BIOL*4150 Wildlife Conservation and Management

Fall 2018
Section(s): C01

Department of Integrative Biology
Credit Weight: 0.50
Version 2.00 - August 31, 2018

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1 Course Details

1.1 Calendar 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.

Pre-Requisite(s): BIOL*3060 or BIOL*3130

1.2 Timetable

Lectures in MacNaughton room 113 on T/Th 11:30-13:00

1.3 Final Exam

Exam time and location is subject to change. Please see WebAdvisor for the latest information.

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2 Instructional Support

2.1 Instructor(s)

John Fryxell
Email: jfryxell@uoguelph.ca
Telephone: +1-519-824-4120 x53630
Office: BIO/CBG 222
Office Hours: T/Th 9-10

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3 Learning Resources

3.1 Recommended Resource(s)

Wildlife Ecology, Conservation, and Management. (Textbook)
Wildlife ecology, conservation, and management. Fryxell, Sinclair, and Caughley (2014), Wiley-Blackwell, Oxford, 3rd edition (copies will be available on reserve).

3.2 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/programcouns

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/

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4 Learning Outcomes

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 wildlife conservation and management at both the population and community levels and (2) to develop quantitative skills that are helpful in evaluating alternative conservation and management policies.

4.1 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) population estimation, (2) estimation of population growth rates from time series data, (3) stochastic population models, (4) model evaluation, (5) age- and class-structured matrix population models, (6) population viability analysis (7) sustainable harvesting and population control policies, (8) home range and habitat analysis, (9) food-web interactions and sustainable landscape and ecosystem management policies. (10) Students will be introduced throughout the course to the effects of climate change, habitat modification, and human disturbance on patterns of habitat use and population dynamics and the processes influencing evolutionary responses to these stresses.

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5 Teaching and Learning Activities

5.1 Course Content

	Topics	Readings
1	Introduction (1 lecture)	
2	Estimation of population abundance (2-3 lectures)	Chapter 12
3	Stochastic population growth and regulation (2-3 lectures)	Chapter 5
4	Model evaluation (2 lectures)	Chapter 15
5	Age- and stage-specific population models (2-3 lectures)	Chapter 13
6	Stochasticity and extinction risk (2-3 lectures)	Chapter 16
7	Home range, habitat use, and habitat loss (2-3 lectures)	Chapter 3
8	Harvesting and bio-economics (3 lectures)	Chapter 18
9	Wildlife control (1 lecture)	Chapter 19
10	Ecosystem conservation and management (2-3 lectures)	Chapters 9 & 22

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6 Assessments

6.1 Assessments

Assessment

Form of Assessment	Weight of Assessment	Due Date of Assessment	Course Content /Activity	Learning Outcome Addressed
Midterm exam	20%	Th 11 Oct	Lecture, readings	1-6,10
Midterm exam	20%	Th 22 Nov	Lectures, readings	6-10
Group project	30%	Th 29 Nov	Lectures, readings	1-10
Assignments	30%	Bi-weekly	Lectures, readings	1-10

6.2 Note

Nature of the examinations: A mix of short answer and short essay questions based on lectures, discussions, and assigned readings. See CourseLink for a sample examination.

Students that are unable to attend one of the mid-term exams scheduled during the semester for any reason will be required to write a 10-12 page term paper (double-spaced, 12 pitch Times Roman font, 1 in margin), not including title page, literature cited, figures, or tables that provides a literature review and personal commentary on any topic covered in lecture, subject to written approval by the course instructor. This make-up term paper is due the last day of lectures. A make-up exam will not be provided under any circumstances, nor will mid-term examination dates or times be changed to accommodate conflicts with those in other courses.

The group project will be based on the efforts of 3-4 team members. Each project will provide a thoroughly-documented conservation and management assessment of a specific population or ecosystem. The final group report should include a title page with names and students numbers of all group members, a 3-5 page synopsis of the general biology and ecological requirements of the species, a 3-5 page synopsis of perceived threats, conservation concerns, or management issues, 3-5 page section describing and providing results of a quantitative assessment, a 3-5 page discussion of thoroughly justified recommendations, table, figures, and literature cited section. The quantitative assessment can take any number of forms, including population viability analysis, simulation modelling of key ecological processes, or an evaluation of harvest or biological control options. The quantitative assessment should be based to the extent possible on existing data for the population, augmented by data for other populations or related species as needed. Format will be double-spaced, 12 pitch Times Roman font, 1in (2.5cm) margins, with proper use of headings and citation style as per the journal Ecology. Team members will be assigned by random draw by the course instructor the third week of October. Assessment will be partially based on self-evaluation by fellow team members (20%) and the final project write-up by the entire team (80%). All material in the write-up must solely reflect the work of the submitting group members. Final project reports will be submitted via a course dropbox and will be evaluated for plagiarism via Turnitin (see below).

5 assignments will be handed out on Thursdays throughout the term. Written answers in hard copy will be due the following Thursday (one week later). Digital submissions of assignments will not be permitted. A penalty of 5% per business day will be applied in the case of late assignments. All assignments must solely reflect the work of the submitting student – group work is not permitted.

Any changes to the evaluation scheme will be considered on a case-by-case basis, subject to majority approval by the entire class.

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7 Department of Integrative Biology Statements

7.1 Academic Advisors

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

- Make an appointment with a program counsellor in your degree program. B.Sc. Academic Advising or Program Counsellors

7.2 Academic Support

If you are struggling to succeed academically:

- Learning Commons: 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.
- Science Commons: Located in the library, the Science Commons provides support for physics, mathematic/statistics, and chemistry. Details on their hours of operations can be found at: Chemistry & Physics Help and Math & Stats Help

7.3 Wellness

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.
- Student Health Services is located on campus and is available to provide medical attention.
- 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.

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8 University Statements

8.1 Email Communication

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

8.2 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. The regulations and procedures for Academic Consideration are detailed in the Undergraduate Calendar.

8.3 Drop Date

Courses that are one semester long must be dropped by the end of the fortieth class day; two-semester courses must be dropped by the last day of the add period in the second semester. The regulations and procedures for Dropping Courses are available in the Undergraduate Calendar.

8.4 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.

8.5 Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day.

More information: www.uoguelph.ca/sas

8.6 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 advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

8.7 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.

8.8 Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.
