PSYC52H3 The Cognitive Neuroscience of Attention

I) Course information

Course number: PSYC52H3 F

Time: Tuesdays 11am – 1pm

Room: HW214

Prerequisite: PSYB51H3 and [PSYB55H3 or PSYB57H3] and [PSYB07H3 or STAB22H3 or STAB23H3] and PSYB70H3

Corequsites: none

Exclusion: PSY475H

Recommended preparation: none

II) Instructor:

Dr. Matthias Niemeier
1265 Military Trail SW550
e-mail: psyb51.utsc@utoronto.ca (it really is "psyb51", not a typo)
Office Hours: tba

III) Teaching Assistants:

Romesa Khan & Nina Lee

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 in writing scientific knowledge and reasoning to others

V) Course readings (required)

You don't need to buy a textbook for this course as there is no suitable one. Instead, we will use review articles that you should prepare for the lectures. There will be one required article for each lecture. I might recommend additional articles.

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 22%   **Mid-term tests 1&2**

2 x 10%   **Thought papers 1&2** Written assignment, 2 pages, double-spaced

36%   **Final Term test**

The **mid-term tests** and **the final exam** will be equivalent in format and will have short-answer questions only (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 lectures and text readings. Although the topics covered will overlap, different things may be emphasized in class than in the readings. You should read all the materials and 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-term: 28.2%, t-papers: 12.8% each, final: 46.2%). 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: 20%). 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 that I will provide. 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 3-4 sentences 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 2-4 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 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 web site (https://uoft.me/pdt-faq).

VIII) Schedule

Week	Topic	Reading
1	Introduction	Petersen & Posner, 2012
2	Dorsal attentional network	Corbetta & Shulman, 2002
3	Spatial maps	Silver & Kastner, 2009
4	Cerebral attentional control and frontal eye fields	Thompson & Bichot, 2005
TBD	Mid-term 1	covers materials for Lec 1-4
5	Cognitive load and working memory	Lavie, 2010
6	Subcortical systems	Knudsen, 2018
7	Ventral attentional network and neglect	Corbetta & Shulman, 2011
8	Attentional networks and oscillations	Fiebelkorn & Kastner, 2019
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	Itti & Koch, 2001
11	Attention and action	Baldauf & Deubel, 2010
12	Review	
TBD	**Final exam**	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) 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 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 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.

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) Use of Generative artificial Intelligence Tools

Students may use artificial intelligence tools, including generative AI, in this course as learning aids. However, students are ultimately accountable for the work they submit.

Students may **not** use artificial intelligence tools for taking tests or writing written assignments. However, these tools may be useful when gathering information from across sources and assimilating it for understanding.

The knowing use of generative artificial intelligence tools, including ChatGPT and other AI writing and coding assistants, for the completion of, or to support the completion of, an examination, term test, assignment, or any other form of academic assessment, may be considered an academic offense in this course.

XIII) 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 procedure outlined below.

Procedure:

1. Complete the Request for Missed Term Work Accommodations Form ("MTW Form").

2. Email **BOTH** your MTW Form and Supporting Documentation to <course email> according to the instructions specified below.

Supporting Documentation Requirements and Deadlines:

Reason for Missed Work	Documentation required for a *first absence* in the term	Documentation required for *subsequent absences* in the term	Deadline for submitting MTW form and supporting documentation
Illness or Injury	ACORN Absence Declaration	UofT Verification of Illness Form	**WITHIN 2 BUSINESS DAYS** of the missed work
Bereavement	ACORN Absence Declaration	A death certificate or funeral announcement	**WITHIN 2 BUSINESS DAYS** of the missed work
University-sponsored athletic or artistic obligation at the varsity/provincial/national level	ACORN Absence Declaration	A note from a university staff member (advisor, coach, residence staff, etc.) who can substantiate the obligation, sent directly to the course email	**10 BUSINESS DAYS IN ADVANCE** of the missed deadline
Disability-related reasons for students registered with AccessAbility Services	For missed *TERM TESTS,* - **Contact your AccessAbility consultant** and have them write to the course email detailing the accommodations needed. For missed *ASSIGNMENTS,* - 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), send your **Accommodation Letter** to the course email and specify 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), **contact your AccessAbility consultant** and have them write to the course email detailing the accommodations needed.		**PREFERABLY IN ADVANCE OF THE MISSED WORK, OR AS SOON AS POSSIBLE**

Academic Conflict (e.g. two midterms at the same time)	Screenshot from Quercus demonstrating the conflict.	**10 BUSINESS DAYS IN ADVANCE** of the missed work
Religious Conflict	None required	

Notes:

- The following reasons are not considered sufficient for missed term work: social activities, recreational travel, technological issues, avoidance of assessments or deadlines, work commitments
- [Missed Final Exams](#) are handled by the Registrar's Office and should be declared on eService.
- For ACORN absence declarations, the date you declare the absence is required to fall within the seven-day declaration period (i.e.) the absence cannot be submitted proactively or retroactively.
- 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](#).
- If you are unable to submit your request within the specified number of business days, you must still email your instructor within that window to explain the nature of the delay. Exceptions to the deadlines are made only under exceptional circumstances.
- Multiple assignments due on the same day are not considered academic conflicts. Students are expected to manage their time effectively to meet assignment deadlines.
- Back-to-back tests/quizzes are not considered academic 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.

Next Steps:

After submitting your documentation, you will receive a response from your instructor or TA. The course instructor reserves the right to decide what accommodations 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.

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.** Examples: If you were granted an extension for a paper but are still unable to meet the new deadline, or if you miss a make-up term

test, you must submit *another* MTW form and supply documentation according to the "subsequent absences" column in the chart above. *Note: In the case of a missed make-up test, an opportunity to write a second make-up test may not necessarily be provided.

The link to the online form to submit missed term work accommodation requests in **PSYC52** is here:
 https://utorontopsych.az1.qualtrics.com/jfe/form/SV_4PLAW4v2JiPDsV0

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 it is necessary to communicate with the instructor as early as possible to confirm that an academic conflict exists for which you can ask for accommodation. E.g., you would get accommodation if you had two officially scheduled midterms at the same time (say, one at UTSC and another one on the St. George campus). But if you have a quiz or a tutorial at the time of a mid-term then the mid-term takes precedence. Here is what you need to do:
1. As soon as possible 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 <u>not</u> considered conflicts. Students are expected to manage their time effectively to meet assignment deadlines.*
- *Back-to-back tests/quizzes are <u>not</u> 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.

XIV) 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

XIV) 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.

XV) 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

XVI) Recording of Classroom Material by Students

Recording or photographing any aspect of a university course - lecture, tutorial, seminar, lab, studio, practice session, field trip etc. – without prior approval of all involved and with written approval from the instructor is not permitted.