BIOL 208 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
S209B
780-791-4997
david.smith@keyano.ca

Office Hours

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

Hours of Instruction

Lecture: Monday 10:00 – 10:50 S210, Tuesday 1:00 – 1:50 S214, Wednesday 4:00-4:50 S210

Laboratory: Thursday 9:00 – 11:50 CC234

Required Resources

Molles, M.C. and A. Laursen. 2020. Ecology: Concepts and Applications, Fifth Canadian Edition McGraw Hill Reyerson, Toronto. 1260065812 · 9781260065817

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 -15% due one week after each lab

Written report and oral presentation - 20% due week of November 21

Midterm Exam - 25% week of October 10

Final Exam -   40%

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 2022 semester, Lecture and Laboratory Topics

August 29	Sampling methods – no lab
September 5	Life in water – Field Lab 1 (Sampling a floodplain plant community)
September 12	Temperature relations – Field Lab 2 (Competition and niche partitioning within a spruce forest and sedge fen)
September 19	Water relations – Field Lab 3 (Nutrient-limited black spruce bog)
September 26	Energy and nutrient relations – Field Lab 4 (Species diversity and richness in invertebrate microcommunities)
October 3	Behavioral ecology – Lab 5, (Species diversity and richness in invertebrate microcommunities continued)
October 10	Population ecology – Field Lab (Lab 6, Soil ecology of a Regosol)
October 17	Species interactions – Field Lab (Lab 7, Species richness and diversity within a black spruce bog using point frame method)
October 24	Community ecology – Lab 8 (Demography: age distribution and survivorship)
October 31	Ecosystems Lab 9 (Population growth models)
November 7	Herbivory and predation – No Lab – Holiday
November 14	Nutrient and elemental recycling, , Lab 10 (Genetics and Conservation Biology)
November 21	Production and energy flow – No Lab
November 28	Biodiversity and conservation –, Term project oral presentations and written report due – No Lab
December 5	Exam week

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

Performance Requirements and Student Services

Student Responsibilities

As a student, it is your responsibility to contact the Office of the Registrar to complete the required forms, including the Withdraw Course or Program or a Change of Registration form. Please refer to the important dates listed in the Academic Schedule in the Keyano College credit calendar. The Keyano College credit calendar also has information about Student Rights and the Code of Conduct. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and the Code of Conduct Policies.

Student Attendance

Class attendance is helpful for two reasons: First, class attendance maximizes a student's learning experience. Second, attending class is an excellent way to keep informed of matters relating to the course administration (e.g., the timing of assignments and exams). Ultimately, you are responsible for your learning and performance in this course. It is the responsibility of each student to be prepared for all classes. Absent students are responsible for the material covered in those classes, and students must ensure they are ready for their next class, including completing any missed assignments and notes.

Academic Misconduct

Students are considered responsible adults and should adhere to the principles of intellectual integrity. Intellectual dishonesty takes many forms:

- Plagiarism or the submission of another person's work as their 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,
- Submitting unchanged work for another assignment, and
- 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 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 Code of Conduct Policies. To ensure your understanding of plagiarism, you may be required to complete the online Understanding Plagiarism tutorial and submit the certificate of completion.

Online Learning

Technology and internet connectivity will impact your online learning experience. You may be required to watch online videos, take online quizzes, or participate in live online classes. Live/virtual courses will be hosted in Microsoft Teams or Zoom. For all course delivery types, you will access your course resources on Keyano's learning management system: Moodle (iLearn). Login in using your Keyano username and password. Keyano College operates in a Windows-based environment and having access to the correct tools for online learning is essential. Here's a list of recommended system requirements.

Internet Speed

Minimum download and upload speeds of 10 Mbps. Recommended download speeds of 25 Mbps and upload speeds of 10 Mbps (if you are sharing your internet at home). You can check your internet speed with Speedtest by Ookla.

Computer System Requirements

Microsoft Windows	Apple (Mac)
Minimum Requirements:	**Minimum Requirements:**
1. Windows 10 Operating System or above	1. Mac Operating System 10.14 (Monterey) or above
2. 4GB of RAM	2. 4GB of RAM
3. 10GB available hard drive storage space	3. 10GB available hard drive storage space
a. Install the Microsoft Office 365 suite (~3GB) *	a. Install the Microsoft Office 365 suite (~3GB) *
4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in.)	4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in.)
5. Windows has built-in anti-virus/malware software. It is essential to install system updates to keep your device secured regularly.	5. Mac has built-in anti-virus/malware software. It is important to install system updates to keep your device secured regularly.
*Microsoft Office 365 is free to Keyano students.	*Microsoft office 365 is free to Keyano students.

Recommended Upgrades	Recommended Upgrades
• 8GB of RAM • Regularly back up or synchronize your files, locally or with a cloud-based storage option. OneDrive is the cloud-based storage option free to students after the setup of KeyanoMail and Microsoft 365.	• 8GB of RAM • Regularly back up or synchronize your files locally or with a cloud-based storage option. OneDrive is the cloud-based storage option free to students after the setup of KeyanoMail and Microsoft 365.
Tablets, iPads, and Chromebooks are **not** recommended: they may not be compatible with the testing lockdown browsers and Microsoft Office 365.	

Specific Department Requirements

Business and OA programs require Windows 10.
Other programs may utilize Windows-based tools as well.

Computer Software

Students have access to Microsoft Office 365 and Read&Write for free using Keyano credentials.

Recording of Lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not share, distribute, or publish any of the lectures or course materials; this includes any recordings, slides, instructor notes, etc., on any platform. Thus, no student is allowed to share, distribute, publish or sell course-related content without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The Academic Integrity Policy provides additional information on Keyano College's expectations from students as members of the intellectual community.

ITS Helpdesk

If you have issues with your student account, you can contact the ITS Helpdesk by emailing its.helpdesk@keyano.ca or calling 780-791-4965.

COVID-19 We are subject to provincial, and municipal bylaws, and policies. These decisions may change pending further direction from the Alberta Chief Medical Officer, Alberta Health Services, and other provincial guidelines. To protect yourself and others, get immunized, wash your hands, wear a mask, keep your distance (2m/6 ft) and remain home when feeling unwell. For the most recent COVID-19 information, please refer to albertahealthservices.ca/COVID.

Specialized Supports The Student Services Department is committed to Keyano students and their academic success. There is a variety of student support available at Keyano. All student services are available during Keyano business hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. The College is closed on statutory holidays. If you require support outside of regular business hours, please inform the support service team, and they will do their best to accommodate your needs.

Accessibility Services provides accommodations for students living with disabilities. Students with documented disabilities or who suspect a disability can meet with an Access Strategist to discuss their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact the department to request accommodations for the following semester. Please note that requesting accommodations is a process and requires time to arrange.

Contact the department as soon as you know you may require accommodations. For accessibility supports and disability-based funding, please book an appointment by emailing us at: accessibility.services@keyano.ca.

Accessibility Services also provides individual and group learning strategy instruction for all students and technology training and support to enhance learning. You can meet with an Access Strategist to learn studying and test-taking strategies. In addition, you can schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing: accessibility.services@keyano.ca

Wellness Services 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 provide a safe and confidential environment for you to seek help with personal concerns. Our Wellness Navigator offers support with basic needs such as housing, financial and nutritional support, and outside referrals when needed. Wellness Services welcomes students to participate in group sessions that address topics including mindfulness and test anxiety throughout the academic year. Individual appointments can be made by emailing wellness.services@keyano.ca.
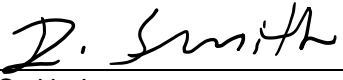
Library Services: provides students with research, information, and education technology supports as they engage in their studies. Library staff are available to help you online and in person throughout the semester. Librarians offer individual and small group appointments booked using the online Book A Librarian calendar. The Library also provides research and subject guides to help you with your studies. To view a subject or course-specific guide, check out the complete list of online Subject Guides. To start your research and access citation guides (APA, MLA, Chicago, or IEEE), visit the Research Help page. The Library's collections (including print and online materials) are searchable using OneSearch. The Library offers a Loanable Technology collection to support students accessing and using technology. For an up-to-date list of technology available for borrowing, visit the Library's Loanable Technology webpage. For a detailed list of library resources and services, go to www.keyano.ca/library. For all inquiries, please email askthelibrary@keyano.ca or chat with us online.

Academic Success Centre: The Academic Success Centre at Keyano College (CC-119) provides **free** academic support services to registered students, such as tutoring, writing support, facilitated study groups, workshops, and study space. Academic Content Specialists are available in Mathematics, Science, Trades, Power Engineering, Upgrading/College Prep, Human Services, English, Humanities, and more. Students are encouraged to visit the Academic Success Centre to discuss study strategies and academic concerns. For additional information, please email Academic.Success@keyano.ca.

Academic Success Coach: The Academic Success Coach is located in the Academic Success Centre and works with students to develop academic success plans, time management skills, study strategies, and homework plans. For additional information, please email Academic.Success@keyano.ca.

Authorization

This course outline has been reviewed and approved by the Program Chair.

D. Smith

David Smith, Instructor

[First Name, Last Name], Chair   Date Authorized

[First Name, Last Name], Dean   Date Authorized

Signed copies to be delivered to:
Instructor
Registrar's Office