BIOL*3130 Conservation Biology

Winter 2020
Section(s): C01

Department of Integrative Biology
Credit Weight: 0.50
Version 1.00 - November 01, 2019

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1 Course Details

1.1 Calendar Description

This course is an introduction to the biological basis for conserving wild, living resources, including freshwater and marine fish, plants and wild life. Topics to be covered include principles of population, community and landscape genetics and ecology relevant to the conservation, restoration and management of endangered species, ecosystems and/or renewable resources, including an introduction to the theory and practice of sustained-yield harvesting.

Pre-Requisites: BIOL*2060

1.2 Timetable

Timetable is subject to change. Please see WebAdvisor for the latest information.

Lecture: Tuesday/Thursday 10:00 - 11:20 AM, Room TBA

Tutorials: Wednesdays and Fridays, 10:30 - 11:20 AM and 11:30 AM - 12:20 PM, Rooms TBA

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 Instructional Support Team

Instructor: Hafiz Maherali
Email: maherali@uoguelph.ca

Telephone: +1-519-824-4120 x52767
Office: SC1 1472
Office Hours: By appointment

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3 Learning Resources

3.1 Recommended Resources

WRITING IN THE BIOLOGICAL SCIENCES (TEXTBOOK) (Textbook)

Hofmann, A.H. 2018. Writing in the Biological Sciences, 3rd edition. Oxford University Press. 368 pp.

This is an excellent and relatively inexpensive writing manual for science students.

Available for purchase at the University Bookstore or Co-op.

A copy of this book is on reserve in the Library.

3.2 Additional Resources

GET ASSISTANCE WITH WRITING AND SEARCHING THE PRIMARY LITERATURE (Other)

https://www.lib.uoguelph.ca/get-assistance
Get Assistance with fulfilling academic requirements at the University of Guelph Learning Commons

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4 Learning Outcomes

Conservation Biology is often described as a 'mission-oriented crisis discipline' (Soulé 1986; Gerber 2010) that was created to help us identify how human activities are causing losses in biodiversity and propose practical solutions to prevent future extinctions. To both assess and prevent biodiversity decline, Conservation Biology relies on knowledge generated by related disciplines, including genetics, evolution, and ecology.

This course will focus on developing the skills necessary to be an effective Conservation Biologist. By the end of this course, you should be able to:

1. Understand how scientific knowledge of genetics, evolution and ecology can be used to develop conservation management strategies for threatened populations, species and communities.

2. Identify and evaluate the evidence required to determine whether populations and communities are in decline or threatened with extinction.

3. Use scientific and quantitative methods to evaluate whether conservation strategies to protect populations, species and communities are effective.

4. Collaborate effectively as part of a team and demonstrate mutual respect and leadership skills while managing tasks and timelines to achieve a common goal.

5. Practice effective written and oral communication skills.

6. Reflect on and communicate the personal and professional attributes you achieved within this course and in the context of your program of study.

References

Soulé, M. E. 1986. Conservation Biology: The Science of Scarcity and Diversity. Sunderland, MA: Sinauer & Associates

Gerber, L. 2010. Conservation Biology. Nature Education Knowledge 3(10):14

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5 Teaching and Learning Activities

Learning Methods

Though traditional lectures can be an efficient way of communicating information from instructor to student, actively engaging and talking about the material is the best way to learn. Lectures will feature elements of 'learning by doing', which means that we will practice applying knowledge as it is introduced.

In tutorials, students will also engage in a semester-long project to quantitatively assess the scientific consensus on a conservation related topic of their choice, as well as the implications of this consensus for conservation management practice. This work will be done in small groups as well as individually.

Therefore, regular attendance and participation are essential to achieving the learning outcomes of this course.

Lectures – In lectures, I will spend time making presentations on course topics, but expect to engage in discussions with me and with your peers. Educational research suggests that

concepts are easier to understand if you spend time applying them during class. Expect to spend time using the concepts I present to interpret results and make predictions.

Tutorials – Each week, the graduate teaching assistants will facilitate activities aimed at helping you complete the semester long project. These activities will include developing effective strategies for team work, project idea selection, how to extract data from scientific literature, data analysis and interpretation, and self-reflection and assessment.

Learning Methods

Though traditional lectures can be an efficient way of communicating information from instructor to student, actively engaging and talking about the material is the best way to learn. Lectures will feature elements of 'learning by doing', which means that we will practice applying knowledge as it is introduced.

Students in this course will also complete a semester long project that involves using data from scientific publications to provide a quantitative assessment of the scientific consensus on a conservation related topic of their choice. This work will be done in small groups and be facilitated by Graduate Teaching Assistants in the tutorials.

Therefore, regular attendance and participation in both lecture and tutorial are essential to achieving the learning outcomes of this course.

Lectures – In lectures, I will spend time making presentations on course topics, but expect to engage in discussions with me and with your peers. Educational research suggests that concepts are easier to understand if you spend time applying them during class. Expect to spend time using the concepts I present to interpret results and make predictions.

Tutorials – Each week, the graduate teaching assistants will facilitate activities aimed at helping you complete the semester long project for the course. These activities will include developing effective strategies for team work, project idea selection, how to extract data from scientific literature, data analysis and interpretation, and self-reflection and assessment.

5.1 Lecture

Topics:	**Lecture topics (approximately 2-4 lectures per topic).**

1. Judging the quality and reliability of scientific evidence.

2. Historical perspectives on conservation science.

3. The origin, maintenance, and geographic distribution of biodiversity.

4. Assessments of biodiversity decline.

5. Biodiversity conservation and habitat loss.

6. Biodiversity conservation and climate change.

7. Biodiversity conservation and resource exploitation.

8. Biodiversity conservation and species invasions.

5.2 Seminar

Topics:

Tutorial topics by week:

Week 1 - January 6th - No tutorials

Week 2 - January 13th - Group formation, workshop on team dynamics.

Week 3 - January 20th - Peer discussion of topics and annotated bibliography.

Week 4 - January 27th - Finalizing your research topic.

Week 5 - February 3rd - Workshop on data extraction from scientific papers and data sheet construction.

Week 6 - February 10th - Workshop on self and group assessment of progress.

Week 7 - February 17th - Winter break - no tutorials this week.

Week 8 - February 24th - Introduction to data analysis.

Week 9 - March 2nd - Data analysis work shop.

Week 10 - March 9th - Data analysis work shop.

Week 11 - March 16th - Workshop on oral presentations and providing constructive feedback to your peers.

Week 12 - March 23rd - Oral presentations; peer assessment of presentations.

Week 13 - March 30th - Oral presentations; peer assessment of presentations.

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6 Assessments

6.1 Assessment Details

Midterm exam (15%)
Date: Tue, Feb 11, 10:00 AM - 11:20 AM
The midterm exam will consist of multiple choice and short answer questions.

Final Exam (35%)
The final exam will consist of multiple choice and short answer questions. Date and time to be determined.

Conservation Science Project (50%)

The semester long conservation science project is worth 50% of the final grade, and consists of the following individual and group assignments (specific due dates will be finalized at the beginning of the Winter 2020 semester):

Week 3: Research question and annotated bibliography - individual submission (3%)

Week 4: Group proposal and data collection plan - group submission (5%)

Week 5: Draft datasheet - group submission (2%)

Week 6: Self assessment - individual submission (5%)

Weeks 11-12: Oral presentation and peer evaluation of other presentations - individual submission (10%)

Week 13: Final paper - group submission (20%); Peer assessment of group - individual (5%)

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7 Course Statements

7.1 Policy on Late Submissions

All items are due on the dates shown by the specified time. Late submissions will be accepted, but will be penalized 10% per 24 hour period late, or portion thereof, after the due date/time, including weekends.

7.2 Policy on the use of technology in the classroom

You are welcome to bring a laptop to lectures, but use it in a manner that will not disturb those around you. Please do not use your laptop for anything other than activities related to the course. Turn your cell phones off, or put them on silent, and do not text-message during class.

7.3 Policy on Plagiarism

The University policy on academic integrity, http://www.academicintegrity.uoguelph.ca/ defines plagiarism as "…stealing and lying about it afterwards. It means using others' work and misrepresenting that work as your own without giving the author credit". Field work and some data analysis will be done in groups and we therefore expect that many of you will use the same resources, share ideas and discuss how to interpret results. Doing shared work will help you learn, but you must not engage in plagiarism or any other form of academic misconduct, as described by the University academic integrity policy, when submitting assignments. All written assignments must be the product of your own independent work. If we detect plagiarism or any other violation of the academic integrity policy, we are obliged to report it to the College of Biological Science Academic Dean, who will take disciplinary action under university guidelines.

Plagiarism detection software

In this course, we will use **Turnitin**, integrated with the CourseLink Dropbox tool, to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to maintain academic integrity at the University of Guelph.

All submitted assignments will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism or other forms of academic misconduct. Use of the Turnitin.com service is subject to the Usage Policy posted on the Turnitin.com site.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing academic misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment. IMPORTANT NOTE: Turnitin will sometimes erroneously identify your citation list as being plagiarized because it matches with other papers. Note that we do not consider reference list matches as evidence of plagiarism. Instead, when reviewing your assignments in Turnitin, focus on the text of your papers, rather than the list of references.

7.4 Course Evaluation information (from the CCS website)

CCS now provides the U of G Online Course Evaluation System in a secure, online environment. End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions form part of the information used by Promotion and Tenure Committees in evaluating the faculty member's contributions in the area of teaching. Course evaluations are now conducted through this web site: https://courseeval.uoguelph.ca/CEVAL_LOGIN.php. Login with your central email account login ID and password.

Occasionally course evaluations are conducted in class. Instructors do NOT receive evaluations until the end of exam period. Furthermore, evaluations are anonymous, unless you specifically indicate you want to acknowledge your comments.

8 Department of Integrative Biology Statements

8.1 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

8.2 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. http://www.learningcommons.uoguelph.ca/
- 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: http://www.lib.uoguelph.ca/get-assistance/studying/chemistry-physics-help and http://www.lib.uoguelph.ca/get-assistance/studying/math-stats-help

8.3 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. 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.selfregulationskills.ca/

9 University Statements

9.1 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.

9.2 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 grounds for Academic Consideration are detailed in the Undergraduate and Graduate Calendars.

Undergraduate Calendar - Academic Consideration and Appeals

https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml

Graduate Calendar - Grounds for Academic Consideration
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

Associate Diploma Calendar - Academic Consideration, Appeals and Petitions
https://www.uoguelph.ca/registrar/calendars/diploma/current/index.shtml

9.3 Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all students (undergraduate, graduate and diploma) except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in their respective Academic Calendars.

Undergraduate Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-drop.shtml

Graduate Calendar - Registration Changes
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-reg-regchg.shtml

Associate Diploma Calendar - Dropping Courses
https://www.uoguelph.ca/registrar/calendars/diploma/current/c08/c08-drop.shtml

9.4 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.

9.5 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.

For Guelph students, information can be found on the SAS website

https://www.uoguelph.ca/sas

For Ridgetown students, information can be found on the Ridgetown SAS website
https://www.ridgetownc.com/services/accessibilityservices.cfm

9.6 Academic Integrity

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 encourages academic integrity. 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.

Undergraduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

Graduate Calendar - Academic Misconduct
https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.shtml

9.7 Recording of Materials

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

9.8 Resources

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

Academic Calendars
https://www.uoguelph.ca/academics/calendars