

## Biology 3598B - Behavioural Genetics - Syllabus 2012

### Calendar description:

The role of genes and genetic variation in the evolution and expression of animal behaviour. 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. 2 lecture hours, 2 tutorial hours, 0.5 course

**Prerequisite:** Biology 2581 - Genetics

**Lectures:** MW 8:30-9:30 AM  
Biology & Geological Sciences (B&GS) 1056  
Lectures will often be interactive whereby we openly discuss or debate material.

**Tutorials:** F 2:20-4:30, North Campus Building (NCB) 105  
Tutorials are normally computer-based modules that use simulation and calculation to convey key concepts.

**Professor:** Dr Graham J Thompson [gthomp6@uwo.ca](mailto:gthomp6@uwo.ca), phone x86570  
Office: 2068 Biological & Geological Sciences Building,

### Contact:

You may come to me with questions and comments. E-mail is a good option. You may also post questions to WebCT course discussion board (your peers may also be able to answer your question or learn from it). If you would like to meet in person, please e-mail to arrange a mutually convenient time. Please send emails from your UWO account and include 'Biology 3598' in the subject line. It's very helpful and your message is less likely to get overlooked as spam. Also, please avoid writing e-mails that are impolite.

**Teaching assistant:** Alison Camiletti ([acamilet@uwo.ca](mailto:acamilet@uwo.ca))

**Course website:** WebCT.

Lecture outlines, handouts and additional reading will appear on the course site on a need-to basis (usually available 24 h before the lecture). In addition, important announcements will be made on WebCT, and you are responsible for obtaining this information. The discussion boards are also there

to discuss concepts and to help each other out. I will keep tabs on discussions, but will not usually contribute to it myself.

**Course goals:**

To develop an appreciation for the relationship between genetic variation and animal behaviour – a topic of deep philosophical interest and of applied importance. From a practical standpoint students will learn about techniques and strategies used to identify and quantify genetic sources of behavioural variation in human and non-human animals. From a philosophical standpoint, students will develop their understanding of transmission genetics to explain evolved aspects of behaviour.

**Course text:** Required – Plomin et al. (2009) Behavioral Genetics, 5<sup>th</sup>Ed

Should you buy the book? Yes. Lectures draw a lot from the text. Moreover, the computer tutorials are part of the on-line text material and the text provides essential supporting information. That said, about half of the course material is imported from elsewhere, so *just* reading the text is not always enough. Further, if you haven't already done so, then I recommend reading (or re-reading) *The Selfish Gene* by Richard Dawkins. This is an older (1976) but classic book that helps shore-up the 'gene's-eye-view' of evolution. In this course, we often adopt this view to explain the evolution of behavioural traits.

**Electronic devices:** Hand held calculator or equivalent is required for performing scientific calculations in class, in tutorial and in exam.

<b>Evaluation:</b>	Midterm (<1 hr, in class 15 Feb):	30%
	Tutorial quizzes and discussion*:	20%
	Final (2 hrs, Dec exam period):	50%

All exams are typically a mix of short answer, calculations and long answer. Midterms will emphasize the material for that 'term'. The final exam will be cumulative but will emphasize material presented after the midterm. Still, approximately 1/3 of the questions on the final will be based on earlier course content, or require integrating concepts learned throughout the course.

Given this is a senior level course; I will be looking for your ability to EXPLAIN what you know, often at the conceptual level. Your ability to communicate is therefore important. Curt, unsupported, abstract, or

otherwise unexplanatory answers are unlikely to garner full marks, EVEN IF they contain 'key words' captured from lecture or text.

\*Tutorial quizzes are short answer or calculations based on materials covered in the most recent tutorial. Usually, the last 10-15 minutes of the proceeding lecture will be reserved to complete and hand in these small quizzes. Finally, the last three 'tutorials' will take the form of student-led, small group discussion whereby groups of ~5 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.

### **Preparations:**

Students are expected to attend all lectures and participate, when appropriate, in class discussion. Students are expected to understand and complete all computer modules.

### **Academic Offences:**

*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](http://www.uwo.ca/univsec/handbook/appeals/scholastic_discipline_undergrad.pdf)

### **Missed exams:**

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to the Dean's office as soon as possible (within 48 hrs) and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

Without approval from the Office of the Dean of Science, a grade of 0% will be awarded for any missed exam or quiz.

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here:

[https://studentservices.uwo.ca/secure/medical\\_document.pdf](https://studentservices.uwo.ca/secure/medical_document.pdf)