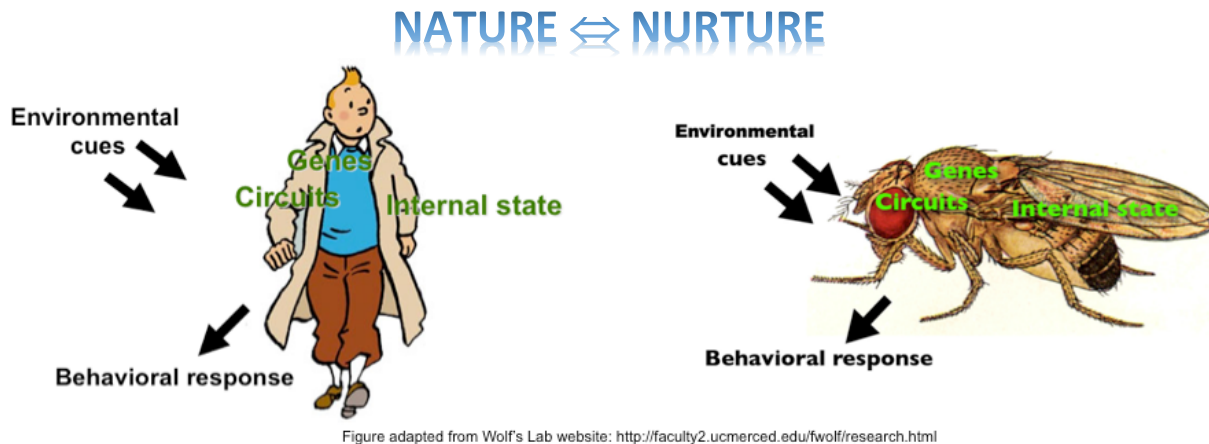


Biology 3598A – Behavioural genetics – Fall 2022

Course Outline



Welcome to Bio3598! My goal is to help you learn and be successful!

Please, read and keep this course outline handy, because it is an official document that contains important course information.

1. Course Information

Course Information

Lectures:	M-W → 9:30-10:20	Room:	WSC-240
Tutorials:	Section 003 F 9:30-11:30	Room:	UCC-59
	Section 002 F 2:30-4:30		PAB 36

2 lecture hours, 2 tutorial hours, 0.5 course

Classes begin: September 8, 2022; → NO TUTORIAL ON THE 9th

Reading Week: October 31- November 6, 2022

Classes end: December 8, 2022

List of Prerequisites: Biology 2581 – Genetics

Unless you have either the prerequisites 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. Instructors Information

Instructors	Email	Office	Phone	Office Hours
Dr. Anne F Simon (Course Coordinator)	asimon28@uwo.ca	BGS 3022	X80084	W 10:30 & by appointment
Abigail Bechar (Teaching Assistant)	abechar3@uwo.ca			

Students must use their Western (@uwo.ca) email addresses and include Bio3598 in the subject line when contacting their instructors. Messages from a non-Western account or those that do not include Bio3598 may be blocked by the university's anti-spam system.

Email Policies: emails are checked 9:30 am to 4:30 pm most days, except weekends and holidays. Answered within 24 hrs, with the limitations below:

To maximize efficiency and to allow your instructor and TA to respond to legitimate concerns as quickly as possible, emails of the following nature will *not* be responded to:

- Questions about course material or on how to prepare for quizzes, exams, or annotation. Such questions should be taken to the tutorial or office hours, or posted on the OWL forum.
- Questions that can be answered based on the information found in this course outline. Being able to find information yourself is an important soft-skill and an employability outcome (such as requests for extra assignments, make-up exams, etc....)
- Please do not hesitate to contact the TA or the instructor if you have any constructive comments or feedback on any aspect of Bio3598. We are always trying to improve the course!

3. Course Syllabus, Schedule, Delivery Mode

The roles of genes and genetic variation in the evolution and expression of animal behaviour are examined. Major themes include the population genetics and quantitative genetics of behaviour, the molecular biology of gene discovery, and the evolution of behavioural traits, including social traits, as studied through vertebrate and invertebrate model systems.

EXPECTED WORKLOAD

(approximate number of hours per week spent by students in):

Lectures	Tutorials annotation	Studying lectures = readings, quiz + exam preparation	Group work oral presentation	Total per week (minimum)
Per average week	2	4	1 (over 13 weeks)	8.5

LEARNING EXPECTATIONS

Course Objectives	Specific Learning Outcomes Students will:	Assessment Method
Provide breadth of knowledge of basic principles and concepts	Master a wide range of basic concepts in behavioural genetics	Tutorial annotations and quizzes
Provide depth within specialized areas	Acquire in depth understanding and advanced knowledge of a range of specialized areas in behavioural genetics and obtain detailed understanding of: <ul style="list-style-type: none">the methods used to determine the extent of the role of genetics in behaviourhow behaviour is controlled both by environment and geneticsIncluding notions of neurobiology and epigenetics	Lecture quizzes, mid-term and finals
Provide an understanding of experimental design and methodology	Become familiar with the experimental approaches of selected topics in behavioural genetics	Lecture quizzes, mid-term and finals
Develop approaches for integration of contemporary information	Describe examples of studies demonstrating the relevance of behavioural genetics to understand human disorders	Lecture quizzes, mid-term and finals
Encourage critical thinking and hypothesis building	Determine how specific experimental findings support basic concepts as well as considering alternative interpretations of the findings	In-class exercises, oral presentations, mid-term, final
Provide opportunities to develop communication skills	Develop skills in reading scientific literature Develop oral communication skills Develop research skills through the use of research journals, and internet databases	Tutorial presentations and 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

TEXTBOOK

Strongly recommended - Plomin et al. (2012) Behavioral Genetics, 7th Ed (or prior editions)

ISBN-10: 1-4641-7605-1, ISBN-13: 978-1-4641-7605-0

You can order either a hardcopy or an eBook at the Western bookstore [using this link](#).

Should you buy the book? Yes. Lectures as well as exam questions draw a lot from the text. That said, about half of the course material is imported from elsewhere, so just reading the text is not always enough.

COURSE WEBSITE:

<http://owl.uwo.ca>.

Most lectures will be supplemented by readings from the primary literature. PDFs of these will be posted on OWL and updated weekly. 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.

We use of Personal Response Systems (such as “iClickers” or mentimeter), through your cell phones or electronic devices.

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.

TEACHING METHODS:

1. Text reading

Prior to attending class, from textbooks or the web, as indicated on schedule (see last page).

This course is challenging and fast paced. To be successful, you must attend all lectures and read the assigned material BEFORE and AFTER each lecture. Do not fall behind! If after the lecture and after you study, you do not understand something, please first consult the OWL forum, where your question might have already been addressed, or see the instructor during office hours or by appointment for clarification. To avoid unnecessary meetings with me, however, I recommend you come to every class.

2. Class lectures, participation, discussions, and group work

Slides will be posted prior to lectures on OWL. No make-up for the minute papers, but your in-class engagement and overall behaviour also count toward that grade. Please note that there is a correlation between participation and final grades.

Participation (5%):

2.5 % → Minute papers (relevant to the days’ content – through the Personal Response system)

2.5% → In-class: starts at 100%, assumes participation and respectful behaviour, both in lecture and tutorials

3. Tutorial

The goals of the tutorials will be to understand recent progress in research, through the discussion of primary literature results presented in lecture, and discussion of quizzes and mid-term.

Quizzes (10%):

Every other week, tutorials will start with a 10-15 min-long quiz (for a total of 5 quizzes, on the day the papers are discussed, and there is one large group), in the format of multiple choices and/or short answers – lowest grade will be dropped. Each quiz will cover what has been done in lecture since the prior quiz or exam. **You must do 4/5 quizzes to pass the course.**

Presentation (10%):

Student-led, small group discussions whereby groups of 3-4 will present a real news story sourced from the media relating to the broad topic of behavioural genetics. Further instruction will be given in class regarding the approach and goal of this fun exercise. It will be graded on quality of presentation by all class, and by instructor. Group work efficiency will be assessed by group members grading each other’s contribution. The students will propose 2 questions for the next in-class quiz.

Annotation (10%):

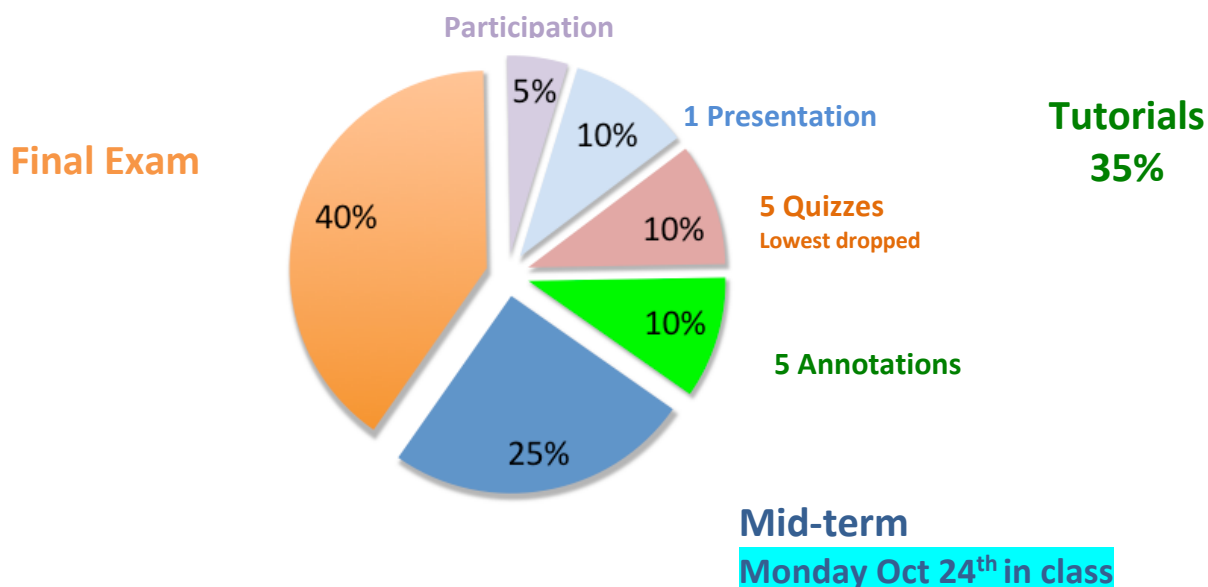
Every OTHER week, each student will upload on Gradescope an annotation of the assigned paper presented in tutorial - detailed description on OWL. The lowest grade will be dropped Annotation sheet on OWL will be discussed in tutorial. If you decide to present an annotation on the wrong paper, you will accept a grade of zero for that annotation. **You must submit 4/5 annotations to pass the course.**

Mid-term (25%), Final (40%)

Mid-term and Final format: **cumulative** multiple choice (25%) and short answers (75%), with **hand-written** cheat-sheet (one sided 11' X 8' page similar to the page on which this syllabus is printed, with the student's name, to be handed along with the exam).

The final exam will be scheduled by the registrar during the regular exam period. It will be cumulative, covering material from the entire year. **You must obtain a passing grade at the final exam to pass the course, to ensure that you demonstrate sufficient mastery of the learning outcomes**

4. Methods of Evaluation



- ☒ All assignments are due at 11:55 pm EST unless otherwise specified
- ☒ Written assignments will be submitted to Turnitin (statement in policies below)
- ☒ Students will have one submission to Turnitin
- ☒ Rubrics will be used to evaluate assessments and will be posted with the instructions
- ☒ After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days

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

6. Student Absences

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

Assignments less than 10% of the overall grade of the course: Absences from Lecture or tutorials

[See policy here.](#)

- **Quizzes:** As your mark is based on the average of all the quizzes with the lowest grade dropped, no make-up quiz will be given. An absence (excused or not) is an automatic 0, and there will be no exceptions. **At least 4 of the 5 quizzes must be attempted to pass the class**, to ensure that students demonstrate sufficient mastery of knowledge to progress.
- **Presentation:** As this is **team effort**, there will be no make-up presentation. **An absence on that day will be a 0. An excused absence allows you to either join another group**, but you will need to catch up with them, and your contribution will be evaluated with the same expectations, **or have the weight reported to the final exam**. If you contribute less than 25% of the group effort (per your peers' anonymous evaluation), you will obtain a 0 on this assignment.
- **Annotation:** Note that annotations can also be uploaded on OWL under the appropriate assignment tool, no later than 11:55pm on the Thursday of the week the annotation is due. If you decide to provide a late annotation, you also decide to accept a reduced grading (70% of the grade if late, but before tutorial starts, 0 after start of the tutorial). **At least 4 of the 5 annotations must be attempted to pass the class.**

Note that this allows you to miss approximately 2 weeks of tutorial due to illness or personal reason without penalty.

Students who decide to leave the tutorial prior to its end, also choose to receive only 60% of the grade of that day's evaluation (quiz or annotation).

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

For work totaling 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://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf.

The Student Medical Certificate is available at

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

- **There will be one make-up mid-term.** It will take place during finals week, at the end of the semester. Alternatively, you can choose to have your mid-term grade reweighted to your final grade.

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.

7. EDI statement

The pronouns used by Dr. Anne F Simon and Abigail Bechard are she/her.

8. 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.

Other wording can be found here: <https://indigenous.uwo.ca/initiatives/land-acknowledgement.html>

9. 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 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)

10. 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.

STATEMENT ON THE USE OF ELECTRONIC DEVICES:

No electronic devices (including but not limited to laptop computers, cell phones, iPods, etc...) will be allowed during examinations.

ACADEMIC OFFENCES.

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

Plagiarism:

- Students must use their own words to prepare their oral presentations, and not copy paste the article. Scholastic offences are taken seriously and students are directed to read the policy at: http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf
Also take a look at "The Fine Print: University Rules And Regulations" <http://www.uwo.ca/biology/undergraduate/counsellingrules.htm>
- Computer-marked, multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating
- 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>).
- Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

GRADE APPEAL

Marks will be posted regularly to the class OWL website.

All appeals must be submitted in writing to the instructor within **two weeks of the mark posting** with a clear explanation of the reason for the appeal. Exams written in pencil may not be appealed. The instructor may re-grade all or part of the exam to look for additional errors which may lower or raise the final mark.

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

PROFESSIONALISM & PRIVACY:

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

- ☒ 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
- ☒ Students will be expected to take an academic integrity pledge before some assessments

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/>

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 (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/>

ANTICIPATED LECTURE TOPICS, AND FIRM DEADLINES

UNITS	Week	Lecture Topic	Book Chapter + Additional material on owl	Covered in...	Tutorial	
Intro + Review Genetics	1 Sept 12-16	Introduction What is Behavioural Genetics? Review Mendelian genetics	1 to 4 +	MID TERM Exam	Separation into groups Choice of presentation 002: meet at 2:30 003: meet at 10:30	
Are genes Involved?	2 Sept 19-23	Evidence from Animal Models and Human Studies: Dogs and the domestication syndrome Twin and adoption studies	5, 6 +		Whole class Quiz 1 How to give a presentation Overview of annotations	
How much are genes involved?	3 Sept 26-30	The interplay between genes and environment	7, 8 +		Annotation 1 due Groups A1 and B1 Sept 30	
Identifying Genes	4 Oct 3-7	Linking Genes to Behaviour			Quiz 2 Paper 1 Discussion	
	5 Oct 10-14	THANKSGIVING QTL - GWAS			9 +	Annotation 2 due Groups A2 and B2 Oct 14
	6 Oct 17-21					Quiz 3 Paper 2 Discussion
		7 Oct 24-28	Mid-term: Monday Oct 24 th Invited speaker: Abigail Bechard “Identifying the neural circuitry affecting <i>D. melanogaster</i> social spacing”			Annotation 3 due Groups A3 and B3 Oct 28
From Genes to behaviour	Oct 31-Nov 4	Reading week				
	8 Nov 7-11	Pathways between genes and behaviour	10 +	FINAL Exam	Quiz 4 Return midterms Paper 3 Discussion	
	9 Nov 14-18				Annotation 4 due Groups A4 and B4 Nov 18	
The social Brain	10 Nov 21-25	Invited speaker : Dr. Kohalmi “Plant behaviour”	20 + 13, 15 +		Quiz 5 Paper 4 Discussion	
	11 Nov 28-Dec 2	Example of evolutionary conserved behaviour: Social behaviour			Annotation 5 due Groups A5 and B5 Dec 2	
	12 Dec 5-7	“Social fly” if times allow			NO TUTORIALS	
	Dec 10-22	Finals weeks				

Lectures will also feature speakers from academia. These visiting speakers will present a short segment of their work and how it relates to Behavioural Genetics. **Their talk will also be subject of exam questions.**

Important note: In all of the topics, the primary focus is on the **understanding of the concepts**. Please try to garner a thorough, in-depth understanding of the material, because that is what allows success in biology. Accordingly **tests and exams will be designed to evaluate your comprehension** of the material and your ability to apply it to new and different scenarios, **and not simply your ability to regurgitate** memorized facts.