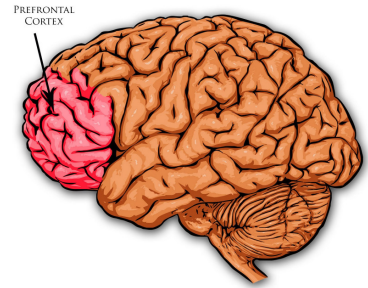


# PSYC50: Higher-Level Cognition

0.5 credits

University of Toronto, Scarborough  
Summer Term, 2019  
Mondays/Thursdays 900AM-1100AM  
LEC01 (BV 264)



**Instructor:** Prof. Michael Souza (“sues-uh”)  
**Email:** michael.souza@utoronto.ca  
**Office:** PO103, Room 121 (enter through the side furthest from SW)  
**Office Hours:** Tuesdays 12:00-1:00PM, Wednesdays 1030-1130AM, and by appointment

**TAs:** Please find more information on our Quercus course website

## I. Your course 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.

## II. Course description, pre-requisites and learning goals

Executive functions are a set of mental functions that enable goal-directed behavior. These functions strengthen during typical development and may be affected by numerous factors, including positive or destructive aspects of nurture (e.g., exposure to teratogens), psychological illness, neurological injury, and more. From a content standpoint, this course will provide you with an opportunity to better understand executive functions from theoretical, experimental and applied standpoints. From a process standpoint, you will have an opportunity to strengthen your ability to consume and critique primary research articles, to plan and execute a collaborative research project on an appropriate topic of your choosing, and to build confidence in your scientific voice.

**Prerequisites:** [ PSYB55H3 or PSYB57H3 or [(PSYB65) if taken in Fall 2017 or Summer 2018]] and [ PSYB07H3 or STAB22H3 or STAB23H3]

After successful completion of this course, you will have:

1. developed a theoretical understanding of what executive functions are and why they are essential for promoting goal-directed behaviors;
2. developed a conceptual framework for organizing components integral to executive functioning;
3. connected elements of executive functioning with a broad array of real-world applications;
4. practiced understanding the core elements of scientific journal articles, and worked to develop thoughtful critiques of these articles;
5. practiced searching the scientific literature to identify and develop appropriate references to build compelling arguments for a research project;
6. practiced thoughtfully responding to feedback on your work;
7. improved your ability to collaborate with your colleagues on a research project;
8. co-created a scientific poster for oral presentation to your colleagues.

### III. Course readings

This course will **not** use a textbook. This course will prioritize strengthening your ability to becoming competent in evaluating primary literature and as such, will wholly rely on such articles.

### 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

#### **Reading checks (5 @ 5% each = 25% of the course grade)**

*(Learning outcomes #2,3,4,6)*

In an effort to build your ability to consume primary research, we will have several 'lower stakes' reading checks on the assigned readings. The reading checks will occur earlier in the course (please see the course schedule) as to help support your ability to effectively consume literature for your research project. The cumulative value of all of the reading checks is comparable to a typical course midterm, and to clarify just how important the development of this skill is for this course (and more generally), *they will occur in lieu of one.*

The reading checks will be held during normal class time and will start promptly at the beginning of class. They will last ~25 minutes each, and will include several short-answer questions. These questions will tap your understanding of the rationale for the research, core features of the methods, and understanding and interpreting the results. They will also progressively load on your ability to critique the work in informed and principled ways.

#### **Cumulative Final Examination (35% of course grade)**

*(Learning outcomes #1,2,3,4,5)*

The goal of the Final is to test your ability to think about executive functions in conceptual, experimental and applied manners. The Final exam will include material from all content lectures, and the readings associated with Lectures 9-10 (see the course schedule). The Final will consist of both multiple-choice (MC) questions and short-answer (SA) questions.

MC questions will have five options and these questions may come in various formats, including (but not limited to) questions with diagrams and "all of the above" or "none of the above" options. MC questions will be drawn from both lecture and the readings. MC questions must be answered using the Scantron form; answers indicated on the test booklet but not the Scantron form will not be scored.

SA questions may require a several sentence response based on the question complexity, and may also require the creation or analysis of a visual (e.g., diagram). SA questions will be drawn from both lecture and the readings. SA questions will be weighted based on relative difficulty, as opposed to how many things you need to say (i.e., a five point question does not necessarily require five thoughts).

Rote memorization of lectures and the readings will not guarantee you a high mark; rather, I expect you to not only learn what things are, but also why they are relevant, how/why they are and might be used, etc. To acclimate you to my question style and to help keep you on task with the lecture materials, sample questions will be posted after each content lecture. I advise you to navigate this material while it is fresh in your mind and to seek assistance from Prof. Souza for any issues that would benefit from clarification or a discussion.

Importantly, the date of the final is not announced by the University until the middle of the term. You should NOT make travel plans until you learn the date of your final exams. You CANNOT take the Final at a different date/time unless you have a verifiable medical reason.

## **Poster Project (multiple parts constituting 40% of course grade)**

(Learning outcomes #3,4,5,6,7,8)

Together with one partner of your choosing, you will be asked to conduct a research project to further explore current research in a topic related to executive functioning. Your group will research a minimum of nine (9) references and detail what you've learned into a scientific poster that your group will present in a conference-like format at the end of the course. Detailed project guidelines will be posted to Quercus.

### **Forming your group (PASS/PENALTY scoring)**

You are responsible for forming groups prior to the deadline. Consider using the time before or after class to help with this and/or the Quercus discussion board. After forming a group, you will need to complete the "Group Member Form," providing your relevant information and original signature. A complete form submitted by the deadline will result in a PASS. Failure to complete this by the stated deadline will result in a substantial penalty for the entire group (see Project Guidelines handout).

### **Approval of project focus (PASS/PENALTY scoring)**

Prior to fleshing out your topic proposal, you should email Prof. Souza (email subject line: "PSYC50: Group ## topic pitch") describing the scope of your proposal. Be sure to 'cc' your other group members on this email. Final approval of your topic by Prof. Souza will award you a PASS. Failure to complete this by the stated deadline will result in a substantial penalty for the entire group (see Project Guidelines handout).

### **Topic proposal (6% of course grade)**

A one (1) page document that states the proposed title of your research project, the scope of your research and what motivated its selection from an academic and real-world perspective, how your team plans to tackle the topic collaboratively, and what your audience should expect to learn from it ("learning outcomes").

### **Revised proposal + annotated bibliography (9% of course grade)**

This component has two major components: (1) You must first revisit your 'Topic Proposal' based on the feedback you received. You must thoughtfully address any feedback you have received using a peer-review model, either making changes as appropriate or carefully defending an idea/proposal with more support (where appropriate). (2) You must then create an annotated bibliography, which should include a list of APA-formatted references, and a brief paragraph summarizing the value for each article chosen. A maximally effective revised proposal and annotated bibliography should make it very clear understanding of what you want to study, why it is scientifically important, and how your chosen articles help in pursuit of your goal.

### **Instructor/TA evaluation of your poster presentation (23% of course grade)**

There will be two days for poster presentations. On the day you are scheduled to present, you and your group will bring a professionally printed poster to present your work. You will use this poster as a tool to deliver an 11-12 minute talk that equitably splits the work across group members. Your instructor and/or a TA will evaluate your presentation based on a detailed rubric. You will be expected to give your research talk multiple times to accommodate peer-reviewers (see below), but your instructor/TA will only evaluate your talk once.

### **Peer-review of posters (2% of course grade)**

On the day you are not scheduled to present, you will be peer-evaluating the work of your peers using a rubric provided to you. Your mark will be determined on not only completion, but also the detail of feedback you provided to the presenters.

## VI. Course policies

### **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 lectures 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.

### **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).

You should know that these lecture slides are not a suitable substitute for attending lecture. 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 will likely hamper your course performance.

**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., "PSYC50: Why are EFs so awesome?"). 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: <<https://tinyurl.com/kysxwtx>>

### **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 an incredibly valuable resource not just for reviewing your reading checks, but also preparing for the poster project.

### **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. On the fourth and final thread, you can connect virtually with other classmates who are also in need of a group member for the poster project.

## 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 a reading check or the Final examination.

## Taking reading checks

In my opinion, punctuality to lectures and assessments is a sign of respect to your instructor, teaching assistants and fellow students. Tardy students should not ask the instructor or teaching assistants for what they missed from lecture because they can ask a fellow student. Furthermore, a student will not be allowed to write a reading check if (1) s/he is tardy 10 minutes or more, or (2) a student has already finished and submitted their paper, whichever occurs first. Students in this situation will not be allowed to write and will receive a “0” on the respective check.

When time is called at the end of the reading check, you must immediately stop working and submit your materials. You will not be allowed more time for any reason, including (but not limited to): putting your name or ID on the paper, or filling in or changing an answer. You must also remain completely silent until every exam has been collected. Failure to stop working when time is called or to stay silent until all exams have been collected will result in a zero on the reading check.

Because we will review the reading check answers immediately after they occur, **there will be absolutely no make-ups under any circumstances**. That being said, I encourage such students to view the reading check in the TA office hours to ensure they understand what is being asked of them as to prepare for the next one.

## 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](http://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 the midterm date.)

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

- Meet with your **AccessAbility consultant** and have them email Keely ([keely.hicks@utoronto.ca](mailto: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](http://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](mailto: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](mailto: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](mailto:keely.hicks@utoronto.ca)) **well in advance** of the missed work.
- For circumstances **outside of these guidelines**, please email Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)) on 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.

### 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](mailto: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.utsoc.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.utsoc.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](tel:416-287-7560) or email [ability@utsoc.utoronto.ca](mailto:ability@utsoc.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/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/>

Google Scholar

<https://scholar.google.ca/>

### 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>

Co-op Program

<http://www.utsc.utoronto.ca/askcoop/>

### 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](https://www.anxietybc.com/sites/default/files/Test_Anxiety_Booklet.pdf)

### The Department of Psychology

UTSC Psychology

<http://www.utsc.utoronto.ca/psych/>

UTSC Psychology courses

<http://www.utsc.utoronto.ca/psych/courses>

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/>



## PSYC50: Lecture and reading schedule

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

| <u>Week</u> | <u>Date</u> | <u>Lecture</u> | <u>Topics of the day</u>  | <u>Readings and deadlines</u>                                      |
|-------------|-------------|----------------|---|--|
| 1           | 06-May      | 1              | <b>Course introduction and goals</b><br><b>Goal-directed behavior</b>                     | Robertson (2012)   |
|             | 09-May      | 2              | <i>Skills: reading journal articles</i><br><i>Class discussion: the poster project</i>    | Catani (2008)  |
| 2           | 13-May      | 3              | <b>Theories of executive functions (EFs)</b><br>Reading check #01 (on the Catani article) | Project group forms DUE in class                                   |
|             | 16-May      | 4              | <b>Working memory</b>   | <b><u>Topic proposals due 17/May by 8PM</u></b><br>Houben (2015)   |
| 3           | 20-May      | -              | <b>NO CLASS (Victoria Day)</b>  | -  |
|             | 23-May      | 5              | <b>Inhibitory control</b><br>Reading check #02 (on the Houben article)                    | Manesse (2016)   |
| 4           | 27-May      | 6              | <b>Cognitive flexibility</b><br>Reading check #03 (on the Manesse article)                | Gottwald (2018)  |
|             | 30-May      | 7              | <b>Planning</b><br>Reading check #04 (on the Gottwald article)                            | <b><u>Revised proposals due 31/May by 8PM</u></b><br>Cullen (2015) |
| 5           | 03-Jun      | 8              | <i>Skills: creating a scientific poster</i><br>Reading check #05 (on the Cullen article)  | -  |
|             | 06-Jun      | 9              | <b>Reasoning and problem-solving</b>  | Taber-Thomas (2014)  |
| 6           | 10-Jun      | 10             | <b>Executive functions in "real life"</b><br><b>Course synthesis and conclusion</b>       | Leonard (2015); Cain (2016)  |
|             | 13-Jun      | 11             | <b>Poster presentations - Session #1</b>  | <b><u>Group A presents</u></b><br>Group B peer-evaluates           |
| 7           | 17-Jun      | 12             | <b>Poster presentations - Session #2</b>  | <b><u>Group B presents</u></b><br>Group A peer-evaluates           |
|             | TBA         | -              | <b>Cumulative Final Examination</b><br><i>Will occur during the week of 18-22 Jun</i>     | Lectures 3-7, 9-10<br>Readings from Lectures 9-10                  |