Course ID:	Course Title:	Fall 2017
BIO 213	Principles of Ecology	Prerequisite: BIO 133
		Credits: 3

Class Information		Instructor Information		Important Dates	
Days:	Wed/Fri	**Instructor:**	Matthew Morris, PhD	**First day of classes:**	Wed., Sept. 6
Time:	1:00 – 2:15 pm	**Email:**	Matthew.Morris@ambrose.edu	**Last day to add/drop, or change to audit:**	Sun, Sept. 17
Room:	A2210	**Phone:**	403-410-2000 ext 6932	**Last day to request revised exam:**	Mon, Oct. 23
Lab/ Tutorial:	Mon 1-4 pm A2145/A2212	**Office:**	A2158	**Last day to withdraw from course:**	Mon, Nov. 13
		Office Hours:	By appointment	**Last day to apply for coursework extension:**	Mon, Nov. 20
Final Exam:	Fri Dec 15, 1-4 pm, Airhart			**Last day of classes:**	Mon, Dec. 11

Course Description

The dynamics and maintenance of biological diversity are examined in terms of ecological processes, conservation of species, habitats, and evolutionary principles. Ecological principles and organism interactions at individual, population, community and ecosystem levels will be explored.

Expected Learning Outcomes

1. Students will be able to relate the science of ecology to the practice of their faith.

2. Students will learn to communicate ecological principles through scientific writing.

3. Students will demonstrate means of quantifying population growth rate and biodiversity metrics.

4. Students will demonstrate knowledge of principles from different ecological disciplines, including ranges of tolerance, fundamental and realized niches, intraspecific and interspecific interactions, optimal foraging, allocation of energy, exponential and logistic growth, predator-prey dynamics, r and k life histories, competitive exclusion, trophic cascades, succession, nitrogen and phosphorus cycles, invasive species, and disease prevalence, and apply them to real-world problems.

Textbooks

Molles J, Cahill M (2014) *Ecology: Concepts and Applications, Third Canadian Edition*. McGraw-Hill Ryerson: Canada.

Course Schedule

Week	Topic	Ch: pg
Sept 6	Defining ecology	1: 2-12
Sept 8	Physiology I: Change	4: 90-110
Sept 13	Physiology II: Temperature	5: 122-144
Sept 15	Physiology III: Salinity	6: 150-151, 165-169
Sept 20	The niche	9: 250-253, 11:349-353
Sept 22	Behaviour I: Ecology of sex	No readings
Sept 27	**NO CLASS**	
Sept 29	Behaviour II: Mating systems	8: 216-226
Oct 4	Behaviour III: Conflict	No readings
Oct 6	Behaviour IV: Optimal foraging	7: 175-196
Oct 11	Populations I: Characteristics of populations	10:263-286
Oct 13	Populations II: Intraspecific interactions	8: 203-215
Oct 18	Populations III: Birth, death, and population growth	11: 294-305, 12: 311-332
Oct 20	Communities I: Interactions and properties	13: 336-337, 15: 392-399, 404-408 16: 422-432
Oct 25	Communities II: Population growth with competitors	13: 337-349, 354-356
Oct 27	Communities III: Population growth with predators	14: 362-385
Nov 1	Communities IV: Life histories	9: 232-250
Nov 3	Communities V: Food webs and networks	17: 447-466
Nov 8	**NO CLASS**	
Nov 10	**NO CLASS**	
Nov 15	Communities VI: Succession and stability	18: 469-500
Nov 17	Ecosystems I: Nutrient cycling and energy flow	TBA
Nov 22	Ecosystems II: Ecosystem services	TBA
Nov 24	Conservation ecology I	TBA
Nov 29	Conservation ecology II	TBA
Dec 6	Urban ecology	TBA
Dec 8	Medical ecology	TBA

Lab schedule

Week	**Topic**	Due
Sept 11	Ambrose outdoors	
Sept 18	Flour beetles	**Experimental design due in-class Sept 22**
Sept 25	Describing a population/ Flour beetles II	Population Pre-lab Intro to flour beetles
Oct 2	Biodiversity setup	Quadrat pre-lab Population assignment
Oct 9	**NO LAB**	
Oct 16	Quadrat sampling	
Oct 23	Midterm	Quadrat assignment
Oct 30	Mark-Recapture	
Nov 6	**NO LAB**	
Nov 13	Field trip	Mark-recapture
Nov 20	Biodiversity I and II	Field trip
Nov 27	Flour beetles	Biodiversity I
Dec 4	Conservation ecology	Biodiversity II, Conservation ecology
Dec 11	TBA	Flour beetles paper

Requirements:
Mark distribution:

Quizzes/Assignments: 10%
Midterm: 20%
Final exam: 30%
Lab: 40%

Quizzes will not be cumulative. The final will include content from before the midterm. The midterm will occupy a lab session to allow for greater time for completion.

There will be no exam or tests for the laboratory component. However, the theory and problems behind the lab topics may be included in any of the tests and final exam.

The schedule provided above is flexible and may be altered. Consult the Moodle website for the most up-to-date schedule.

Due dates and test dates can be found under Course Schedule. Late submissions are not accepted unless sufficient reason is provided in a written request for extension to the instructor prior to the due date. Please note that students must earn at least 60% of the laboratory component marks in order to receive a passing grade for the class. That is, a student could have a high mark and still receive an F for the course if they fail to attend labs.

Marks for the laboratory component are distributed as follows. Percentages add up to 40%, which is the contribution of the lab to your total mark.

Flour beetles experimental design – 2%
Describing a population – 4%
Quadrat sampling – 5%
Mark-Recapture – 4%
Field trip – 3%
Biodiversity I – 4%
Biodiversity II – 6%
Flour beetles – 10%
Conservation ecology – 2%

Attendance:

Although attendance to lectures is not mandatory, homework assignments and quizzes will not be announced ahead of time, will not be posted on Moodle, and cannot be made up. Attendance is compulsory for all laboratory exercises and exams.

Grade Summary:

The available letters for course grades are as follows:

Letter Grade	Description
A+	
A	Excellent
A-	
B+	
B	Good
B-	
C+	
C	Satisfactory
C-	
D+	
D	Minimal Pass
F	Failure

Grading scheme for BIO 213:

A+	*93.0 – 100%*	*C+*	*66.0 – 69.9%*
A	*86.0 – 92.9%*	*C*	*62.0 – 65.9%*
A–	*82.0 – 85.9%*	*C–*	*58.0 – 61.9%*
B+	*78.0 – 81.9%*	*D+*	*54.0 – 57.9%*
B	*74.0 – 77.9%*	*D*	*50.0 – 53.9%*
B–	*70.0 – 73.9%*	*F*	*Below 49.9%*

Because of the nature of the Alpha 4.00 system, there can be no uniform University-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 not mailed out.

Ambrose University Academic Policies:

Communication
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, they will need to forward all messages from the Ambrose account to another personal account.

Registration
During the **Registration Revision Period** students may 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 or record. 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" form or by sending an email to the Registrar's Office by the **Withdrawal Deadline;** please consult the List of Important Dates on the my.ambrose.edu website. Students will not receive a tuition refund for courses from which they withdraw after the Registration Revision period. A grade of "W" will appear on their 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.

Exam Scheduling
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) the student has 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 use electronics for purposes unrelated to the course during a class session. Turn off all cell phones and other electronic devices during class. Laptops should be used for class-related purposes only. 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. Some professors will not allow the use of any electronic devises in 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 (information about an individual that may be used to identify that individual) may be required 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 Registrar's Office in writing and providing the basis for appeal 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. 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 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 acknowledge 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.

Note: Students are strongly advised to retain this syllabus for their records.