

Course Outline: BIOL*6020 Advances in Evolutionary Biology
Winter 2019 topic: *Conservation Population and Quantitative Genetics and Applied Genomics
for Evolutionary Ecologists*
Department of Integrative Biology
College of Biological Sciences
University of Guelph

*****This is a draft course outline. The final version will be posted on the
Courselink site during the first week of classes in Winter 2019 *****

Course Professor:

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Course outline

Our goal is to learn about the essentials of conservation genetics and how to apply it to your favorite animal or plant population. This will involve learning the basics about DNA markers, application of genomics to Conservation Biology, as well as the basics of ecological quantitative genetics.

Learning outcomes

1. To acquire a working knowledge of empirical population genetics, modern empirical quantitative genetics, and applied genomics as currently being used to solve problems in conservation biology.
2. To briefly review models of the relative importance of demography and genetics on the viability of small populations.

Readings:

Conservation Biology: Evolution in Action. Edited by Scott Carroll and C. Fox. 2008. Oxford University Press. ISBN13: 9780195306798

Hendry, A.P., 2016. Eco-evolutionary dynamics. Princeton University Press. ISBN-139780691145433

The rest of our weekly readings will be reviews and original papers from the recent literature.

Assignments and grading

Regular attendance and class participation are essential. Students are expected to come to class having read and thought about the material and prepared to engage in oral discussion. To help you do this please bring to each class two written questions about the week's readings to contribute to discussion.

In addition, each student will complete the following which will contribute the shown percentage to their final grade.

- 1) Regular oral participation in weekly discussions; two relevant written questions or comments on each week's readings submitted to your Dropbox on Courselink at least one hour before each class in which you are not leading the Discussion (20% of final grade).
- 2) A double-spaced 200-250 word **summary** of the major points made in the weekly Chapter or paper reading (5% each for a total of 20% of final grade). These should be submitted to your Dropbox on Courselink site at least one hour before each class. Please do the summaries for **four** different weeks when you are NOT doing the oral presentation
- 3) Each week a small group of students will be responsible for giving a brief oral presentation with 4-8 Power Point slides and then leading in-class discussion of the reading. This includes slowly explaining the tricky parts to the other students. To sign-up for a particular week just click on Groups on our Courselink site (25% of final grade). Each student will help present twice during the semester.
- 4) Final essay (8 to 10 pages double-spaced excluding references, figures and tables with 2.5 cm margins). **Topic:** Apply what you have learned in this class to a plant or animal species that has been listed as endangered by [COSEWIC](#) and make recommendations to the Committee. Your essay should first review the major conservation genetics studies that have already been done on your species. It should then specify what types of demographic and genetic data should be collected on your species in the future. Finally, you should conclude with your recommendations for future management of your species. Please use the Instructions for Authors for the referred scientific journal "Conservation Genetics" as a guide for formatting the in-text citations and the List of References for your essay. Please see:
<https://link.springer.com/content/pdf/10.1023%2FA%3A1017442922181.pdf>

The final electronic pdf version of your essay must be posted in the Discussion forum "Conservation genetics of Canadian Wild Populations in Canada" on our Courselink site for your classmates to read and the final electronic WORD version of your essay simultaneously to the course Dropbox by 5:30 PM on Friday, April 5, 2019 which is the last day of classes (35% of final grade).

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 graduate calendar for information on regulations and procedures for Academic Consideration:

<https://www.uoguelph.ca/registrar/calendars/graduate/current/index.shtml>

Assignments that are submitted after the deadlines indicated on the assignment **will not be accepted** and the distribution of course marks **will not be altered** for any student unless Academic Consideration for illness or other compassionate grounds has been approved by the course instructor.

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 Student Accessibility Services (SAS) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or Email:

accessibility@uoguelph.ca or see the website: <https://wellness.uoguelph.ca/accessibility/>

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 Graduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/index.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 Graduate Calendar:

<https://www.uoguelph.ca/registrar/calendars/graduate/current/index.shtml>

Copies of out-of-class assignments

Keep electronic back-up copies of all 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 oral presentations—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

Grading will follow the criteria outlined by the Graduate Calendar and as follows.

Percentage Grade	Letter Grade	Description
90-100	A+	Outstanding. The student demonstrated a mastery of the course material at a level of performance exceeding that of most scholarship students and warranting consideration for a graduation award.
80-89	A- to A	Very Good to Excellent. The student demonstrated a very good understanding of the material at a level of performance warranting scholarship consideration.
70-79	B	Acceptable to Good. The student demonstrated an adequate to good understanding of the course material at a level of performance sufficient to complete the program of study.
65-69	C	Minimally Acceptable. The student demonstrated an understanding of the material sufficient to pass the course but at a level of performance lower than expected from

		continuing graduate students.
0-64	F	An inadequate performance.

<https://www.uoguelph.ca/registrar/calendars/graduate/current/genreg/genreg-as-gradeint.shtml>

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.

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.
- 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/>

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

- Student Accessibility Services (SAS) 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://wellness.uoguelph.ca/accessibility/> or Email: accessibility@uoguelph.ca