

# PSYC52H3 The Cognitive Neuroscience of Attention

## I) Course information

Course number: PSYC52H3 F

Tapes of the lectures will be posted usually Thursdays in the afternoon  
Place: Quercus

Prerequisite: PSYB51H3 and [PSYB55H3 or PSYB57H3] and [PSYB07H3 or STAB22H3 or STAB23H3]

Exclusion: PSY475H

## II) Instructor:

Dr. Matthias Niemeier  
1265 Military Trail SW550  
e-mail: [psyb51@utsc.utoronto.ca](mailto:psyb51@utsc.utoronto.ca)  
Office Hours: tba

## III) Teaching Assistants:

Nina Lee  
Shouyu Ling  
Simar Moussaoui

## IV) Blurb & Learning Outcomes

This course is about understanding how the human brain collects information from the environment so as to perceive it and to interact with it. The first section of the course will look into the neural and cognitive mechanisms that perceptual systems use to extract important information from the environment. Section two will focus on how attention prioritizes information for action. Additional topics concern daily life applications of attentional research.

By the end of this course, you will have ...

- developed a foundational understanding of the contemporary scientific body of knowledge about the cognitive and neural mechanisms underlying attention
- further developed your ability to consume scientific literature (original and review articles)
- attained a relative independence to acquire scientific knowledge
- strengthened your ability to understand, critique and extend original research in cognitive neuroscience
- practiced your ability to effectively communicate scientific knowledge to others

## V) Course readings (required)

There is no textbook for this course. Instead there will be review articles that you will need to read. There will be one required article for each lecture. Additional articles might be recommended.

## VI) Web page

### Course Web Site: Quercus

Here you will find the syllabus, and announcements. Also, I will put the lecture slides on that page.

Please check on a regular basis for announcements.

## VII) Evaluation

5%	<b>Quizzes</b>	Format: 10 true/false questions pertaining to lectures 2-11, top 7 quizzes will be counted
2 x 15%	<b>Mid-term tests 1&amp;2</b>	
2 x 15%	<b>Thought papers 1&amp;2</b>	Written assignment, 2 pages, double-spaced
35%	<b>Final Term test</b>	

**Quizzes** are meant to encourage you to read and prepare the material for a given lecture ahead of time and properly prepare the facts for the respective lecture. Given this objective, it follows that there is no opportunity to make up for missed quizzes and also that the material tested in the quizzes comes from the readings for the respective week. That said, you can but do not have to participate in all quizzes because I will only count your top 7 quiz scores. Quizzes will consist of 10 yes/no or true/false questions about the reading materials of the respective lecture. Quizzes will take ~5 min. If you have scores for more than 7 quizzes I'll pick your top 7 scores. Please note that due to this top-7 rule there are multiple opportunities to make-up for missed quizzes. Therefore, **I will not accept accommodation requests** (see item X. *Additional Information: Missed Term Work due to Medical Illness or Other Emergency*) for missed quizzes. Also, please make sure to participate in 7 quizzes as early as possible so that you do not run out of opportunities to write quizzes near the end of the term.

The **mid-term tests** and the **final exam** will be equivalent in format and will have short-answer questions only. There will be no multiple-choice questions. Short answer questions are more suitable for measuring conceptual understanding of material, beyond memorizing and recognizing facts.

Material required for the exams will include lecture material and text readings. Although the topics covered will overlap, different things may be emphasized in class than in the readings. I recommend reading all the materials and watching all taped classes.

**Make-up term tests.** For students who missed one of the two midterms for a valid reason (see section X below) **all other evaluations will be re-weighted** in a proportional manner (quizzes: 5.88%, t-papers: 17.65% each, final: 41.18%). For students who **missed both mid-terms** for a valid reason there will be a **make-up test** that covers the material of both mid-terms. We would have the make-up mid-term 1-2 weeks after the regular second mid-term. That is, you would need to submit the respective forms early enough so that you do not miss the make-up mid-term.

**Final Exam Policies & Procedures.** The scheduling of final exams and the granting of petitions to defer final exams are matters that fall entirely within the jurisdiction of the Registrar's Office. If you have any concerns relating to your final exam attendance, please contact the Registrar.

**Thought papers.** The thought papers will be based on a specific research article (you will be provided with a list of possible research articles, and you must choose one to write your paper on). An important aim for this assignment is to help you improve your writing skills while thinking critically about relevant course material.

Each t-paper will be 2 pages long, double-spaced, 12-point font size. The goal is to write about one of your own ideas about one research paper. Format is as follows

- 1 paragraph Introduction beginning with a 2-3 sentence long summary of the article (perhaps preceded by a more general statement about the concept that is investigated etc. – 'bigger picture') about one research article (see marked below). The Introduction needs to end with a thesis statement.
- It follows about 1, 2, 3 paragraphs on your own thought about the article. Focus on one thought only.
- Conclusions: 1 paragraph. Summarize what you've been talking about

More information about the t-papers will be posted on Quercus. Submission will be electronic. Late submissions mean a deduction of 10% of the thought paper grade per each late day. Please make sure you write a genuine paper. Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com website.

## VIII) Schedule

Week	Date	Topic	Reading
1	10-Sep-20	Introduction	<a href="#">Petersen &amp; Posner, 2012</a>
2	17-Sep-20	Dorsal attentional network	<a href="#">Corbetta &amp; Shulman, 2002</a>
3	24-Sep-20	Spatial maps	<a href="#">Silver &amp; Kastner, 2009</a>
4	01-Oct-20	Cerebral attentional control and frontal eye fields	<a href="#">Thompson &amp; Bichot, 2005</a>
	TBD	Mid-term 1	covers materials for Lec 1-4
5	08-Oct-20	Cognitive load and working memory	<a href="#">Lavie, 2010</a>
6	22-Oct-20	Subcortical systems	<a href="#">Knudsen, 2018</a>
7	29-Oct-20	Ventral attentional network and neglect	<a href="#">Corbetta &amp; Shulman, 2011</a>
8	05-Nov-20	Attentional networks and oscillations	<a href="#">Fiebelkorn &amp; Kastner, 2019</a>
	TBD	Mid-term 2	covers materials for Lec 5-8
9	12-Nov-20	Computational models of attention I	Koch & Ullman, 1985
10	19-Nov-20	Computational models of attention II	<a href="#">Itti &amp; Koch, 2001</a>
11	26-Nov-20	Attention and action	<a href="#">Baldauf &amp; Deubel, 2010</a>
12	03-Dec-20	Review	
	<b>TBD</b>	<b>Final exam</b>	covers materials for Lec 1-11

## IX) Important dates

The dates for tests and final exam will be determined by the UTSC admin. This will take a few weeks because it is a complicated coordination process that depends on each student's finalized schedule. The admin will let me know asap and I will post the information immediately.

Thought-paper deadlines will be scheduled depending on mid-terms. E.g., I have tentatively scheduled the submission for t-paper 1 for 02-Oct-20. However, if the first mid-term is scheduled for the same or the following day, I will move the date for the t-paper submission to a later time.

## X) Time zones, missed term work, illness etc.

### Time Zone conflicts

If you are physically in a different time zone and a quiz or midterm is scheduled outside of 7:00am to midnight in your local time, you may use the following form to request

special arrangements. Note that the form is only for term work. [Final exam conflicts](#) are handled by the Registrar's Office.

The form must be submitted **at least ten (10) business days before the activity**.

Form: <https://uoft.me/PSY-TimeZone>

**Submit via email to:** Keely Hicks, Departmental Assistant, [keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)

### **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.

**Submit via email to:** Keely Hicks, Departmental Assistant, [keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)

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 **ASSIGNMENTS** or **TERM TESTS** due to **FLU-LIKE SYMPTOMS** or **SELF-ISOLATION REQUIREMENTS**:

- Email the Request for Missed Term Work Accommodations form ([uoft.me/PSY-MTW](http://uoft.me/PSY-MTW)) to Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)), and
- **Declare** your absence on **ACORN** (Profile & Settings > Absence Declaration)

For missed **ASSIGNMENTS** due to **OTHER ILLNESS**:

- Email the Request for Missed Term Work Accommodations form ([uoft.me/PSY-MTW](http://uoft.me/PSY-MTW)) to Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)), along with the Self-Declaration of Student Illness Form ([uoft.me/PSY-self-declare-form](http://uoft.me/PSY-self-declare-form)).

For missed **TERM TESTS** due to **OTHER ILLNESS**:

- Email the Request for Missed Term Work Accommodations form ([uoft.me/PSY-MTW](http://uoft.me/PSY-MTW)) to Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)), along with a scan/photo of the **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 ER.
- Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration # 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](mailto:keely.hicks@utoronto.ca)) detailing accommodations required.

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 1-7 more days), email the Request for Missed Term Work Accommodations form ([uoft.me/PSY-MTW](http://uoft.me/PSY-MTW)) to Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)), and attach a **copy of your letter**. Specify how many days extension you are requesting in your email.
- 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 **ASSIGNMENTS** or **TERM TESTS** in **OTHER CIRCUMSTANCES**:

Email the Request for Missed Term Work Accommodations form (<http://uoft.me/PSY-MTW>) form to Keely ([keely.hicks@utoronto.ca](mailto:keely.hicks@utoronto.ca)), along with:

- For the **death of a family member/friend**, provide a copy of the 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 ([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 ([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 or before the date of the test / assignment deadline** to describe your circumstances and determine appropriate documentation.

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

As stated above, your documents must be submitted **within three (3) business days** of the deadline for the missed work.

#### **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 repeat the missed term work procedure to request additional accommodations.

(E.g.) If you miss a make-up midterm, you would need to submit another 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 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 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: 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>).

## **XI) Help with Writing**

If you would like help with academic writing, the following resources are available to you:

- The Centre for Teaching and Learning (AC312) Writing Centre offers students one-to-one appointments and supplementary materials to help improve upon their writing skills. <http://ctl.utsc.utoronto.ca/home/http://ctl.utsc.utoronto.ca/twc/>
- The English Language Development Centre offers support and specialized

writing programs for students who do not speak English as their primary language. <http://ctl.utsc.utoronto.ca/eld/>

- Advice on academic writing

<http://www.writing.utoronto.ca/advice>

## **XII) 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: 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.

**Turnitin** Written assignments may be subject to submission for textual similarity review and detection of possible plagiarism using the commercial plagiarism detection software under license to the University (<http://www.turnitin.com>). If used, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

### **XIII) AccessAbility Services**

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@utsc.utoronto.ca](mailto: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.

### **XIV) For Your Health**

The Health and Wellness Centre (SL270, 416-287-7065) provides diagnostic, treatment and referral services for all illnesses ranging from the medical to psychological to health promotion. The professional staff of physicians, nurses and counselors provides personal advice and assistance with family issues, eating disorders, depression, stress, drug and alcohol abuse, relationship issues, a positive space for gender/sexuality issues, and more.

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