

Biology 3467B Evolution and Reproduction Course Outline

1. Course Information

Course Information

This course explores the evolutionary origins and consequences of sexual reproduction. We'll examine the many theories explaining why sex originated and was subsequently maintained despite its many costly factors. We'll also look at the evolutionary conditions that have allowed animals to form into different sexes, as well as the distinct contributions to reproduction each of those sexes make. The final component to the course will be dedicated to giving a diverse sampling of the unique, innovative, and sometimes bizarre, mating strategies existing in nature. We will also discuss how those strategies have evolved to emit and evaluate 'sexiness', and how those strategies can either interact competitively or co-operatively with one another.

There will be no textbook for this course. Published reviews and original research articles will serve as course material, which will be posted to OWL for downloading and reading. Please consult on a regular basis, as assessments may include this content.

List of Prerequisites

A minimum of 60% in Biology 2581

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 Information

Instructors	Email	Office	Phone	Office Hours
Joshua Isaacson	jisaacso@uwo.ca	BGS 2082	X85597	By Appointment
Omar El-Deeb	oeldeeb@uwo.ca	BGS 2082	X85597	By Appointment
Anne Simon (Course Coordinator/Administrator)	asimon28@uwo.ca			

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Emails are checked from 9:30 am to 4:30 pm, weekdays only. Answered within 2 business days, with the limitations below:

- Questions about course material should be posted on the forum or brought up in tutorial sessions so that other students can benefit from the answer.

- We will not respond to questions that can be answered in the outline. Being able to find information yourself is an important soft-skill and an employability outcome.
- Requests for accommodation should be handled through the Academic Counseling Office

If you wish to meet for office hours with the instructor or TA, contact us by email and we will set up a Zoom meeting.

3. Course Syllabus, Schedule, Delivery Mode

Sample topics include:

Reproductive isolation between species	Sexual selection - theories
Benefits and consequences of sex; why sex evolved	Cryptic female choice
Male-female co-evolution and antagonism	Egg-sperm interactions
Reproductive organ interactions	Mating strategies
Benefits and consequences of anisogamy	Types of reproduction
How social biases have historically affected the study of reproduction	

Lectures: Tues., Wed. → 10:30-11:30AM

Tutorial: Tues. 11:30AM-12:30PM

Classes begin: January 18th, 2021

Reading Week: February 19–27, 2022

Classes end: April 5, 2022

Learning Outcomes

- Students will develop a comprehensive understanding of the causes and consequences of sexual selection from an evolutionary perspective.
- Students will be able to identify sexually selected traits and evaluate the potential selective pressures underlying their evolution.
- In tutorial, students will be able to research, synthesize, and create an engaging presentation that has both the necessary breadth and depth to cover a reproduction-related topic from a primary research article.
- Students will be able to research, devise, and write an engaging written essay that has both the necessary breadth and depth to explain a gene's significance in the evolution of reproductive functions.
- Students will be able to distill key concepts from assigned readings and lectures, and communicate this information via their answers on in-class quizzes.

Contingency plan for an in-person class pivoting to 100% online learning

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as

determined by the course instructor.

4. Course Materials

There is no required textbook for the course. Most lectures will be supplemented by readings from the primary literature. PDFs of these will be posted on OWL and updated weekly. Students should check OWL (<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. Students are responsible for checking OWL on a regular basis.

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

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.

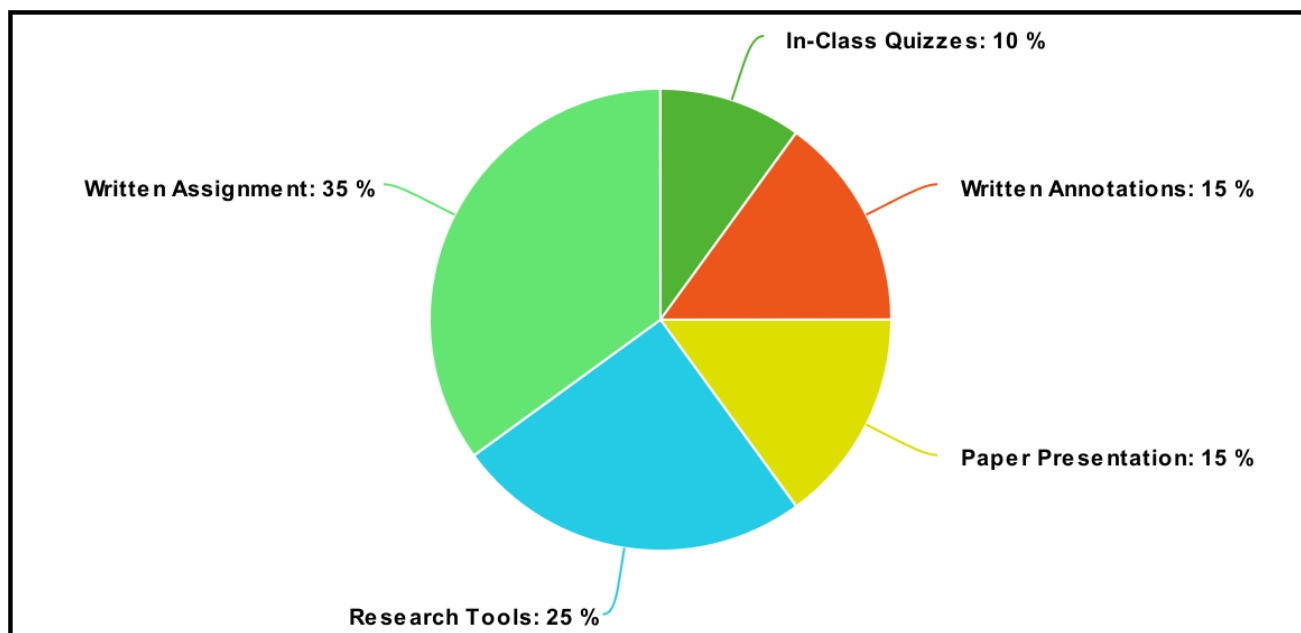
Technical Requirements

Stable internet connection and a working microphone/webcam.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Mark Breakdown



1. **In-class quizzes (10%):** Your attendance and participation in Biology 3467 will be recorded through your address of two to three questions during lecture. Quizzes will take place on OWL and will generally take 5-7 minutes.

- a. **Of the 22 quizzes offered this term, you need only participate in 16.** This buffer is meant to provide flexibility to students in case of illness or other important matters.
2. Annotations:
 - a. **Presentations (15%):** Students will be expected to deliver a 20-minute lecture discussing the methods and results of an assigned primary research article. Articles will be assigned during the first tutorial session. You must include background information that establishes the scientific rationale for the given study. You will present as part of a group of three or four and will provide a five-minute question period for other students to ask about the topic (25-minute presentation total). Two groups will present per week. More information can be found in the "Annotating Research Articles on Reproduction and Evolution" document on OWL.
 - b. **Written annotations:** All students are expected to submit a written annotation on the primary research articles that groups will present on that week. Of the two articles being presented that week, students can choose which article they wish to submit an annotation for (1 annotation/week). Groups who are presenting that week do NOT need to write an annotation. Annotations will be due at 11:55PM on Monday.
 - i. **NOTE:** One week before the presentation date, **you must submit an annotation of your assigned article.** This will help ensure that all group members have read the article before working on the presentation. That means **two annotations will be due the week before you present, but you do not need to write an annotation the week you present.**
3. **Research Tools Assignment (25%):** Students will discuss one research tool used to study reproduction and evolution. Students will also design two novel experiments utilizing this tool in the study of reproduction and evolution. Further details will be present in the document "Research Tools Assignment" found on OWL. This assignment will be due March 7th at 11:55PM.
4. **Written Assignment (35%):** This final research paper will be the culmination of what you learn in this course. Rather than focusing on academic writing, this exercise will evaluate your ability to communicate scientific concepts to a general audience, with an emphasis on describing the influences of genetics on evolution and reproduction. The due date will be during the final exam period as assigned by the registrar.

Important assignment information:

- All assignments are due at **11:55 pm EST** unless otherwise specified.
- Late assignments will be subject to a 5% penalty per day unless accommodated. Assignments that are a full week late will be given a score of 0%.
- Written assignments will be submitted to Turnitin (statement in policies below).
- Students will have two submissions to Turnitin.
- Rubrics will be used to evaluate assessments and will be posted with the instructions
- After an assessment is returned, students should wait 48 hours to digest feedback before contacting their evaluator. However, to ensure a timely response, reach out within 7 days
- Annotations (written and presented), the research tools assignment, and the written assignment are **MANDATORY**. Failure to submit any of these assignments (even if late enough to result in a 0) will result in a final grade of 45.

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Accommodated Evaluations

The instructional team will be flexible with assignment deadlines to accommodate students wherever possible. Late submissions are accepted and penalties waived with proof of accommodation. Academic accommodation can be received through the steps outlined in the following section.

6. Student Absences

Academic Consideration for Student Absences

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes (**NOT through their course instructors**):

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
 - an absence must be no more than 48 hours
 - the assessments must be worth no more than 30% of the student's final grade
 - no more than two SRAs may be submitted during the Fall/Winter term
- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered, unless otherwise instructed in the course outline

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

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

and for the Student Medical Certificate (SMC), see:

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

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>

7. Land acknowledgment

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.

8. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD), 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](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf)

COVID-19 Precautions

During the in-person components of this course, all students are expected to wear a medical grade mask (not cloth) and maintain as much distance between other students as possible. Students who behave inappropriately or unsafely (e.g. removing their mask or removing the mask of another student, attending class while visibly ill) will be forced to leave the classroom and the “in-class quiz” evaluation component for that day will be considered a 0. More severe penalties may be imposed on repeat offenders.

9. 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 his/her official university address is attended to in a timely manner.

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

Turnitin ***aids*** in identifying plagiarism. 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>).

Professionalism & Privacy:

Western students are expected to follow the Student Code of Conduct. Additionally, the following expectations and professional conduct apply to this course:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- All recorded sessions will remain within the course site or unlisted if streamed

10. 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/>

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 (519) 661-2147 if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

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

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