

BIO3440a: Ecology of Populations – Syllabus 2023

1. Course Information

Lecture hours and location

Lab hours

Mandatory Lab Days

There are four data collection days that require **MANDATORY** attendance. If you do not attend, you will not be collecting the data necessary to complete the lab. These days include:

List of Prerequisites, Biology 2483A/B, One of Biology 2244A/B, Psychology 2810, Statistical Sciences 2244A/B, or the former Statistical Sciences 2122A/B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor & TA Information

Students must use their Western (@uwo.ca) email addresses when contacting their Instructor and TAs.

3. Course Syllabus, Schedule, Delivery Mode

Goals of the Course

Population ecology is the scientific study of the mechanisms that influence the abundance of organisms. In an era where populations are declining at precipitous rates leading to an “extinction crisis”, the role of population ecology has never been so critical and the need for population ecologists so urgent. This course uses concrete examples to explain the central tenets of population ecology with a strong emphasis on its practical application. You will learn about what population ecologists do and will learn many of the techniques needed in order to **DO** population ecology.

More specifically, our goals are:

1. *To teach you the basic principles of population ecology.* These include theoretical principles as well as field techniques. We will discuss how to measure a population’s abundance, describe a

population's dynamics, and investigate the mechanisms that cause population dynamics.

2. *To improve your data collection and analysis skills.* During the course of completing the experimental labs you will collect and analyse data. You will learn and be expected to apply several methods of analyses. A previous course in statistics is strongly recommended.

3. *To improve your critical thinking skills.* This will be achieved by developing hypotheses and making comparisons between experimental methods.

Learning outcomes

By the end of this course, you should be able to:

1. Recognize the importance of population ecology as a discipline and how it is used
2. Learn and apply your knowledge of population abundance and dynamics to data sets
3. Implement sampling regimes that will ensure experimental rigour
4. Collect, manage, and analyze your own data using spreadsheets
5. Interpret results in written form
6. Recognize factors that limit populations and the importance of experimental manipulations in identifying those factors

Topics and Tentative Schedule

Key sessional dates for the fall term

Classes begin: September 7, 2023

Fall Reading Week: November 1, 2023

Classes end: December 8, 2023

Exam period: December 10 – 22, 2023

Contingency plans in-person class

Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

Readings

Readings are Required. You must purchase the Coursepack from the Bookstore. You will not be able to do the labs without them, and they will help you better understand the lecture material. It is to your benefit to do the readings in advance of the associated lecture/lab. In many lectures, I provide information from the primary literature which I cite on the lecture slides/notes. Please use these to further help you understand course content. They would be considered Supplemental rather than Required. Readings may be added as we move along in the course. The information will be posted on the Readings tab where I will indicate whether the new material is required or supplemental. Please refer back to this tab often to keep updated. It is your responsibility to do so. Please see the Readings tab on the course webpage for further details.

Lecture, Lab and other materials:

All course material will be posted to OWL: <http://owl.uwo.ca>.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Use of Lecture, Lab and other materials

All materials that are posted for and/or presented to you are for your individual use only. DO NOT re-post, share, or sell any of this content with any other person(s), including crowd sharing sources. To do so is a breach of intellectual property. Audio and/or visual recording is not allowed (unless permission is given by the instructor, following Section 6).

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Test x 1	in class, 50 min, mixed format, on L0,L1,L2	15%
Labs x 4	each worth 12.5%, on L1, L2, L3, L4&5	50%
Final exam x 1	cumulative, mixed format, to be scheduled by the Registrar's Office	35%

Important course-specific conditions that are required – please read:

- all labs must be completed to ensure that students demonstrate sufficient mastery of those technical skills to progress
- completion of labs includes MANDATORY attendance on data collection days
- lab assignments are due no later than 10 min into the beginning of lab on their given due dates
- late assignment submissions receive a 10 % deduction per day (weekends and holidays are considered days). Submissions will only be accepted if submitted within 7 days (as above) of the due date. Submissions after this date will receive 0 %.
- plagiarism will not be tolerated and carries a penalty of 0% for any assignment.
- a make-up for the in class test is not currently planned. If it is missed and formal accommodation granted, the percent value will be added to the final exam. Otherwise, a mark of 0 % will be given.
- the final exam must be completed. If it is missed and formal accommodation granted, a make up exam will be arranged.
- queries on marked materials will be accepted for up to 3 weeks once the grade is released. No further consideration will be given beyond this timeline.

- it is the student's responsibility to ensure that all graded materials are submitted properly and to the correct individuals.
- all materials posted for and/or presented to you are for your individual use only. DO NOT re-post, share, or sell any of this content with any other person(s), including crowd sharing sources. To do so is a breach of intellectual property. Audio and/or visual recording is not allowed (unless permission is given by the instructor, following Section 6.).

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

Assessments worth 10% or more of the overall course grade:

By policy, academic considerations for work totalling 10% or more of the final course grade can be granted only by the student's Faculty of Registration (typically by their academic counsellors). In such cases, students should be directed as follows.

For work totalling 10% or more of the final course grade, you must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration.pdf.

The Student Medical Certificate is available at

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf.

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.

6. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf.

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

A calculator that is non-programmable is permitted for the test and exam. The calculator must be non-programmable. It will not have access to apps, your phones data, or the internet. Your phone is not an appropriate calculator.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Remote Proctoring Software may be used in this course for test/exam, but only in the event that we must transition to an on-line platform. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More

information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at:

<https://remoteproctoring.uwo.ca>.

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations. If you are an Accessible Education Student and require an accommodation for missing a deadline or test, please discuss this with your case officer and ask them to contact the instructor to provide instructions/recommendations. To protect student confidentiality, students should not contact the instructor directly to make such requests. If your accommodation includes having a note taker in class, please be sure that this is arranged and that your notes are delivered while lectures are in session (i.e. before classes have ended)

Learning-skills counsellors at the Student Development Centre (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>.

Additional student-run support services are offered by the USC, <https://westernusc.ca/services/>.

9. Land Acknowledgement

We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (e.g. First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.

More information about Indigenous Services (<https://indigenous.uwo.ca/>) and this Land Acknowledgement (<https://communications.uwo.ca/comms/land-acknowledgement/>) are available.