ORIGINAL COURSE IMPLEMENTATION DATE: November 1993
REVISED COURSE IMPLEMENTATION DATE: September 2020
COURSE TO BE REVIEWED (six years after UEC approval)**:** March 2026
Course outline form version: 05/18/2018

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: BIO 210	**Number of Credits:** 4 Course credit policy (105)

Course Full Title: Introduction to Ecology
Course Short Title:
(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)

Faculty: Faculty of Science	**Department (or program if no department):** Biology

Calendar Description:

An introduction to fundamental ecological principles, theories, and methods at the individual, population, community, and ecosystem levels. Interactions between organisms and their abiotic and biotic environments are also examined, as well as the interrelationship between humans and the environment.

Note: Field trips outside of class time may be required.

Prerequisites (or NONE):	One of the following: (BIO 112 and CHEM 114, both with a C+ or better) or (BIO 111, [CHEM 110 or CHEM 113], and [two of AGRI 123, AGRI 124, AGRI 129, AGRI 163, AGRI 203, AGRI 204, or AGRI 220], all with a C+ or better).
Corequisites (if applicable, or NONE):	
Pre/corequisites (if applicable, or NONE):	

Antirequisite Courses *(Cannot be taken for additional credit.)*
Former course code/number:
Cross-listed with:
Dual-listed with:
Equivalent course(s):
(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)

Typical Structure of Instructional Hours

Lecture/seminar hours	45
Tutorials/workshops	
Supervised laboratory hours	45
Experiential (field experience, practicum, internship, etc.)	
Supervised online activities	
Other contact hours:	
Total hours	**90**

Labs to be scheduled independent of lecture hours: ☐ No ☒ Yes

Special Topics *(Double-click on boxes to select.)*
This course is offered with different topics:
☒ No ☐ Yes *(If yes, topic will be recorded when offered.)*

Independent Study
If offered as an Independent Study course, this course may be repeated for further credit: *(If yes, topic will be recorded.)*
☒ No ☐ Yes, repeat(s) ☐ Yes, no limit

Transfer Credit
Transfer credit already exists: *(See **bctransferguide.ca**.)*
☐ No ☒ Yes
Submit outline for (re)articulation:
☐ No ☒ Yes *(If yes, fill in transfer credit form.)*

Grading System
☒ Letter Grades ☐ Credit/No Credit

Maximum enrolment (for information only): 24

Expected Frequency of Course Offerings: Annually
(Every semester, Fall only, annually, etc.)

Department / Program Head or Director: Anthony Stea	**Date approved:**	December 2019
Faculty Council approval	**Date approved:**	January 10, 2020
Dean/Associate VP: Lucy Lee	**Date approved:**	January 10, 2020
Campus-Wide Consultation (CWC)	**Date of posting:**	March 20, 2020
Undergraduate Education Committee (UEC) approval	**Date of meeting:**	April 24, 2020

Learning Outcomes:

Upon successful completion of this course, students will be able to:

a) Develop a detailed understanding of core ecological concepts associated with the abiotic environment, individuals, populations, communities, ecosystems, landscapes, and biomes, species interactions, and the interrelationship between humans and the environment.

b) Engage in observation and identification of the unique characteristics of diverse organisms, including local plant and animal species.

c) Collect experimental data in the lab and in the field by collaborating in a small group.

d) Apply the scientific method in a multiweek ecological study, from making observations, posing questions, and generating hypotheses through to analyzing and interpreting data and presenting research findings.

e) Analyze and interpret ecological data using a range of statistical and graphical techniques (including statistical software).

f) Use field guides (and other equipment), and sampling techniques to collect ecological data and solve problems that may arise while carrying out ecological research in the field.

g) Communicate the research project results and conclusions (with reference to primary scientific literature) by means of an oral presentation to the class and/or by writing a research thesis.

Prior Learning Assessment and Recognition (PLAR)

☒ Yes ☐ No, PLAR cannot be awarded for this course because

Typical Instructional Methods *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Instruction will include a combination of lectures, group work in class, video and oral presentations, laboratory and field exercises, as well as design and execution of a group field investigation.

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials *(If more space is required, download Supplemental Texts and Resource Materials form.)*

	Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1.	Bowman, Hacker, & Cain	Ecology, 4th edition	☒	Sinauer	2017
2.			☐		
3.			☐		
4.			☐		
5.			☐		

Required Additional Supplies and Materials *(Software, hardware, tools, specialized clothing, etc.)*

Typical Evaluation Methods and Weighting

Final exam:	35%	Assignments:	10%	Lab work:	35%		
Midterm exam:	15%	In-class participation:					
Quizzes/tests:	%	In-class oral presentation:	5%			Total:	100%

Details (if necessary):

Typical Course Content and Topics

- Modes of ecological inquiry (i.e. observational studies, field experiments, lab experiments, modelling)
- Abiotic and biotic features of the environment - climate patterns, soils, physical and chemical conditions
- Major terrestrial biomes and aquatic environments
- Evolution and adaptation
- Physiological ecology – responses to changes in temperature, water availability, energy and nutrient availability
- Behavioural ecology
- Life history patterns
- Population distribution, density, and dispersion
- Population growth, regulation, and dynamics
- Dispersal and metapopulations
- Competition
- Predation

- Parasitism
- Mutualism
- Community structure – diversity, dominance, keystone species, ecosystem engineers
- Community dynamics – succession and disturbance
- Food webs, trophic levels, and energy flow
- Nutrient cycling
- Landscape ecology and conservation
- Global climate change
- Anthropogenic impacts on the environment
- Conservation biology

Laboratory content

- Observation and identification of local plant and animal (e.g., leaf litter invertebrate) species.
- Study design and sampling techniques in ecology research – both in laboratory experiments and in the field studies.
- Asking ecological questions, development and testing of hypotheses, and data collection, manipulation, analysis, and interpretation via a multiweek ecological research project examining species distributions, abundances, and diversity, relationships between species and the abiotic environment, species interactions, and/or ecosystem processes.
- Population growth and species interaction (e.g., competition or predation) models.