



Course Outline

UNIVERSITY STUDIES

**BIOL 208A
Principles of Ecology
Fall, 2013**

**3 CREDITS
3 HOURS LECTURE AND 3 HOURS LABORATORY PER WEEK**

INSTRUCTOR: Dr. David Smith

INSTRUCTOR: David Smith
PHONE NUMBER: (780) 791-4997
E-MAIL: david.smith@keyano.ca
OFFICE NUMBER: S209B

OFFICE HOURS:

Monday	12:00 – 12:50 PM
Tuesday	12:00 – 12:50 PM
Wednesday	12:00 – 12:50 PM
Thursday	12:00 – 12:50 PM
Friday	11:00 – 11:50 AM

HOURS OF INSTRUCTION:

Monday	1:00 – 1:50 PM	Room S218
Wednesday	9:00 – 11:50 AM (Lab)	Room 234
Friday	1:00 – 2:50 PM	Room 215

COURSE DESCRIPTION:

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.

PRE-REQUISITE(S):

BIOL 108 – An Introduction to Biodiversity

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 the levels of organisms, populations and communities
- identify the major selective forces, both living and nonliving, 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

ECO CANADA ENVIRONMENTAL COMPETENCY OUTCOMES:

The student will gain the:

- Ability to conduct environmental impact assessments. (#1)
- Ability to conduct environmental site assessments. (#2)
- Ability to identifying and mitigating climate change impacts. (#7)
- Ability to develop environmental sampling, testing, and monitoring programs. (#11)
- Ability to collect samples and data for environmental purposes. (#12)
- Ability to conduct studies related to ecosystem and habitat preservation and/or management of natural resources. (#24)
- Ability to develop and implement plans, programs and practices for ecosystem and habitat preservation and/or management of natural resources. (#25)
- Ability to monitor/evaluate effectiveness of programs and practices related to ecosystem and habitat preservation and/or management of natural resources. (#26)
- Ability to design/develop environmental research and development proposals, programs and projects (#30)

ECO CANADA TRANSFERABLE COMPETENCY OUTCOMES:

The student will develop and apply skills in the following transferable competencies:

- Professional ethics & work style (#1)
- Learning & creativity (#2)
- Communicating effectively (#3)
- Collaboration (#4)
- Critical thinking & judgment (#5)
- Planning and organizing work and projects (#6)

REQUIRED RESOURCES:

Ecology: Concepts and Applications; Molles, M.C. and J.C. Cahill. McGraw Hill Reyerseon, Toronto, 2008 (Canadian edition).

Ecology Laboratory Manual; Vodopich, D.S. McGraw Hill, Toronto, 2010

TOPICS TO BE COVERED:**Please Note:**

This course outline may be modified to facilitate unforeseen time constraints. Date and time allotted to each topic is subject to change. Lecture topics and corresponding labs for each week are noted.

Week of: Fall 2013 semester, Lecture and Laboratory Topics

September 2	Introduction – no lab
September 9	Sampling methods – Field Lab, Lab 10 (Sampling a plant community)
September 16	Population ecology – Chapter 10, 11, Field Lab (Competition for light with spruce and aspen forests)
September 23	Community ecology – Chapter 12, Lab 7 (Terrestrial plant community assessment)
September 30	Ecosystems – Chapter 16, 17, 18, Field Lab (Lab 9, Microcommunities)
October 7	Case study: terrestrial boreal and subarctic ecosystems – Lab 9, Microcommunities (continued)
October 14	Anthropogenic effects – Chapter 23, Field Lab (Lab 3, Soil analysis)
October 21	Temperature and water relations – Chapter 5, 6, 15, (Lab 3, soil analysis continued)
October 28	Herbivory and mutualism – Chapter 14, Chapter 22, Field Lab (Species diversity within a black spruce bog)
November 4	Productivity and Succession – Chapters 18 and 19, Lab 12 (Species Diversity)
November 11	Biodiversity and conservation – Chapter 23, Labs 1 and 2 (Nature of data and process of science)
November 18	Aquatic ecosystems – Chapter 21, Lab 6 (Age distribution and survivorship)
November 25	Allocation and life history patterns – Chapter 7, 9, Lab 5 (Population growth)
December 2	Mineral cycles – Chapter 20, Lab 15 (Natural selection)
December 9	Term project oral presentation and written report due
December 16	Exam week

MOODLE

Go to <http://ilearn.keyano.ca>

This course is supported through Moodle. Assignments, readings and handouts will be posted on Moodle. Login information will be provided by your instructor. For further instructions please see the Moodle handout.

EVALUATION:

Assignment	Percentage	Due Date (or week of)
Lab Assignments	13 @ 2% each	One week after each lab
Oral and Written Project	14%	December 9, 2013
Midterm	25%	October 14, 2013
Final Examination	35%	December 16, 2013

GRADING SYSTEM:

Letter Grade	Description	Grade Points
A+		4
A	Excellent	4
A-		3.7
B+		3.3
B	Good	3
B-		2.7
C+		2.3
C	Satisfactory	2
C-		1.7
D+		1.3
D	Minimal Pass	1
F	Failure	0

Students intending to transfer to other institutions require a ‘C-’ as a minimum grade. Transfer information on each course is available at the [Alberta Council on Admission and Transfers](#).

Students are expected to conduct field work and to dress appropriately for the conditions.

Students who do not complete all the required work should not expect to pass the course. Students should consult:

http://www.keyano.ca/current_students/examinations/index.htm

IMPORTANT DATES:

	Courses dropped after this date will be designated “W”. (A withdrawal (W) is not reflected in your GPA)
	Mid-term examination (tentative)
	Courses dropped after this date will be designated “WF”. (A withdrawal failure (WF) counts as a 0 in your GPA)
	Last day of classes
	Final Exams

COLLEGE POLICIES**Equality, Equity and Respect**

The Keyano College is committed to providing an environment of equality, equity and respect for all people within the College community. All members of this community are considered partners in developing teaching and learning contexts that are welcoming to all. Faculty, staff, and students are encouraged to use inclusive language to create a classroom atmosphere in which students' experiences and views are treated with equal respect and valued in relation to their gender, ethnic and cultural background, and sexual orientation.

Students should consult:

http://www.keyano.ca/Committees/IRA/Individual_Rights_Policy.asp

Plagiarism and Cheating

Every student expects to be treated and evaluated fairly in a course. Plagiarism and cheating robs everyone of this right.

No student may submit words, ideas or data of another student or person as his or her own in any writing, project, assignment, quiz, electronic presentation, exam etc. Any work used that is not the student's own must be clearly cited as belonging to someone else. There are penalties for using other's work and not citing it. The Student's Rights & Responsibilities document clearly outlines these penalties and the appeal process.

- No learner can obtain information from another student during an exam.
- No learner can bring unauthorized information (paper or electronic) into an exam or quiz.
- No student can submit work done in another course for grading in this course without the written prior approval of the course instructor.
- No student can submit copyright protected or commercially produced materials as part or all of an assignment without proper citation & permission.

Specialized Supports and Duty to Accommodate*Disability Support Services: Learner Assistance Program*

If you have a documented disability or you think that you would benefit from some assistance from a Disabilities Counsellor, please call or visit the Disability Supports Office 780-792-5608 to book an appointment (across from the library). Services and accommodations are intended to assist you in your program of study, while maintaining the academic standards of Keyano College. We can be of assistance to you in disclosing your disability to your instructor, providing accommodations, and supporting your overall success at Keyano College.

Specialized Supports and Duty to Accommodate

Specialized Support and Duty to Accommodate are aligned with the office of Disability Support Services: Learner Assistance Program (LAP) guided by federal and provincial human rights legislation, and defined by a number of Keyano College policies. Keyano College is obligated by legislation to provide disability-related accommodations to students with identified disabilities to the point of undue hardship.



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Date

Reviewed and approved by:

Louis Dingley, Chair

Date

Guy Harmer, Dean

Date