BIOL 208A Principles of Ecology

3 Credits, 3 hours lecture and 3 hours lab per week
Biology 208 deals with the principles of ecology including the interactions between organisms and their environment resulting in the formation of communities, ecosystems and biomes. Biology 208 is a core course in the department of biology and is required for animal biology, bioinformatics, cell biotechnology, environmental biology, evolutionary biology, microbiology, molecular genetics, physiology, and plant biology.

Must have completed BIOL 108 – An Introduction to Biodiversity

Instructor

Dr. David Smith
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Office Hours

Monday to Friday 12:00 PM – 12:50 PM, S209B

Hours of Instruction

Lecture: Wednesday 10:00 – 11:50, CC 237
        Thursday 9:00 – 9:50, CC 237
Laboratory: Friday 9:00 AM – 11:50 AM, CC234

Required Resources

Molles, M.C. and J.C. Cahill   2017. Ecology: Concepts and Applications, Fourth Canadian Edition McGraw Hill Reyerson, Toronto. 9780071093323 • 007109332X

Full outdoor apparel for fall and winter weather including suitable footwear

Course Outcomes

The student will be able to:
- Demonstrate familiarity with the fundamental principles of how ecological systems are structured and how they function at organismal-, population- and community-levels of biological organization
- Identify the major biotic and abiotic selective forces that contribute to differential survivorship, and to assess how organisms respond to these challenges on a short term and long term basis, and how these responses contribute to the structure and function of ecological systems
- Explain the mechanisms of organic evolution in an ecological context
- Successfully participate in the range of activities used by ecologists, including the collection of data from laboratory and field studies, the use and interpretation of relevant scientific literature, and the understanding and analysis of qualitative and quantitative information
- Demonstrate the development of ecological literacy in topical local, regional, and global issues

Evaluation

Assignments -   25% due one week after each lab

Written report and oral presentation - 15% due week of December 3

Midterm Exam - 25% week of October 15

Final Exam -   35%

Total   100%

A grade of C- is required for progression or transfer.

Grading System

Descriptor	Alpha Grade	4.0 Scale	Percent	Rubric for Letter Grades
	A+	4.0	> 92.9	Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format.
Excellent	A	4.0	85 – 92.9	
	A-	3.7	80 – 84.9	
	B+	3.3	77 – 79.9	Work is generally of high quality, well developed, well written, has clarity, and uses proper format.
Good	B	3.0	74 – 76.9	
	B-	2.7	70 – 73.9	
	C+	2.3	67 – 69.9	Work has some developed ideas but needs more attention to clarity, style and formatting.
Satisfactory	C	2.0	64 – 66.9	
Progression	C-	1.7	60 – 63.9	
Poor	D+	1.3	55 – 59.9	Work is completed in a general way with minimal support, or is poorly written or did not use proper format.
Minimum Pass	D	1.0	50 – 54.9	
Failure	F	0.0	< 50	Responses fail to demonstrate appropriate understanding or are fundamentally incomplete.

Proposed Schedule of Topics

Week of: Fall 2018 semester, Lecture and Laboratory Topics

September 3	Introduction – no lab
September 10	Sampling methods – Field Lab 1 (Sampling a plant community)
September 17	Population ecology – Chapter 10, 11, Field Lab 2 (Competition and niche partitioning within a spruce forest and sedge fen)
September 24	Community ecology – Chapter 12, Field Lab 3 (Terrestrial plant community assessment)
October 1	Ecosystems – Chapter 16, 17, 18, Field Lab 4 (Microcommunities)
October 8	Case study: terrestrial boreal and subarctic ecosystems – Lab 5, (Microcommunities continued)
October 15	Anthropogenic effects – Chapter 23, (Field Lab 6, Soil ecology)
October 22	Temperature and water relations – Chapter 5, 6, 15. Field Lab (Lab 7, Species richness and diversity within a black spruce bog)
October 29	Herbivory and mutualism – Chapter 14, Chapter 22, Lab 8 (Age distribution and survivorship)
November 5	Productivity and Succession – Chapters 18 and 19, No Lab – Holiday
November 12	Biodiversity and conservation – Chapter 23, Lab 9 (Natural selection)
November 19	Aquatic ecosystems – Chapter 21, Lab 10 (Population growth)
November 26	Allocation and life history patterns – Chapter 7, Lab review
December 3	Mineral cycles – Chapter 20, Term project oral presentations and written report due
December 10	Exam week

Please Note:
Date and time allotted to each topic is subject to change.

Performance Requirements

Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

Laboratory Safety

In the science laboratories, safety is important.

Students must complete the *WHMIS for Students* online training course on Moodle before entering the science laboratories.

Students must comply with the mandatory laboratory safety rules for this course as provided in the laboratory manual. Failure to do so will result in progressive discipline such as a verbal warning, refused entry into the laboratory, or suspension from the College.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a students' learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Use of phones and laptops are not permitted unless instructor grants permission for a class-related activity. Attendance of lectures and laboratories is mandatory and will be monitored and reported to the Chair. Missing two or more labs will result in failure.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre and Wellness Services, work together to support student success at Keyano College.

Accessibility Services (CC167) supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934

Skill Centre (CC119) provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff. Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for

students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 9:00 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

Wellness Services (CC260) offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges. Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Text Anxiety. Individual appointments can be made by calling 780-791-8934.

Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.