



BIO 213

Introduction to Ecology and Evolution

Number of credits: 3

Prerequisite:
BIO 133

Semester: Fall, 2014

Days: TU / TR 1:00-2:15

Room: A2141

Lab – day: M 2:30-5:15

Lab–Room: A2151

Instructor: Graeme Gissing

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Phone: 403-410-2000 x 5940

Office: G2204

Office hours: To be arranged and by appointment

Course Description:

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

Further Course Information:

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

Expected Learning Outcomes:

It is the aim of the course that students acquire the following skills:

1. Students will gain a greater understanding of evolutionary principles and theory that shape phylogeny and be able to discuss the evolutionary history, biological diversity, and modern relationships between organisms, populations, and species

Important Dates:

First day of classes: September 3, 2014

Registration revision period: September 14, 2014

Last day to request revised examination: October 27, 2014

Last day to withdraw from course: November 12, 2014

Last day to apply for time extension for coursework: November 24, 2014

Last day of classes: December 9, 2014

Final Exam: December 16, 2014

Time: 9:00 AM – 12:00 PM

Room: A2141

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2. Students will learn and apply the principles of population genetics, natural selection, predation, competition, and 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 and conduct a collaborative ecology research project

Outline:

This outline will serve as a guide to topics covered. It may change as the semester progresses. A detailed weekly schedule will be provided to students in class during the first week.

I. Ecology, Evolution, and the Environment

- A. Introduction to Ecology (Week 1, Chapter 1)
- B. Life on Land (Week 2, Chapter 2)
- C. Life in Water (Week 2, Chapter 3)
- D. Evolution and Speciation (Week 3, Chapter 4)
- E. Environmental Relations
 1. Temperature Relations (Week 4, Chapter 5)
 2. Water Relations (Week 4, Chapter 6)
 3. Energy and Nutrient Relations (Week 5, Chapter 7)

II. Populations

- A. Behavioral Ecology (Week 6, Chapter 8)
- B. Life History and the Niche (Week 7, Chapter 9)
- C. Distribution and Abundance of Populations and Species (Week 8, Chapter 10)
- D. Population Structure (Week 8, Chapter 11)
- E. Population Dynamics and Growth (Week 9, Chapter 12)

III. Communities and Ecosystems

- A. Ecological Interactions
 1. Competition (Week 9, Chapter 13)
 2. Herbivory and Predation (Week 10, Chapter 14)
 3. Symbioses, Mutualism, Parasitism, Disease (Week 11, Chapter 15)
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B. Patterns and Processes

1. Community Structure, Abundance, Diversity (Week 12, Chapter 16)
2. Community Structure, Species Interactions (Week 12, Chapter 17)
3. Disturbance, Succession, and Stability (Week 13, Chapter 18)
4. Production and Energy Flow (Week 13, Chapter 19)
5. Nutrient Cycling (Week 14, Chapter 20)
6. Macroecology (Week 14, Chapter 22)
7. Global Ecology (Week 15, Chapter 23)

Requirements:

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.

Theory (Lecture) Exams

1. Lecture exams are objective, utilizing a variety of formats including multiple-choice, matching, true/false, completion, short answer, and may contain a small set of selected essay questions.
2. The final exam will have a structure similar to the term exams, with a combination of question formats. Approximately 50% of the final exam will cover new material, whereas approximately 50% of the exam will consist of comprehensive material. This ratio may change based on class progress but will be made clear prior to the final exam. Further details regarding this comprehensive material will be forthcoming.

Lab

1. Lab Reports (where applicable) 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 or investigative research project in ecology. Explanatory material for the project 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-toe 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 **IN ADVANCE** if you have allergies (food, bee stings, poison ivy, etc.) that will prevent you from participating in labs.

Submission of Assignments:

All written assignments are to be printed and handed in as a hard copy unless otherwise instructed. Emailed assignments will **not** be accepted unless specifically asked for as a submission method.

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 that will be turned for a grading. Thus, it will be vital that all parties take responsibility for their part in these activities. 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. I realize that certain circumstances prevent students from turning in individual assignments on time and have developed the following late policy to address these rare situations. This policy will apply to all lecture and laboratory assignments. The late policy will NOT cover term exams, the final exam, or the ecology term project, all of which MUST be turned in on time or a grade of zero will be assigned.

Condition (calendar days include both weekdays and weekends)	Deduction
Assignment was turned in on the same calendar day after the time it was due, or the next calendar day (e.g. Due: Monday, handed in on Tuesday)	20%
Assignment is turned in 2 calendar days after it is due (e.g. Due: Monday, handed in Wednesday)	30%
Assignment is turned in 3 calendar days after it is due (e.g. Due: Friday, handed in on Monday)	40%
Assignment is turned in 4 calendar days after it is due (e.g. Due: Monday, handed in on Friday)	50%
Assignment is turned in 5 or more calendar days after it is due	100%

Attendance:

Regular attendance will be essential for success on all exams and assignments. No points will be subtracted from your grade for non-attendance. However, unannounced in-class assignments and unannounced in-class quizzes cannot be made up and, if missed, will receive a grade of zero.

Evaluation:

Activity	Percent of Grade
Written Term Exams (2)	40%
Lecture Activities and/or Unannounced Quizzes (5)	10%
Lab Reports (5 - the number of lab reports may change)	15%
Term Project Report and Presentation (1)	15%
Final Exam (1)	20%

Grade Summary:

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

Because of the nature of the Alpha 4.00 system, there can be no uniform College-wide conversion scale. The relationship between raw scores (e.g. percentages) and the resultant letter grade will depend on the nature of the course and the instructor's assessment of the level of each class, compared to similar classes taught previously. Please note that final grades will be available on student registration system. Printed grade sheets are no longer mailed out.

Textbook(s):

Required: Molles, M. C. and J. F. Cahill. 2014. Ecology: Concepts and Applications, 3rd Canadian Edition. McGraw-Hill Ryerson, Whitby.

Policies:

All students have received an Ambrose e-mail account upon registration. It is the student's responsibility to check this account regularly as the Ambrose email system will be the professor's instrument for notifying students of important matters (Cancelled class sessions, extensions, requested appointments, etc.) between class sessions. If students do not wish to use their Ambrose accounts, it is highly recommended that they forward all messages from the Ambrose account to the other account.

During the **Registration Revision Period** students may to enter a course without permission, change the designation of any class from credit to audit and /or voluntary withdraw from a course without financial or academic penalty. These courses will not appear on the student's transcript. Courses should be added or dropped on the student portal by the deadline date, please consult the List of Important Dates. After that date, the original status remains and the student is responsible for related fees.

Students intending to withdraw from a course after the Registration Revision Period must apply to the Office of the Registrar by submitting a Request to Withdraw from a Course by the **Withdrawal Deadline**, please consult the List of Important Dates. Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. A grade of "W" will appear on the student's transcript.

Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.

Students, who find a conflict in their exam schedule must submit a **Revised Examination** Request form to the Registrar's Office by the deadline date, please consult the List of Important Dates. Requests will be considered for the following reasons only: 1) the scheduled final examination slot conflicts with another exam; 2) three final exams within three consecutive exam time blocks; 3) the scheduled final exam slot conflicts with an exam at another institution; 4) extenuating circumstances. Travel is not considered a valid excuse for re-scheduling or missing a final exam.

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 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 deadline date, please consult the List of Important Dates. Course extensions are only granted for serious issues that arise "due to circumstances beyond the student's control".

Appeal of Grade

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.

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 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.