PSYC70: Advanced Research Methods Laboratory
0.5 credits

University of Toronto, Scarborough
Winter, 2020
LEC01 | Tuesdays 1210-200PM | SW309
LEC02 | Wednesdays 1210-200PM | IC220

|	
Instructor:	Prof. Michael Souza ("SUES-uh")
Email:	michael.souza@utoronto.ca (<u>please note</u>: I will not respond to Quercus messages)
Office:	PO103, Room 121 (enter through the side furthest from SW)
Office Hours:	LEC01 – Tuesdays 215-315PM, and by appointment
	LEC02 – Wednesdays 215-315PM, and by appointment
	Please only attend office hours for your respective section

I. Your instructional team
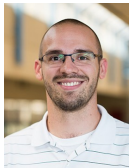
Dr. Souza is an Associate Professor (Teaching Stream) of Psychology and Neuroscience. He received his Ph.D. in Psychology from the University of California, Berkeley. His teaching interests revolve around higher-order cognitive functions, cognitive impairments and neurorehabilitation. He is also interested in fostering opportunities that promote student growth and development.

Michael Carnovale is a MA student in Clinical Psychology. He previously completed a BSc (Hons) in Psychology at the University of Toronto Mississauga. His research interests are concerned with the psychological assessment of psychopathology constructs broadly, and with interpersonal perception in the context of psychopathology.

Kevin Hamdullahpur is a PhD student in Clinical Psychology. He has received a BSc in Neuroscience from Carleton University, an MSc in Psychiatry from McGill University, and a MA in Clinical Psychology from the University of Toronto. His research focuses on substance use disorders, personality psychopathology, and emotion dysregulation.

Shouyu Ling is a PhD student in Cognitive Neuroscience. She received her BA (Hons) in Psychology from the University of Toronto Scarborough and MSc from the University of Southampton. Her research focuses on reconstructing information from brain activities.

Cindy Tao is a PhD candidate in Psychology. She received her BSc (Hons) and MSc from Queen's University. Her research examines relationships between acute stress and gender on reward processing.

Dylan Yeates is a PhD student in Behavioural Neuroscience. He received his BA from the University of British Columbia and his MA from the University of Toronto. His research focuses on the role of the hippocampus in emotional learning and behaviour.

II. Course description, pre-requisites and learning goals

The process by which we develop possible research ideas, articulate clear research questions and informed hypotheses, develop rigorous research designs to address those questions, and evaluate and present our findings is critical not just to psychological science, but to *every* science. This course is designed to provide students with a concentration of skill development opportunities to improve elements of the abovementioned priorities, ranging from improving their ability to consume and critique primary research, to representing complex ideas in effective visual formats, developing and implementing a schema for a grant proposal, and strengthening your effectiveness at public speaking.

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

After successful completion of this course, you will have demonstrated an improved ability to:

1. Identify and describe the importance of – and context around – a number of important issues in psychological research methods (e.g., replication crisis);
2. Analyze, evaluate, and critique primary literature in psychological science;
3. Describe the utility of visuals to represent complex ideas/information more effectively (e.g., experimental procedures), and to practice developing such visuals;
4. Identify and describe the central goals of a grant proposal, to develop a schema appropriate for addressing those goals, and to create a proposal;
5. Identify and describe various components of effective public speaking, and to apply this knowledge to create an effective group research paper presentation.

III. Course readings

This course does not require any textbook. Rather, this course will prioritize strengthening your ability to becoming competent in evaluating primary literature and as such, will wholly rely on such articles. Throughout the course, you will have read a minimum of ten (10) primary research articles.

With respect to lecture content, while it is not required, students *may* find it helpful to have a copy of Research Methods in Psychology (3rd edition) by Morling (as used in PSYB70), or a comparable book.

With respect to tutorials, while it is not required, students may find it helpful to pick up a copy of a book that discusses strategies for effective public speaking. One that I have found both affordable and useful is *How to Develop Self-Confidence and Influence People by Public Speaking*, by Dale Carnegie (see image, right). Importantly, this is the kind of book you'd have in your professional development library...
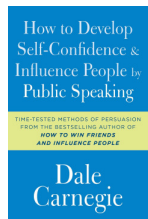
IV. Course webpage

Quercus will house important course-related announcements, materials, and marks. I expect that you will check it a few times per week to ensure that you do not miss any important updates.

V. Course requirements and grading

Midterm Examination (25% of the course grade)
(Learning outcomes #1,2,3)
The Midterm Examination, which will consist of a combination of multiple-choice and short-answer/essay questions, will cover the lecture material and associated skills from before reading week, the Tanner (2012) reading, as well as three (3) primary research articles. The three primary research articles will be released during Week 5, and it is expected that you carefully review them prior to the exam. A variety of practice

exercises/questions, including two not-fot-credit "reading checks" to simulate testing style and expectations, will be provided to help prepare you for the exam.

The Midterm will be scheduled *outside* of typical class time, and will occur after reading week. I cannot confirm the date of the Midterm until it is scheduled and released by the Office of the Registrar.

Cumulative Final Examination (33% of course grade)

(Learning outcomes #1,2,3)
The Final Examination, which will consist of a combination of multiple-choice and short-answer/essay questions, will cover the lecture material and associated skills from the entire term. There will also be two (2) research articles assigned for the Final Exam, which will be released in the couple of weeks before the end of the term. The same tools provided for the Midterm will be helpful for the Final Examination, and further materials post-reading week will further augment your ability to prepare successfully.

Final exam dates and times are scheduled by the Office of the Registrar. You should **NOT** make travel plans until you learn the date of our exam. You CANNOT take this exam at a different date/time (see Missed Term work policy in this syllabus).

Grant Proposal (20% of the course grade)

(Learning outcomes #2,4)
You will be asked to create a <u>one-page</u> grant proposal to propose a follow-up to a research study that you have been assigned to by Prof. Souza. To prepare you for this assignment, two in-class lectures will be delivered to help you develop a schema and plan for what is being asked of you. The paper you have been assigned to will be released approximately four (4) weeks prior to the deadline. For more extensive details and guidance, please refer to the separate Grant Proposal handout.

Completion of TCPS 2 core (01% of course grade)

(Learning outcomes #1)
Researchers in Canada must complete the TCPS 2, and you will be asked to do the same. You will register for an account with TCPS, complete the online modules, and print out your certificate of completion. You will then upload your certificate to Quercus. You should budget a few hours to complete this task, and you may complete it in separate sittings, as your progress is saved after the completion of each module. If you have already completed this for any reason (i.e., you are a research assistant in a laboratory already), you may submit the certificate you have already earned. **Late or incorrect submissions will receive no credit.**

Instructions for the TCPS core
1. Go to the website https://tcps2core.ca/welcome
2. Click "Log-in to Core / Create Account" on the right side of the page
3. Click "Create new account here"
4. Select "Undergraduate Researcher," select "University of Toronto," enter your UofT ID number, choose "English," enter your legal first name and last name, use your UofT email address, and select a password that you can remember. Finally, click "Register."
5. Check your email for an email to activate your account. Be sure to check your spam folder if you haven't received an email within a few minutes.
6. After validating your account, log in and complete the eight (8) modules. <u>Note that you will require a machine that has Flash Player to engage the modules.</u> You may complete the modules across multiple sessions, but you should complete a given session before signing out.
7. When you have successfully completed the core, print out your certificate using a PDF creator.
8. Submit your certificate PDF to Quercus under the appropriate assignment.

Tutorial attendance and participation (07% of the course grade)
(Learning outcomes #5)
The primary goal of the tutorials – which are wholly separate from lecture – are to equip you with useful tools to strengthen your public speaking skills. Formal instruction will be provided on perceived and real challenges in public speaking, and you will have regular opportunities to practice these skills with your peers. Regardless of whether this is your first proper university experience with public speaking or not, you should find value to these discussions. You will earn marks for attending <u>and</u> actively participating in tutorials. For more details, please refer to the separate Tutorial "mini-syllabus" that you will receive on the first day of tutorials.

Tutorial paper presentation (14% of the course grade)
(Learning outcomes #2,3,5)
The culmination of your public speaking skills training will be a group research presentation in tutorial on a research paper you have been assigned. Your performance will be evaluated using a detailed rubric that leans on the particular speaking skills you have worked on during the term in tutorial. For more details, please refer to the separate Tutorial "mini-syllabus" that you will receive on the first day of tutorials.

VI. <u>Course policies</u>

Classroom conduct and participation
Our classroom is a place where you should always feel safe and respected. It is also a place that is conducive to learning and intellectual curiosity. Any behaviors compromising this environment will not be tolerated and the student(s) and/or individual(s) will be asked to leave.

I work to create an interactive dynamic during my classes that engages you to think and contribute. I challenge you to use this time to not only become familiar with the content we are discussing, but to also develop your critical thinking skills along with me. Given the skill-focus nature of this course, it is my expectation that you will come to class ready and prepared to productively engage each and every time. Indeed, the yield of this class is directly related to how much effort and thought you put into the opportunities in front of you…

Lecture slides
For your convenience, lecture slides will usually be posted by 10PM the evening before a lecture. They will be posted in PDF format in two versions only (2 slides and 6 slides per page).

<u>You should know that these lecture slides are absolutely not a suitable substitute for attending lecture.</u> Lecture slides are not exhaustive; we will regularly cover important material that extends beyond the slides during lecture. You are responsible for this material and failing to attend to this material is likely to have a seriously negative effect on your ability to succeed in this course.

Instructional materials are only for the purpose of learning in this course and must not be distributed or used for any other reason whatsoever.

E-mail policy
In most cases, e-mails will be answered within 48 hours of receipt (not including weekends). The email subject should include our course name and nature of the inquiry (i.e., "PSYC70: Concept Model inquiry"). The start of your email should include your full name and student ID number so that I know who you are. Emails that you send should contain no more than one question and you should try to explain your current understanding of the concept in the email (which will be affirmed or corrected).

If you are not used to writing emails in an academic context, I encourage you to review this online resource so that you adopt proper email etiquette now and in the future: <<u>https://tinyurl.com/kysxwtx</u>>

Office hours
Office hours are a valuable resource for you to learn more about the class and/or important things related to (but outside of) the class. You should consider visiting Prof. Souza's office hours if you would like to (1) discuss course content or course requirements, (2) if you have an issue with your course progress, or (3) you would like to discuss the field of psychology/neuroscience and how to get more involved. Your teaching assistants are also an incredibly valuable resource for both the tutorials and the grant proposal. I strongly encourage you to consult with them when appropriate.

Class discussion board on Quercus
For your convenience, discussion threads will be created to improve information flow in our course.

On the first thread, you will have a space to share interesting and course-relevant articles or media. On the second thread, you will have a space to ask logistical or related questions to Dr. Souza that other students might benefit from knowing (i.e., not of a personal nature). Content questions will not be answered by Prof. Souza on this thread, but he will happily address any such questions before/after class or during office hours. On the third thread, you may direct questions to your fellow classmates to clarify a concept, form a study group, etc. Please note that you are NOT allowed to post class notes on the discussion board.

Syllabus changes
There may be minor changes to the syllabus during the term. You will be notified of these changes ASAP and no changes will be instituted that dramatically affect your ability to properly prepare for an assessment.

Late work policies
For TCPS 2, no late submissions will be accepted under any circumstances.

For the grant proposal, in the real world, late submissions are *never* accepted. While our policy will not be that stringent, strict late penalties will be imposed for late submissions. Please refer to the Grant Proposal handout for more detailed information.

Missed Term Work due to Medical Illness or Other Emergency:
All students citing a documented reason for missed term work must submit their request for accommodations **within three (3) business days** of the deadline for the missed work.

Students must submit **BOTH** of the following:
1. A completed **Request for Missed Term Work Accommodations form** (http://uoft.me/PSY-MTW), and
2. **Appropriate documentation** to verify your illness or emergency, as described below.

Appropriate documentation:

For missed **TERM TESTS** due to **ILLNESS**:
- Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with an **original** copy of the official UTSC Verification of Illness Form (uoft.me/UTSC-Verification-Of-Illness-Form) or an **original** copy of the record of visitation to a hospital emergency room.   Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.
- Note: If an end date of "ongoing" is specified, the medical note will be assumed to cover a period of two weeks. If no end date / an "unknown" end date is specified, the note will be assumed to cover a period of three business days (starting from illness start date.)

For missed **TERM TESTS** due to **ACCESSABILITY REASONS**:
- Meet with your **AccessAbility consultant** and have them email Keely (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed **ASSIGNMENTS** due to **ILLNESS**:
- Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with a **hardcopy** of the Self-Declaration of Student Illness Form (uoft.me/PSY-self-declare-form).

For missed **ASSIGNMENTS** due to **ACCESSABILITY REASONS**:
- If your desired accommodation is **within the scope** of your Accommodation Letter (ex. your letter includes "extensions of up to 7 days" and you need 3 days), submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW) and attach a copy of your letter. **Specify how many days extension you are requesting** on the request form.
- If your desired accommodation is **outside the scope** of your Accommodation Letter (ex. your letter includes "extensions of up to 7 days" but you need more time than that) you will need to meet with your **AccessAbility consultant** and have them email Keely (keely.hicks@utoronto.ca) detailing the accommodations required.

For missed term tests or assignments in **OTHER CIRCUMSTANCES**:

Submit the Request for Missed Term Work Accommodations form (http://uoft.me/PSY-MTW), along with:
- In the case of a **death of a family member or friend**, please provide a copy of a death certificate.
- For U of T varsity-level or professional **athletic commitments**, an email from your coach or varsity administrator should be sent directly to Keely Hicks (keely.hicks@utoronto.ca) **well in advance** of the missed work, detailing the dates and nature of the commitment.
- For **religious accommodations**, please email (keely.hicks@utoronto.ca) **well in advance** of the missed work.
- For circumstances **outside of these guidelines**, please email Keely (keely.hicks@utoronto.ca) on or before the date of the test / assignment deadline to describe your circumstances and ask what documentation would be appropriate

Documents covering the following situations are NOT acceptable: medical prescriptions, personal travel, weddings/personal/work commitments.

Procedure:

Submit your (1.) request form and (2.) medical/self-declaration/other documents in person **WITHIN 3 BUSINESS DAYS** of the missed term test or assignment.

Submit to: Keely Hicks, Room SW420B, Monday – Friday, 9 AM – 4 PM. (Slide forms under door if out of office.) After submitting your documentation, within approximately one to five business days, you will receive a response from your instructor detailing the accommodations to be made (if any).

You are responsible for checking your official U of T email and Quercus course announcements daily, as accommodations may be time-critical.

You should continue to work on your assignments to the best of your ability, as extension accommodations may be as short as one business day, depending on the nature of the illness/emergency.

If an accommodation has been granted but you are unable to meet the conditions of the accommodation (ex. you need a longer extension, or you missed a make-up test), you will need to repeat the missed term work procedure and submit additional forms to request further accommodation. Note that in the case of a missed make-up test, an opportunity to write a second make-up test may not be provided.

Completion of this form does NOT guarantee that accommodations will be made. 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.

Missed Accommodations

If an accommodation is granted but a continued illness/emergency prevents you from meeting the requirements of your accommodation, you must <u>repeat</u> the missed term work procedure to request additional accommodations.

(E.g.) If you miss a make-up midterm, you would need to submit <u>another</u> Request for Missed Term Work Accommodations form. If your original medical note / documentation included the date of the make-up midterm, then only the Request form is required. If the date of the make-up midterm fell outside of the dates indicated on your original medical note/other documentation, then a new medical note/other appropriate documentation must also be submitted.

Importance of Three Business Day window:
If you are unable to submit your documents in-person within the three business day window**, you must email Keely** (keely.hicks@utoronto.ca) **within the three business day window** to explain when you will be able to bring your documents in person. Exceptions to the documentation deadline will only be made under **exceptional circumstances**. Attach scans of your documentation, and be prepared to bring your documents to Keely in-person as soon as you are well. Late documents may not be accepted.

NOTE: Assignments due at end of term
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).

NOTE: Final Exams
This policy applies only to missed assignments and term tests. Missed final exams are handled by the Registrar's Office (http://www.utsc.utoronto.ca/registrar/missing-examination).

AccessAbility
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 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 **416-287-7560** or email **ability@utsc.utoronto.ca**. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Academic Integrity
Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (**[http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun01 1995.pdf](http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf)**) outlines the behaviours that constitute academic dishonesty and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:
- 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;
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:
- Using or possessing unauthorized aids;
- Looking at someone else's answers during an exam or test;
- Misrepresenting your identity; and
- When you knew or ought to have known you were doing it.

In academic work:
- Falsifying institutional documents or grades;
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes; and
- When you knew or ought to have known you were doing so.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources.

Note that you may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters.*

It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre.

If you decide to use these services in spite of this caution, you must keep a draft of your work and any notes you made before you got help and be prepared to give it to your instructor on request.

VII. Links you might find useful

UTSC Dates and Deadlines   **https://www.utsc.utoronto.ca/registrar/dates-and-deadlines**

Conducting research
UTSC Library   **https://utsc.library.utoronto.ca/**
Pubmed.org   **https://www.ncbi.nlm.nih.gov/pubmed/**

Skill building, future planning
Academic Advising,
  Career Centre   **http://www.utsc.utoronto.ca/aacc/**
Writing Services   **http://www.utsc.utoronto.ca/twc/**
Presentation Skills   **http://www.utsc.utoronto.ca/ctl/presentation-skills**

Your well-being
AccessAbility   **http://www.utsc.utoronto.ca/~ability/**
Health and Wellness   **http://www.utsc.utoronto.ca/hwc/**
Test anxiety   **https://www.anxietybc.com/sites/default/files/Test_Anxiety_Booklet.pdf**

The Department of Psychology
UTSC Psychology   **http://www.utsc.utoronto.ca/psych/**
UTSC Experiential Learning   **http://www.utsc.utoronto.ca/psych/experiential-learning**
Psychology lab opportunities   **http://tinyurl.com/jjq25t7**
Psi Chi @ UTSC   **https://www.utsc.utoronto.ca/projects/psichi/**

PSYC70: Lecture and reading schedule

LEC01 classes held on Tuesdays | LEC02 classes held on Wednesdays

May be subject to minor revisions with advance notice from the instructor

Week	Week of	Topics of the day	Readings/media and deadlines
1	6-Jan	**Introduction to course goals and format** **Deconstructing our course design**	#01
2	13-Jan	**From *understanding* to *critically evaluating***	-
3	20-Jan	**Conceptual and operational variables**	#02, #03, #04
4	27-Jan	**Practice Reading Quiz #01** (Downing, 2009) **Effective visuals (Part 1)**	#05
5	3-Feb	**Practice Reading Quiz #02** (Richmond, 2017) **Effective visuals (Part 2)**	**Three articles for Midterm provided**
6	10-Feb	**Tri-Council funding structure in Canada** **Deconstructing grant proposals (Part 1)**	#06 **TCPS 2 certificate DUE this week**
7	17-Feb	**READING WEEK - NO CLASS!**	-
8	24-Feb	**Deconstructing grant proposals (Part 2)**	<u>Note</u>: Midterm will be scheduled to occur as early as this week
9	2-Mar	**The replication crisis**	#07
10	9-Mar	**Open Science**	#08
11	16-Mar	**Current issues of psychological ethics**	#09 **Two articles for Final provided**
12	23-Mar	**Graduate student panel**	#10
13	30-Mar	**The challenge of effective translation** **Course synthesis and conclusion**	**Grant proposal DUE this week**
14	*TBD*	**Final Examination** Scheduled by Registrar sometime between 08-25 Apr	#11

Note: The numbers used in the final column refer to readings and media on page 10 of this syllabus.

Assigned readings/media

May be subject to minor revisions with advance notice from the instructor

1. Tanner, K. D. (2012). Promoting student metacognition. *CBE–Life Sciences Education*, *11*(2), 113-120.

2. Research Methods - Chapter 03 - Conceptual Definitions
    (https://www.youtube.com/watch?v=8HyshxsdRb4)

3. Research Methods - Chapter 03 - Operational Definitions
    (https://www.youtube.com/watch?v=7aHZrXvHsuw)

4. Downing, K., Kwong, T., Chan, S. W., Lam, T. F., & Downing, W. K. (2009). Problem-based learning and the development of metacognition. *Higher Education*, *57*(5), 609-621.

5. Richmond, A. S., Bacca, A. M., Becknell, J. S., & Coyle, R. P. (2017). Teaching metacognition experientially: A focus on higher versus lower level learning. *Teaching of Psychology, 44(4)*, 298-305.

6. Review this webpage: https://www.nserc-crsng.gc.ca/Students-Etudiants/PG-CS/CGSM-BESCM_eng.asp

7. Shrout, P. E., & Rodgers, J. L. (2018). Psychology, science, and knowledge construction: Broadening perspectives from the replication crisis. *Annual Review of Psychology*, *69*, 487-510.

8. Review and peruse these webpages: Open Science Framework (https://osf.io)
                                              OpenNeuro (https://openneuro.org)

9. Visit and peruse the following website: (https://retractionwatch.com/)

10. Review and peruse these webpages:

    UTSC Clinical Psychology graduate admissions
    (https://www.utsc.utoronto.ca/psych/prospective-students)

    UofT Psychology graduate admissions
    (https://www.psych.utoronto.ca/prospective-graduate-students/about-our-tri-campus-graduate-program)