

PSYC70: Advanced Research Methods Laboratory

University of Toronto Scarborough
Winter Term, 2022

Introduction



Instructor: Prof. George S. Cree

Email: george.cree@utoronto.ca (note: I do not use or respond to Quercus messages)

Office: SW405

Office Hours: Tuesday 9-10 and Wednesday 1-2 (by appointment)

About Your Instructor

Prof. Cree is a faculty member in the Department of Psychology at UTSC. He joined the department in 2003, and was Chair of the department from 2012-2018. His main area of research interest is neural network modeling of cognition, currently focusing on neural network models of impression formation, person perception, and stereotyping, but he's also worked on word meaning computation, object and face recognition, and semantic memory.

TAs:

- TUT0001 :: TH 12:00 - 13:00 :: Anneesa Singh :: anneesa.singh@mail.utoronto.ca
- TUT0002 :: TH 13:00 - 14:00 :: Mengyang Qiu :: mengyang.qiu@utoronto.ca
- TUT0003 :: TH 14:00 - 15:00 :: Rebecca Wu :: rebeccaj.wu@mail.utoronto.ca
- TUT0004 :: TH 15:00 - 16:00 :: Vicki Dong :: vicki.dong@mail.utoronto.ca
- TUT0005 :: TH 16:00 - 17:00 :: Cindy Tao :: c.tao@mail.utoronto.ca
- TUT0006 :: TH 17:00 - 18:00 :: Nicole Cosentino :: nicole.cosentino@mail.utoronto.ca
- TUT0007 :: TH 18:00 - 19:00 :: Rhonda Boateng :: rhonda.boateng@mail.utoronto.ca
- TUT0008 :: TH 19:00 - 20:00 :: Moaz Shoura :: moaz.shoura@mail.utoronto.ca

Course Description

This course is designed to be the first steps in transitioning you from being a critical *consumer* of psychological research (which you learned in PSYB70) to a *producer* of original research findings. We'll simulate the experience you would have if you joined a prototypical psychology research lab to complete your first research project. Lectures will focus on building the skills you need to complete a research project. Tutorials will focus on developing your critical thinking skills by having you review and critique simulated articles. You'll use what you learn to complete your own research project, from start to finish, in which you will develop your own research question and hypothesis, develop a sampling plan, recruit participants in a simulated virtual world (The Islands), collect data, explore and visualize the data, and write a report describing your findings. By the end of this course you'll be ready to undertake a lab-based course in the sub-area of psychology/neuroscience that most interests you (e.g., PSYC70 series), and in conjunction with skills acquired in PSYB07/C08/C09 (Statistics) and PSYC02 (Communication) be

prepared to conduct an independent study research course (e.g., PSY/NROC90 or PSY/NROD98). In short, you will be on your way to being an independent scientist.

Prerequisites: [(PSYB01H3) or (PSYB04H3) or PSYB70H3] and [PSYB07H3 or STAB22H3 or STAB23H3]

High-Level Learning Outcomes:

After successful completion of this course, you will be able to:

- Complete a simple research project in psychology, from conceptualization to report.
 - o Identify an appropriate psychological question for study.
 - o Operationalize the question into concrete hypotheses and variables.
 - o Develop an appropriate sampling plan.
 - o Collect, record, and organize data, with the goal of replicability.
 - o Identify meaningful patterns in data using data visualization techniques (e.g., graphing in Excel or R) and introductory level statistical techniques (e.g., correlation, t-test, and one-way ANOVA).
 - o Write a report that describes the motivation, methods, results, and conclusions of the study, with the goal of replicability.
- Critically review and evaluate published research.
 - o Identify flaws in the conceptualization of a study.
 - o Identify flaws in the design of a study.
 - o Identify flaws in the implementation of a study.
 - o Identify flaws in the interpretation of results of a study.
 - o Make informed recommendations for improving a study.

Course Content

Textbooks:

Both books listed below are available for free through the UofT Library by clicking on the reference.

Required

Meltzoff, J. & Copper, H. (2018). *Critical thinking about research: Psychology and related fields* (2nd ed.) American Psychological Association.

Optional

Clark-Carter, D. (2019). *Quantitative psychological research: The complete student's companion* (4th ed.). New York: Routledge.

Readings & Assignments

The lessons for each week will comprise a mixture of readings, pre-recorded lecture videos, and assignment questions. You will find a full and up-to-date listing of these materials for each week in the weekly modules available on Quercus. Always check Quercus for the most up-to-date information. If there is an inconsistency between this document and information posted on Quercus, use the information posted on Quercus.

Lecture, Reading, & Tutorial Schedule:

Week	Lecture Topic	Tutorial Date (Thursday)	Tutorial Reading	Tutorial
01 (Jan 10 – Jan 14)	Intro to Course	Jan 13	MC18 Chpt 1	PA 1
02 (Jan 17 – Jan 21)	Intro to Office and R	Jan 20	MC18 Chpt 2	PA 4
03 (Jan 24 – Jan 28)	Qualitative Data	Jan 27	MC18 Chpt 3	PA 3
04 (Jan 31 – Feb 4)	Quantitative Data 1	Feb 3	MC18 Chpt 4	PA 10
05 (Feb 7 – Feb 11)	Quantitative Data 2	Feb 10	MC18 Chpt 5	PA 15
06 (Feb 14 – Feb 18)	From Idea to Operationalization	Feb 17	MC18 Chpt 6	PA 6
	<i>READING WEEK Feb 22-25</i>			
07 (Feb 28 – Mar 4)	Measurement	March 3	MC18 Chpt 7	PA 11
	<i>Research Proposal Due Mar 4 11:59 pm</i>			
08 (Mar 7 – Mar 11)	Data (Cleaning, Organization, Analysis)	March 10	MC18 Chpt 8	PA 16
09 (Mar 14 – Mar 18)	Drawing Conclusions from Data	March 17	MC18 Chpt 9	PA 8
10 (Mar 21 – Mar 25)	Advanced Methods: Meta-Analysis	March 24	MC18 Chpt 10	PA 17
11 (Mar 28 – Apr 1)	Ethics & Psychology's Renaissance	March 31	MC18 Chpt 11	PA 2
12 (Apr 4 – Apr 8)	Writing the Report	April 7		PA 5
	<i>Research Report Due April 8 11:59 pm</i>			
	<i>FINAL EXAM (April 13-29)</i>			

Estimated Time Commitment per Week

- Reading – 2 hours
- Lecture Videos – 1 hour
- Review & Question Period – 1 hour (optional)
- Tutorial – 1 hour
- Tutorial Worksheet Prep – 1-2 hours
- Research Proposal & Research Report – 1-3 hours

Important Dates

- Duration of Classes: Jan 10 – Apr 8
- Reading Week: Feb 22-25
- Last day to drop without academic penalty: Mar 28
- Last day to submit term assignments: Apr 8
- Study Break: Apr 9 – 12
- Final Exam Period: Apr 13-29

Course Requirements and Grading

Tutorial Participation	30%	Due: Weekly in Tutorials
Research Proposal	12%	Due: Mar 4th
Research Report	25%	Due: Apr 8th
Final Exam	33%	Final Exam Period (Apr 13-29)

Course Policies

Email Policy

We will do our best to respond to emails within 48 business hours of receiving the email. You should not expect responses to emails outside of normal business hours (M-F 9-5), although we may sometimes choose to respond at other times if it is convenient. The course has been designed so that you do not need to work on weekends (unless you choose to), and we ask that you respect the personal time of the instructor and TAs in a similar manner. Email contact information can be found on the Quercus homepage for the course. Please include "PSYC70" at the beginning of the subject line of any email related to the course, and please always use your UofT email address in correspondence about the course.

Changes to the Course

The schedule, due dates, and nature of assignments are subject to change due to extenuating circumstances beyond our control. Some changes may be mandated by the University. Any other changes will be subject to a class vote, where a simple majority of those enrolled in the course must vote in favour of the change.

Accommodation for Personal Reasons

There may be times when you are unable to complete coursework, including completing readings, viewing lectures, or attending tutorials, due to non-medical reasons. If this occurs during the term you should contact the course instructor immediately to discuss a strategy for completing or dropping the course. It is also a very good idea to speak to an academic advisor.

Religious Accommodations

The University has a commitment concerning accommodation for religious observances. We will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. According to University Policy, if you anticipate being absent from class or missing a major course activity due to a religious observance, please let us know as early in the course as possible, and with sufficient notice (at least two weeks), so that we can work together to make alternate arrangements.

Academic Integrity

The University treats cases of cheating and plagiarism very seriously. The [University of Toronto's Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences in papers and assignments include using someone else's ideas or words without appropriate acknowledgement, submitting your own work in more than one course without the permission of the instructor, making up sources or facts, and obtaining or providing unauthorized assistance on any assignment. On tests and exams

cheating includes using or possessing unauthorized aids, looking at someone else's answers during an exam or test, misrepresenting your identity, or falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes.

Disability-Related Accommodation Request

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the [AccessAbility Services Office](#) as soon as possible. AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. Please contact 416-287-7560 (tel/TTY) or email: ability@utsc.utoronto.ca for more information. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Course Management System Information: Quercus

This course uses the University of Toronto's learning management system, Quercus, to post information about the course. This includes readings, recorded lectures, worksheets, assignment rubrics, access to tests and exams, and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. The site is dynamic and new information and resources will be posted regularly as we move through the term, so please make it a habit to log in to the site on a regular, even daily, basis. To access the course website, go to the U of T Quercus log-in page at q.utoronto.ca. Once you have logged in to Quercus using your UTORid and password, you should see the link or "card" for PSYC70. You may need to scroll through other cards to find this. Click on the PSYC70 link to open our course area, view the latest announcements, and access your course resources. There are Quercus help guides for students that you can access by clicking on the "?" icon in the left side column.

Special note about grades posted online: Please note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved by the department and posted on ACORN at the end of the course. The department has the right to adjust grades up or down, by a fixed amount that is equivalent for everyone, as they see fit, to maintain standards across sections and years. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.

Online Communication Policy

You are required to use your utoronto email address for all course-related communications with the instructor and/or TA, and are expected to check this email address regularly throughout the course to ensure timely access to important information. We will only respond to emails received from a utoronto account when discussing sensitive information, as this is the only way we can verify who we are talking with.

Harassment/Discrimination Policy

The University of Toronto is a richly diverse community and as such is committed to providing an environment free of any form of harassment, misconduct, or discrimination. In this course, we seek to foster a civil, respectful, and open-minded climate in which we can all work together to develop a better understanding of key questions and debates through meaningful dialogue. As such, we expect all involved with this course to refrain from actions or behaviours that intimidate, humiliate, or demean persons or groups or that undermine their security or self-esteem based on traits related to race, religion, ancestry, place of origin, colour, ethnic origin, citizenship, creed, sex, sexual orientation, gender identity, gender expression, age, marital status, family status, disability, receipt of public assistance or record of offences.

Privacy/FIPPA Statement

Personal information is collected pursuant to section 2(14) of the University of Toronto Act, 1971 and at all times it will be protected in accordance with the Freedom of Information and Protection of Privacy Act. Please note that this course requires presentations of one's work to the group. For more information, please refer to www.utoronto.ca/privacy.

Copyright of Course Materials

Course materials are provided for the exclusive use of enrolled students. You do not have permission to share them or sell them to anyone outside of the course. The materials should not be posted on websites, uploaded to social media sites, printed and distributed or sold to others, nor sold to companies that intend to package them to sell or distribute to other people in print or via the internet. The University will support me in asserting and pursuing my rights, and my copyrights, in such matters.

You do have my permission to make your own recordings of any lectures for your own personal use. These may not be distributed, shared, sold, or posted on the internet, in whole or in part, without my permission.

Resources

UTSC administrative information, academic support, and well-being:

- [Quercus \(learning platform for this course\)](#)
- [Important Dates and Deadlines](#)
- [Academic Advising and Career Centre](#)
- [Writing Services](#)
- [AccessAbility](#)
- [Health and Wellness](#)

If you wish to continue your training in lab methods, consider the following courses offered in our department:

- PSYB03: Introduction to Computers in Psychological Research
- PSYC03: Computers in Psychological Research: Advanced Topics
- PSYC71: Social Psychology Laboratory
- PSYC72: Developmental Psychology Laboratory
- PSYC73: Wellness and Resilience Laboratory
- PSYC74: Human Movement Laboratory
- PSYC75: Cognitive Psychology Laboratory
- PSYC76: Brain Imaging Laboratory
- PSY/NROC90: Supervised Study in Psychology
- PSYD52: Neural Network Models of Cognition Laboratory
- PSYD55: Functional Magnetic Resonance Imaging Laboratory
- PSY/NROD98: Thesis in Psychology

Late Assignments and Missed Tutorials

There are two assignments with due dates for this course: the Research Proposal (due Mar 4th) and the Research Project (due Apr 8th). There are no late penalties for submitting the Research Proposal after the due date. However, we may not be able to provide you with feedback on your submission if you submit after the official due date (in other words, you may only receive a grade, with no comments). Under normal circumstances, we are not able to accept the Research Project after the due date because university policy states that all assignments must be submitted by the last day of classes. If you are unable to meet the April 8th deadline due to illness or emergency then please follow the instructions outlined in the section below, sending the requested information to your TA, and note that we are not able to accept submissions, for any reason, more than 5 business days after the last day of classes.

Your total tutorial participation grade will be based on your best 10 of 12 individual tutorial grades. There is no missed term work policy for tutorial participation – if you miss a tutorial it will automatically result in a grade of 0 for that tutorial. There is no opportunity for ‘make-up’ assignments for these grades. It is highly recommended that if you miss a tutorial due to illness or emergency that you declare the illness or emergency on ACORN. **You do not need to send this to your instructor or TA at that time.** However, if you miss more than 2 tutorials due to illness or emergency, and ask for accommodation for a 3rd tutorial (or more), we may ask for evidence of declaration of the previous illnesses/emergencies on ACORN as part of considering your request. Lack of proof of previous declarations may result in us declining your request for accommodation.

Psychology Department Missed Term Work Policy, WINTER 2022

For missed term work (assignments and term tests) due to illness, emergency, or other mitigating circumstances, please follow the procedures outlined below.

- The following reasons are not considered sufficient for missed term work: travel for leisure, weddings, personal commitments, work commitments, human error.
- Missed Final Exams are handled by the Registrar’s Office and should be declared on eService: <http://www.utsc.utoronto.ca/registrar/missing-examination>
- Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, you would need to file a petition with the Registrar’s Office: <https://www.utsc.utoronto.ca/registrar/term-work>

Accommodations for Illness or Emergency:

For missed work due to ILLNESS OR EMERGENCY, complete the following **three-step** process:

1. Complete the [Request for Missed Term Work Accommodations Form](#)
2. **Declare your absence** on ACORN (Profile & Settings > Absence Declaration)
3. **Email both the Request for Missed Term Work Accommodations Form AND a screenshot of your Self-Declared Absence on ACORN** to the email address provided by your instructor on the course syllabus **WITHIN 2 BUSINESS DAYS** of the missed work.

Note: If you are unable to submit your documents within 2-business days, **you must still email your instructor within the 2-business day window** to explain the nature of the delay, and when you will be able to provide your documents. Exceptions to the documentation deadline will only be made under **exceptional circumstances**.

Note: For this semester, we do not require any additional supporting documentation (e.g. medical notes) to support your missed term work accommodation request.

Accommodations for Academic Conflicts:

For missed term work due to an ACADEMIC CONFLICT (i.e. two midterms scheduled at the same time), please complete the following process:

1. Complete the [Request for Missed Term Work Accommodations Form](#), choosing “Other” and explaining the conflict in the space provided.
2. Take screenshots of your course homepages that demonstrate the conflict.
3. Email the form and screenshots to your course instructor **at least two weeks (10 business days) before the date of the activity**, or as soon as possible if it was not possible to identify the conflict earlier.

Note: Multiple assignments due on the same day are not considered conflicts. Accommodations may only be possible in the case of quizzes and tests that are both scheduled during the same discrete period. Back-to-back tests/quizzes are not considered conflicts.

Note: Students are responsible for keeping their course timetables conflict-free. Students who choose to register in two synchronous courses with overlapping lecture/tutorial/lab schedules will not be accommodated.

Accommodations for Religious Conflicts:

For missed term work due to a RELIGIOUS CONFLICT, please complete the following process:

1. Complete the [Request for Missed Term Work Accommodations Form](#), choosing “Other” and noting “Religious conflict” in the space provided.
2. Email the form to your course instructor **at least two weeks (10 business days) before the date of the activity**, or as soon as possible if it was not possible to identify the conflict earlier.

Accommodations for Students Registered with AccessAbility Services:

For missed **TERM TESTS** due to ACCESSABILITY REASONS:

- **Contact your AccessAbility consultant** and have them email your instructor detailing accommodations required.

For missed **ASSIGNMENTS** due to ACCESSABILITY REASONS:

- If your desired accommodation is **within the scope** of your Accommodation Letter (e.g. your letter includes “extensions of up to 7 days” and you need 3 days):
 1. Complete the [Request for Missed Term Work Accommodations Form](#).
 2. Email the form and your **Accommodation Letter** to your instructor, specifying how many days extension you are requesting.
- If your desired accommodation is **outside the scope** of your Accommodation Letter (e.g. your letter includes “extensions of up to 7 days” but you need more time than that):
 1. **Contact your AccessAbility consultant** and have them email your instructor detailing the accommodations required.

Accommodation Procedure:

After submitting your documentation, you will receive a response from your instructor or TA. This form does not guarantee that you will be accommodated. The course instructor reserves the right to decide what accommodations (if any) will be made. Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation. **You are responsible for checking your official U of T email and Quercus course announcements daily**, as accommodations may be time-critical.

For missed assignments, **do not wait for an instructor response to resume work on your assignment**. Extension accommodations may be as short as one business day, depending on the nature of the illness/emergency. You should complete your assignment as soon as you are able and email it your instructor.

For an anticipated event (e.g. scheduled surgery or an illness with a prolonged recovery period), submit a [Verification of Illness Form](#) completed by your doctor, AND this form to your instructor if

you would like to request accommodations in advance of the assignment deadline or midterm date.
Declare your future absence on ACORN (absences can be declared up to 14 days in the future).

Missed Accommodations

If an accommodation is granted but a continued illness/emergency prevents you from meeting the requirements of your accommodation, you must repeat the missed term work procedure to request additional accommodations. **Please make it clear in your subject line that you are requesting a second accommodation.** For example, if you are given an extension but are still sick and need more time, or if you miss a make-up midterm, you must submit another request 'Missed Term Work Accommodations' form and declare your extended absence on ACORN. ***Note: In the case of a missed make-up test, an opportunity to write a