

## PSYC52H3 The Cognitive Neuroscience of Attention

### I) Course information

Course number: PSYC52H3 F

Time: Wednesdays 11am – 1pm

Room: MW110

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.utoronto.ca](mailto:psyb51.utoronto.ca) (it really is “psyb51”, not a typo)

Office Hours: tba

### III) Teaching Assistants:

Romesa Khan  
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

**2 x 17.5% Mid-term tests 1&2**

**2 x 15% Thought papers 1&2** Written assignment, 2 pages, double-spaced

**35% Final Term test**

**+2% bonus for 8 passed quizzes**

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 deeper learning and conceptual understanding of material, beyond memorizing and recognizing facts. Besides that I have found that scores for short-answer and multiple choice questions are highly correlated with similar averages. Please talk to me if you like some suggestions about how to prepare.

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 XII below) **all other evaluations will be re-weighted** in a proportional manner (mid-terms: 21.21% each, t-papers: 18.18% each, final: 42.42%). 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 (weight: 35%). 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 Ouriginal (similar to Turnitin, see statement below) for a review of textual similarity and detection of possible plagiarism.

Quizzes are offered as a bonus as voted on by the course. For terms and conditions please refer to the announcement from September 9, 2022.

## **VIII) Schedule**

Week	Topic	Reading
1	Introduction	<a href="#">Petersen &amp; Posner, 2012</a>
2	Dorsal attentional network	<a href="#">Corbetta &amp; Shulman, 2002</a>
3	Spatial maps	<a href="#">Silver &amp; Kastner, 2009</a>
4	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	Cognitive load and working memory	<a href="#">Lavie, 2010</a>
6	Subcortical systems	<a href="#">Knudsen, 2018</a>
7	Ventral attentional network and neglect	<a href="#">Corbetta &amp; Shulman, 2011</a>
8	Attentional networks and oscillations	<a href="#">Fiebelkorn &amp; Kastner, 2019</a>
TBD	Mid-term 2	covers materials for Lec 5-8
9	Computational models of attention I	Koch & Ullman, 1985
10	Computational models of attention II	<a href="#">Itti &amp; Koch, 2001</a>
11	Attention and action	<a href="#">Baldauf &amp; Deubel, 2010</a>
12	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 then 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 the day after the fourth lecture. 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) Disability-Related Accommodations

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 (<http://www.utsc.utoronto.ca/ability/>) as soon as possible.

AccessAbility Services staff (located in Rm AA142, Arts and Administration Building) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. Please contact 416-287-7560 (tel/TTY) or email [ability.uts@utoronto.ca](mailto:ability.uts@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.

### **XI) University's Plagiarism Detection Tool**

Normally, students will be required to submit their course essays to the University's plagiarism detection tool 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 tool's reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of this tool are described on the Centre for Teaching Support & Innovation website (<https://uoft.me/pdt-faq>).

### **XII) Department of Psychology Missed Term Work Policy**

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

Note:

- 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.
- Instructors cannot accept term work any later than five business days after the last day of class. Beyond this date, accommodations are only possible via the Registrar's Office [petition process](#).

The link to the online form to submit missed term work accommodation requests in **PSYC52** is here:  
<link tbd>

### **ILLNESS OR EMERGENCY accommodations:**

For missed work due to ILLNESS OR EMERGENCY, complete the following process:

1. Complete the [Request for Missed Term Work Accommodations Form](#).
2. Declare your absence on [ACORN](#) (Profile & Settings > Absence Declaration)
3. Submit **both** of the following items to the course online form (link see purple text box above) **WITHIN 2 BUSINESS DAYS** of the missed work:

- a. the [Request for Missed Term Work Accommodations Form](#)  
**\*AND\***
- b. a screenshot of your Self-Declared Absence on ACORN

Note:

- *If you are unable to submit your request within 2 business days, you must still email your instructor within the 2 business day window to explain the nature of the delay. Exceptions to the 2 business day deadline will only be made under exceptional circumstances.*
- *If your absence is declared on ACORN, we do not require any additional supporting documentation (e.g. medical notes) to support your missed term work accommodation request.*

**ACADEMIC CONFLICT accommodations:**

For missed term work due to an ACADEMIC CONFLICT (e.g. two midterms at the same time):

1. Complete the [Request for Missed Term Work Accommodations Form](#).
2. Take screenshots of your course Quercus pages that demonstrate the conflict.
3. Email the form and screenshots to the course email **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. Requests sent after the activity deadline may not be accommodated.

Note:

- *Multiple assignments due on the same day are not considered conflicts. Students are expected to manage their time effectively to meet assignment deadlines.*
- *Back-to-back tests/quizzes are not considered conflicts. Only overlapping activities are conflicts.*
- *Students are responsible for keeping their course timetables conflict-free. Students who register in two courses with overlapping lecture/tutorial/lab schedules will not be accommodated.*

**RELIGIOUS CONFLICT accommodations:**

For missed term work due to a RELIGIOUS CONFLICT:

1. Complete the [Request for Missed Term Work Accommodations Form](#).
2. Email the form to the course **email 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. Requests sent after the activity deadline may not be accommodated.

**ACCESSABILITY SERVICES accommodations:**

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

- **Contact your AccessAbility consultant** and have them email the course email 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 the course email 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 the course email 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. **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 the instructor’s response to resume work on your assignment**. Extensions may be as short as one business day, depending on the nature of the illness/emergency. Complete your assignment as soon as you’re able, and email it to your instructor.

For an **anticipated absence** (e.g. a scheduled surgery or an illness with a prolonged recovery period), if you would like to request accommodations in advance, submit a [Verification of Illness Form](#) completed by your doctor AND the [Request for Missed Term Work Accommodations Form](#) to the course email. Absences can be declared up to 14 days into the future on ACORN.

### **Missed Accommodations**

If an accommodation is granted but a continued illness/emergency prevents you from meeting its requirements, 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**. E.g. If you are given an extension but are still sick and need more time, or if you miss a make-up term test, you must submit *another* [Request for 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 second make-up test may not necessarily be provided.*

### **XIII) 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/><sup>[SEP]</sup><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**

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/policies/behaveac.htm>) 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, 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.

### **XIII) Religious Accommodations**

The University has a commitment concerning accommodation for religious observances. I 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 (like a test, or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.



#### **XIV) 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.

#### **XV) Equity, Diversity, Inclusion**

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.

#### **XVI) Masks in the Classroom**

While the mask mandate has been paused as of 1 July 2022, the use of medical masks continues to be strongly encouraged at U of T Scarborough in indoor settings where physical distancing is not possible. We ask everyone to respect each other's decisions, comfort levels, and health needs. Masks are available at all building entrances at U of T Scarborough and in all classrooms.

#### **XVII) 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>