University of Guelph
College of Biological Science

Integrative Biology

COURSE OUTLINE

Wildlife Conservation and Management, BIOL 4150

Fall 2014

Course description
This course builds on previous courses in population and community ecology to evaluate the long-term dynamics of threatened populations in the context of human intervention. The course will also provide a "hands-on" introduction to computer modeling, with application to contemporary issues in population ecology and resource management. Lectures will be drawn from the following topics: growth and regulation of populations, long-term persistence of ecological communities, harvesting, bio-economics, and habitat modification.

Credit weight: 0.5
Prerequisite(s): BIOL*3110 or BIOL*3130
Department(s): Department of Integrative Biology

Teaching team
Prof. John Fryxell, Science Complex room 2461, Office hours: T/Th 9:00-10:00
Garrett Street, Science Complex room 2452, Eric McNeil, Science Complex room 2460

Course schedule
T/Th 11:30-13:00

Learning Outcomes (goals and rationale)

The conservation and sustained utilization of wildlife are two of the most challenging issues facing contemporary society. This course will build on previous courses in ecology to evaluate the long-term dynamics of threatened populations in the context of human intervention. Computer modelling and demographic statistical analyses are some of the most important tools used by researchers, resource managers, and policy advisors in evaluating alternate long-term scenarios and remedial actions for conservation and management problems. This course also provides a "hands-on" introduction to problem solving using R computer software, with application to contemporary issues in population ecology and resource management. Our objectives are (1) to develop a deeper understanding of the factors influencing conservation at both the population and community levels and (2) to develop quantitative skills that are helpful in evaluating alternative conservation and management policies.

Learning outcomes: By the end of this course, students will understand the conceptual basis and be capable of applying numerical methods to analyze the following topics in wildlife conservation and management: (1) home range and resource/habitat use, (2) population estimation, (3) estimation of population growth rates from time series data, (4) stochastic population models, (5) model evaluation, (6) sustainable harvesting policies, (7) estimation of vital demographic rates, (8) age- and class-structured matrix population models, (9) population viability analysis, (10) food-web interactions and sustainable conservation policies, and (11) sustainable landscape and ecosystem management policies. (12) Students will also be well

acquainted with the effects of global climate change and anthropogenic sources of disturbance on patterns of habitat use and genetic composition of populations and (13) the processes influencing evolutionary responses to these stresses.

Course Resources

Recommended textbook: Wildlife ecology, conservation, and management. Fryxell, Sinclair, and Caughley (2014), Wiley-Blackwell, Oxford, 3rd edition (copies will be available on reserve).

Course Content

	Topics	Readings
1	Conservation in practice (1 lecture)	Chapter 17
2	Home range and habitat use (1 lecture)	Chapter 3
3	Wildlife response to climate change (1 lecture)	Chapter 11
4	Estimation of population abundance (2 lectures)	Chapter 12
5	Stochastic population growth and regulation (3 lectures)	Chapter 5
6	Model evaluation (1 lecture)	Chapter 15
7	Harvesting and bio-economics (2 lectures)	Chapter 18
8	Wildlife control (1 lecture)	Chapter 19
9	Age- and stage-specific population models (2 lectures)	Chapter 13
10	Population viability and extinction risk (2 lectures)	Chapter 16
11	Food-web dynamics (2 lectures)	Chapter 9
12	Evolutionary dynamics and conservation genetics (1 lecture)	Chapter 20
13	Habitat loss and metapopulation dynamics (1 lecture)	Chapter 21
14	Ecosystem conservation and management (1 lecture)	Chapter 22

Methods of Assessment

i. Nature of the examinations: A mix of short answer and short essay questions. See CourseLink for a sample examination.

ii. Assessment:

Assessment				
Form of Assessment	Weight of Assessment	Due Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Midterm exam	25%	Th 2 Oct	Lecture, readings	1-5, 12
Midterm exam	25%	Th 30 Oct	Lectures, readings	6-8
Midterm exam	25%	Th 27 Nov	Lectures, readings	9-13
Assignments	25%	Bi-weekly	Lectures, readings	1-13

Any changes to the evaluation scheme will be considered on a case-by-case basis, subject to approval by the entire class. A 12 page term paper will be assigned in lieu of missed exams on a topic approved by the instructor. A penalty of 5% per business day will be applied in the case of late assignments.

Important Dates

See assessment details above.

Course and University Policies

When You Cannot Meet a Course Requirement
When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact, and be prepared to provide supporting documentation. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Accessibility
The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or email csd@uoguelph.ca or see the website: http://www.csd.uoguelph.ca/csd/

Academic Misconduct
The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisort.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

E-mail Communication
As per university regulations, all students are required to check their <uoguelph.ca> e-mail account regularly: e-mail is the official route of communication between the University and its students.

Drop Date
The last date to drop one-semester courses, without academic penalty, is the 40th class day. To confirm the actual date please see the schedule of dates in the Undergraduate Calendar. For regulations and procedures for Dropping Courses, see the Undergraduate Calendar:
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Copies of out-of-class assignments
Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Recording of Materials
Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Grading

The penalty for late submission of problem sets will 5% per working day.

Campus Resources

The Academic Calendar is the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs:
http://www.uoguelph.ca/registrar/calendars/index.cfm?index

If you are concerned about any aspect of your academic program:

- make an appointment with a program counsellor in your degree program. http://www.bsc.uoguelph.ca/index.shtml or https://www.uoguelph.ca/uaic/programcounsellors

If you are struggling to succeed academically:

- There are numerous academic resources offered by the Learning Commons including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills. You can also set up individualized appointments with a learning specialist. http://www.learningcommons.uoguelph.ca/

If you are struggling with personal or health issues:

- Counselling services offers individualized appointments to help students work through personal struggles that may be impacting their academic performance. https://www.uoguelph.ca/counselling/
- Student Health Services is located on campus and is available to provide medical attention. https://www.uoguelph.ca/studenthealthservices/clinic
- For support related to stress and anxiety, besides Health Services and Counselling Services, Kathy Somers runs training workshops and one-on-one sessions related to stress management and high performance situations. http://www.uoguelph.ca/~ksomers/

If you have a documented disability or think you may have a disability:

- The Centre for Students with Disabilities (CSD) can provide services and support for students with a documented learning or physical disability. They can also provide information about how to be tested for a learning disability. For more information, including how to register with the centre please see: https://www.uoguelph.ca/csd/