

Behavioral Genetics (PSY390H1F)

Fall Session, 2021

In-person Course past September 23 (see Schedule)

Location: Fridays, 2 – 5 pm in RW143

Course Summary

This course examines the complex relationship between genes and behavior. Course material will integrate concepts from molecular genetics, quantitative genetics, evolutionary biology, neuroscience and psychology. Students will be exposed to the latest technologies, mathematical models and experimental approaches used to examine gene-behavior relationships. The social and economic implications of gene-behavior relationships and genetic engineering technology will also be discussed.

Course Team

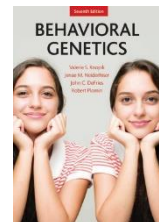
Instructor: Dr. Paul Whissell (paul.whissell@utoronto.ca)

Virtual office hours: Tuesdays, 4 – 5 pm on Zoom (links on page 9)

Teaching Assistant: Arya Rahbarnia (arya.rahbarnia@mail.utoronto.ca)

Recommended Textbook (optional)

Knopik, V.S., Neiderhiser, J.M., DeFries, J. C., Plomin, R. (2016). *Behavioral Genetics* (7th ed). New York, NY: Worth Publishers.



Assessments

This course includes five assessments (three tests and two quizzes). The format and delivery of each assessment is described below.

Tests

There are **two term tests** (each based on four lectures) and a **final assessment** (cumulative, based on all lectures). At present, **these assessments are planned to occur in-person, on-campus and during scheduled class hours**. If the University's position on the current pandemic situation changes, our course could be moved online. If this move occurs, you will be notified and provided with an explanation of the new structure.

Quizzes

There will be two quizzes. In contrast to tests, quizzes will have a three-week submission window and will not have a time limit. You can take as much time as you want to complete the quizzes (hours or days), as long you submit them before their due date.

Marking Scheme and Important Dates

- **25% Test 1 available on October 8** based on Lectures 1 – 4
 - 2 hours allotted
 - Mixture of multiple choice, fill-in-the-blank and written answer questions
- **25% Test 2 available on November 19** based on Lectures 5 – 8
 - 2 hours allotted
 - Mixture of multiple choice, fill-in-the-blank and written answer questions
- **35% Final Assessment between December 10 – 21***** based on Lectures 1 - 10
 - 3 hours allotted; Format T.B.A.
- **10% Methods Quiz available October 29 and due November 26**, based off lectures
- **5% Articles Quiz available November 5 and due December 3**, based off articles

If you have difficulty meeting these deadlines due to exceptional circumstances (e.g. severe illness) please use the self-declaration tool on ACORN and contact me immediately to discuss the situation.

Study Guide

To assist you in preparing for your assessments, a study guide will be provided on Quercus. This guide will identify key highlights of lecture content that are likely to be tested. If you can provide detailed answers to the questions in this guide, it is likely you will score at least a B grade (70+) on all assessments.

Course Schedule

Lecture slides (*.pdf format) will be available by the posting date below. **Lectures 1 + 2 will be given online via Zoom during scheduled class hours. All remaining lectures (3 – 10) and assessments are currently scheduled to occur on-campus, in-person.** If the University's position on the current pandemic situation changes, our course could be moved online. If this move occurs, you will be notified and provided with an explanation of the new structure.

Posting Date	Topic + Due Dates
Sept 10	Lecture 01: Introduction (Zoom Lecture, Links on page 8)
Sept 17	Lecture 02: Genetic Variations (Zoom Lecture, Links on page 8)
Sept 24	Lecture 03: Inheritance
Oct 01	Lecture 04: Heritability
Oct 08	MIDTERM TEST 1 (Lectures 1 – 4)
Oct 15	Lecture 05: Cognitive Ability and Cognitive Disorders
Oct 22	Lecture 06: Personality, Psychiatric Disorders and Social Behavior
Oct 29	Lecture 07: Transgenic Technology, Methods Quiz Released
Nov 5	Lecture 08: Animal Modeling of Behavioral Traits, Articles Quiz Released
Nov 12	Study Week, No Classes
Nov 19	MIDTERM TEST 2 (Lectures 5 – 8)
Nov 26	Lecture 09: Epigenetics, Methods Quiz Due
Dec 3	Lecture 10: Genetic Engineering, Articles Quiz Due
Dec 10 – 21	FINAL ASSESSMENT (Lectures 1 – 10)

Frequently Asked Questions

Q: Is this course right for me?

A: Hopefully yes! But it depends on your interests, aptitudes and academic goals. The course integrates concepts from multiple fields (neuroscience, psychology, biology and genetics). At times it can be challenging and controversial. If you are concerned about your GPA or academic background, please read the questions immediately below.

Q: What is the typical grade distribution in this course?

A: The Psychology program at U of T is exceptional and has a high academic standard. The PSY390 course maintains this standard and typically has a B average (~73%).

Q: Do I need to have a strong background in neuroscience, physiology or biology?

A: No, but it helps. Each lecture will include a review of the relevant information. Lecture 1, for example, will include a review of the structure of DNA.

Q: Behavioral genetics seems to involve a lot of statistical methods. Do I need to know complex math? Will I have to do complex math?

A: No and no. Though statistical methods are essential to the field of behavioral genetics, they are not the focus of this introductory course. Here, you will only have to know the 'general principle' of the method and do simple calculations.

Q: Does this course require a textbook?

A: No. Everything you need to know will be given in class. If you want to explore the content more, an excellent reference textbook is recommended (see page 1).

Q: I looked at the lectures and there are sometimes a lot of slides (~80)!

A: Yes. I prefer to place emphasis on in-class learning rather than textbook readings (which are not required). The net investment in the course will be the same. If you want help narrowing down content, take a look at the course study guide!

Q: What is the course study guide?

A: The study guide identifies the key concepts in lectures that you will have to know. If it's in the guide, it is very likely testable material. About 90% of test questions come directly from the guide. If you know all the material in the guide, it is extremely likely you will get at least a 70% on all assessments. Updated guides are posted weekly.

Q: Is this the course the same every year? Will studying old materials be helpful?

A: No. Genetics is a rapidly evolving field. To ensure that students get current information, lectures and assessments are made fresh every year.

Course Policies

Missed Tests

In the event you miss an assessment due to illness, please use the **illness self-declaration tool on ACORN and notify me immediately**. If you miss a test due to other exceptional circumstances besides illness, please contact me immediately and explain your situation. Each situation will be handled on a case-by-case basis. Please keep any documentation related to the absence on hand as it may be important later.

If you miss a single term test (e.g. test 1), you will be offered a grade reweight wherein the proportion of your grade allocated to the missed test (e.g. 25% for test 1) will be reallocated to the remaining tests (e.g. 37.5% for test 2 and 47.5% for the final assessment).

If you miss BOTH term tests (i.e. test 1 AND test 2), you must attend a make-up test. The date of this test will be announced after test 2. The make-up test will be similar in format to test 2. The weight of this test will be 37.5% and the weight of the final assessment will be 47.5%.

If you miss the final assessment, you must attend a make-up final assessment at a later date. The date of this make-up final assessment will be announced. The make-up assessment will be similar in format to the missed final assessment.

Late Quizzes

Late submissions will not be accepted in this course without adequate justification.

If exceptional circumstances prevent you from submitting an assessment, please notify me immediately and provide me with documentation of your situation. Without documentation, I will not be able to assist.

Religious Accommodation

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of backgrounds, cultural traditions, and spiritual beliefs. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (like a test, or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

Intellectual Property

Class material is designed specifically for University of Toronto students enrolled in the course. Other parties should not have free access to this material. *Under no circumstances should any content be uploaded or shared online (e.g. to an information-sharing website such as OneClass, Course Hero or Youtube) without first obtaining consent from the content creator.* If you would like to share material with someone who is not a student, please speak to the content creator.

Accessibility Needs

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) (www.accessibility.utoronto.ca) at the beginning of the academic year. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your medical situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your condition with any instructor, and your instructors will not reveal that you are registered with AS.

Writing

As a student here at the University of Toronto, you are expected to write well. The university provides its students with a number of resources to help them achieve this. For more information on campus writing centres and writing courses, please visit <http://www.writing.utoronto.ca/>.

Academic Integrity and Plagiarism

You must complete all work in this course independently. You may not collaborate with anyone else (*though you are encouraged to ask me for help*). Your answers must be your own thoughts, expressed in your own words.

All students, faculty and staff are expected to follow the University's guidelines and policies on academic integrity. For students, this means following the standards of academic honesty when writing assignments, collaborating with fellow students, and writing tests and exams. Ensure that the work you submit for grading represents your own honest efforts. Plagiarism—representing someone else's work as your own or submitting work that you have previously submitted for marks in another class or program—is a serious offence that can result in sanctions. Speak to me or your TA for advice on anything that you find unclear. To learn more about how to cite and use source material

appropriately and for other writing support, see the U of T writing support website at www.writing.utoronto.ca/. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see <http://www.artsci.utoronto.ca/osai> and <http://academicintegrity.utoronto.ca/>.

Other Resources

- Student Life Programs and Services (<http://www.studentlife.utoronto.ca/>)
- Academic Success Services (<http://www.studentlife.utoronto.ca/asc>)
- Counselling and Psychological Services (<http://www.studentlife.utoronto.ca/hwc>)

Zoom Links

Online Lectures (Week 1, Week 2)

Paul Whissell is inviting you to a scheduled Zoom meeting.

Topic: PSY390 - Lectures 1 + 2

Time: Sep 10, 2021 02:00 PM Eastern Time (US and Canada)

Every week on Fri, 2 occurrence(s)

Sep 10, 2021 02:00 PM

Sep 17, 2021 02:00 PM

Please download and import the following iCalendar (.ics) files to your calendar system.

Weekly: https://us02web.zoom.us/meeting/tZlkf-usrTsqH9yboY9-EZliisoCj5Y8eA4-/ics?icsToken=98tyKuGupzMoHteVsByPRpwAHYqga-iztmJfgvpEnhDcWm12WCr_P_FNEbgqKYDV

Join Zoom Meeting

<https://us02web.zoom.us/j/86982430058?pwd=RjNHcW9SWmR1RVJqRW10bFIJQ0hYZz09>

Meeting ID: 869 8243 0058

Passcode: 391193

Virtual Office Hours

Paul Whissell is inviting you to a scheduled Zoom meeting.

Topic: PSY390-Virtual Office Hours

Time: Sep 14, 2021 04:00 PM Eastern Time (US and Canada)

Every week on Tue, 13 occurrence(s)

Sep 14, 2021 04:00 PM

Sep 21, 2021 04:00 PM

Sep 28, 2021 04:00 PM

Oct 5, 2021 04:00 PM

Oct 12, 2021 04:00 PM

Oct 19, 2021 04:00 PM

Oct 26, 2021 04:00 PM

Nov 2, 2021 04:00 PM

Nov 16, 2021 04:00 PM

Nov 23, 2021 04:00 PM

Nov 30, 2021 04:00 PM

Dec 7, 2021 04:00 PM

Please download and import the following iCalendar (.ics) files to your calendar system.

Weekly:

https://us02web.zoom.us/meeting/tZcucO2spjMuE9zxWDv5MBXHIOpe47Qb5SRt/ics?icsToken=98tyKuGrrTwuHtydtBCPRpwqA4_CLOjxiFxbj_pHhCjBFXV-QDveH81SN-YoldqF

Join Zoom Meeting

<https://us02web.zoom.us/j/83374488498?pwd=ODdFeEs1TzJvRzNBenpGeXZJejYyQT09>

Meeting ID: 833 7448 8498

Passcode: 918633