in advance. Assignments are due at the designated time; please see the late policy below for additional information about late work.

Lecture

1. Lecture exams are objective, utilizing a variety of formats including multiple-choice, matching, true/false, completion, short answer, and essay questions.

2. The final exam will have a structure similar to the midterm exams, with a combination of question formats. Approximately 75% of the final exam will cover new material, whereas approximately 25% of the exam will consist of comprehensive material. Further details regarding this comprehensive material will be forthcoming.

Lab (Begins 6 September)

1. Lab Reports are exercises designed to review major concepts, summarize pertinent results, and demonstrate comprehension of material covered during the lab session. Lab reports will always be collected at the beginning of the class in which they are due, unless otherwise noted by the instructor.

2. During the term, each student will take part in a long-term experimental investigation focused on protist community dynamics. Explanatory material for investigations will be forthcoming.

Please note: Attendance at the laboratory sessions is compulsory. Any lab missed without a valid excuse cannot be made up. A valid excuse (such as illness, death in the family etc.) must be validated by written proof from a doctor or counselor. Some lab activities will require field data collection at sites around Calgary. It is important to be prepared for such activities. Proper preparations include: sturdy clothing and shoes (long pants, long sleeves, closed-toed shoes), rain gear (jacket and pants), necessary food and water, field notebook (water resistant or place in a ziploc bag), pencil, hat, sunscreen, and insect repellent. Come prepared to work rain or shine, and for the entire lab time. Finally, you MUST let the instructor know if you have allergies (food, bee stings, poison ivy, etc.) that will prevent you from participating in labs.

Point Distribution

Activity	**Percent of Grade**
Written Exams	40%
Lecture Activities	8%
Final Exam	20%
Lab Reports 1-5	17%
Lab Project Report and Presentation	15%

Grading Scale

A+	97-100%	C+	67-69%
A	93-96% Excellent	C	63-66% Satisfactory
A-	89-93%	C-	60-62%
B+	83-89%	D+	54-59%
B	77-82% Good	D	50-53% Minimal Pass
B-	70-76%	F	Below 50% Fail

Please note: An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of $50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.

Important Notes

Revised Final Exam Times

Students may request revised final exams if they have three exams in one 24-hour period or two exams at the same time. Final exam schedule revision request forms are available at the Registrar's Office and must be handed in by Monday, October 28, 2013 (Fall semester) or Monday, March 3, 2014 (winter semester). If you do not have your request in by this date, all exams within a 24-hour period will have to be written as scheduled. If you have two exams at the same time, you will be given four hours to write both exams. Graded final examinations will be available for supervised review at the request of the student. Please contact your instructor.

Late Policy

Over the course of term, we will be engaged in a number of projects that require both faculty-student and student-student collaboration. Often, these collaborations will culminate in assignments that will be turned for a grade. Thus, it will be vital that all parties take responsibility for their part of these activities. As your instructor, I will provide clear objectives, adequate time, and necessary assistance for completing these assignments. As students, you will be responsible for working together and managing your time such that you are prepared for due dates. This will not only help improve your grade, but also will make for a more pleasant interaction with me and your fellow students. With that said, I realize that certain circumstances prevent students from turning in individual assignments on time. I have developed the following late policy to address these situations. This late policy will apply to all lecture and laboratory assignments. However, the late policy will not cover lecture exams, the final exam, or the lab project report and presentation, all of which must be turned in on time.

Condition	**Markdown**
Assignment was turned in on the same calendar day* after the time it was due, or 1 calendar day after it is due	10%
Assignment is turned in 2 calendar days after it is due	20%
Assignment is turned in 3 calendar days after it is due	30%
Assignment is turned in 4 calendar days after it is due	40%
Assignment is turned in 5 calendar days after it is due	50%
Assignment is turned in >5 calendar days after it is due	100%

*Calendar days include both weekdays and weekends

Electronic Etiquette

Students are expected to treat their instructor, guest speakers, and fellow students with respect. It is disruptive to the learning goals of a course or seminar and disrespectful to fellow students and the instructor to engage in electronically-enabled activities unrelated to the class during a class session. Please TURN OFF all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. Please DO NOT use iPods, MP3 players,

or headphones. Do not text, read or send personal emails, go on Facebook or other social networks, search the internet, or play computer games during class. The professor has the right to disallow the student to use a laptop in future lectures and/or to ask a student to withdraw from the session if s/he does not comply with this policy. Repeat offenders will be directed to the Dean. If you are expecting communication due to an emergency, please speak with the professor before the class begins.

Academic Policies

It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at privacy@ambrose.edu.

Extensions

Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a "Course Extension" from the Registrar's Office. Requests for course extensions or alternative examination time must be submitted to the Registrar's Office by the appropriate deadline (as listed in the Academic Calendar http://www.ambrose.edu/publications/academiccalendar). Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control."

Academic Integrity

We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else's ideas, words, or work as one's own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person's ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from the university college. Students are expected to be familiar with the policies in the current Academic Calendar and the Student Handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student's permanent record.

Students are strongly advised to retain this syllabus for their records!

Course Schedule (tentative)

Month	Week	Date	Lecture Topic	Text Reading	Other Reading (details below)	Lab Topic
Sep	1	4	Classes Begin			
		5	Introduction			
		6				Statistics/Using Excel
		9				
		10	Intro to Ecology; Terrestrial Systems	Ch 1, Ch 2		
	2	11				
		12	Aquatic Systems	Ch 3		
		13				Tree Allometry (Aspen Stand)
		16				
		17	Evolution and Speciation	Ch 4	Reading 1	
	3	18				
		19	Evolution and Speciation	Ch 4		
		20				Natural Selection
	4	23				

		24	Environmental Relations: Temperature and Water	Ch 5		
		25	Spiritual Emphasis Days			
		26	Spiritual Emphasis Days			
		27				Environmental Relations (Aspen Stand)
		30				
Oct	5	1	Environmental Relations: Energy and Nutrients	Ch 7	Reading 2	
		2				
		3	Catchup/Exam 1 Review			
		4				Environmental Relations (Lab)
		7				
		8	**Exam 1**			
	6	9				
		10	Behavioral Ecology	Ch 8		
		11				
		14	Thanksgiving (no classes)			
	7	15	Life Histories and Niche	Ch 9	Reading 3	
		16				
		17	Life Histories and Niche	Ch 9		
		18				Protist Lab Project
	8	21				

		22	Population Abundance and Distribution	Ch 10, Ch 11		
		23				
		24	Population Age Distribution and Dispersal	Ch 11		
		25				Niches
		28	Last day to request revised final exam time			
		29	Population Growth	Ch 12	Reading 4	
	9	30				
		31	Competition	Ch 13		
Nov		1				Protist Lab Project
		4				
		5	Catchup/Exam 2 Review			
	10	6				
		7	**Exam 2**			
		8				Protist Lab Project
		11	Remembrance Day (no classes)			
		12	Herbivory and Predation	Ch 14		
	11	13				
		14	Symbioses	Ch 15		
		15				Protist Lab Project

	12	18				
		19	Abundance and Diversity	Ch 16	Reading 5	
		20				
		21	Community Structure	Ch 17		
		22				Protist Lab Project
	13	25	Last day to apply for course work extension			
		26	Succession	Ch 18	Reading 6	
		27				
		28	Energy Flow	Ch 19		
		29				Lab Project Presentations
Dec	14	2				
		3	Nutrient Cycling	Ch 20		
		4				
		5	Macroecology and Global Ecology	Ch 22, Ch 23		
		6				
	15	9	Last Day of Fall Classes			
		10				
		11	Finals (11-18 December)			
		12				
		13				