

# PSY290H5F – Introduction to Physiological Psychology

Monday/Wednesday 9:00am – 12:00pm

Room Location: IB235 (Instructional Building)

## Contact Information

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Office Hours:  
Wednesday 12-1pm

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## Course Description

The human brain is made up of billions of cells and trillions of connections that give rise to our ability to perceive, act, think, and learn. Neuroscience, the scientific exploration of the brain, is beginning to unravel how this amazing structure works. In this course, you will learn the fundamental anatomical organization and physiological properties of the brain. You will develop a greater understanding of the organization of major features of the brain, how neurons communicate, perceive, and learn.

## LEARNING OBJECTIVES

*By the end of this course, students should be able to;*

- **Identify** and **distinguish** anatomical, cellular, and functional features of the brain.
- **Explain** how neurons propagate signals and communicate to other neurons.
- **Describe** the process of development
- **Explain** the neurobiological basis of learning and memory.
- **Analyze** how neuroscience findings are interpreted and communicated to broad audiences.
- Use scientific sources to critically **evaluate** neuroscience claims
- **Connect** foundational principles of neuroscience to modern-day, real-world, applications.

## CLASS FORMAT

Classes will consist of two 3-hour lectures each week. Please plan to attend lectures. Lecture slides will be posted on Portal before class. Recordings of may be posted after lecture. **PLEASE NOTE:**

- *Simply reviewing the posted lecture notes **will not** provide you with all the details discussed in lecture and more importantly; a contextual framework of the material that we are learning about.*
- *Lectures will be recorded for your benefit. However, **do not** rely upon recordings as your main point of contact with the course, or to supplement your attendance. In some unfortunate instances, lecture recordings will fail due to software or user error. As your instructor, I simply cannot guarantee that lecture recordings will be provided each week.*

## Reading Material

**The Mind's Machine:** Foundations of Brain and Behavior by Watson & Breedlove, third edition, 2018, OUP. ISBN: 9781605357300. <https://oup-arc.com/access/watson3e>

The text is available in **digital format** for purchase or 6-month subscription access.

<https://www.vitalsource.com/textbooks?utf8=✓&sort=&term=mind%27s+machine>

**Readings:** Students are encouraged to use the assigned readings to facilitate and extend knowledge acquired in class. Pay close (but not exclusive) attention to the material that overlaps with the lecture material. **PLEASE NOTE: TESTS WILL INCLUDE MATERIAL PRESENTED FROM BOTH LECTURE AND ASSIGNED READINGS.**

## Course Evaluation

### Tests and Exams (100%)

Term Test - 40% (WEDNESDAY MAY 23<sup>rd</sup>)

Final Exam - 60%

**Term test and final exam** will be based on the material from the textbook, lectures and additional reading (if they are assigned). The term test and the final exam will consist of multiple-choice questions, shorter and longer questions as well as diagrams requiring you to label parts of the brain (based on lectures and textbook). The shorter and longer questions will require students to recite information but also integrate knowledge analytically. **The final exam WILL BE CUMULATIVE.**

### Bonus (5% )

#### **'Course Engagement Credit' (CEC)**

Students can receive bonus credit for participating in course related activities. The list below outlines different ways that YOU can participate you earn course engagement credit. Students can select which activities they choose to contribute to (or not) up to a maximum of 5% towards your final grade! You can participate in any and all categories and partial contributions from each category will be added up at the end of term.

**\*Course Engagement Credit (CEC) must be completed by the last day of classes\*.**

### **Ways to Participate**

#### **1. (CEC #1) Participate in our weekly "IN-CLASS" questions = 5%**

*Please note: A purchase of Top Hat software that is included with the text is required to participate in these activities.*

Answer questions during class and earn credit for doing so! Credit is assigned for participation, not "correct-ness" of each response. There will be eleven classes with Top Hat activities over the course of the term. Credit will be assigned based attendance and participation (**NOT** the number of questions in each class, or by the 'correctness' of responses provided. You can earn participation credit by responding to at least one question per class.). Students must be in attendance during the lecture to participate in Top Hat activities.

- Participation in 7-9 classes will be given 5% credit.
- Participation in 5-6 classes will be given 3% credit.
- Participation in 4 classes will be given 1% credit.
- Participation in 3 or fewer classes will not receive in-class participation credit.

To join TopHat, visit the following page: <https://app.tophat.com/register/student/>  
Psy290 course code to join: **454704**

2. **(CEC#2) Help-a-Peer (1% each, to a maximum of 5% over the term).**  
Students who provide an informative, original answer on the Quercus discussion forum in response to another student's question regarding course material will earn credit for their response. An informative answer is one that correctly and articulately explains a conceptually challenging topic. The answer is original if no similar answer has been provided. Original and informative responses to question will receive 1% toward "Help-a-Peer" CEC.
3. **(CEC#3) Neuron participation 'easter egg' (2%)**  
Thank you for reviewing the course syllabus! To receive an additional 1% CEC towards your lowest test score, please email me one (1) of Santiago Ramón y Cajal's drawings of neurons by the start of third lecture. In your reply (and to earn 2% credit), please name and describe the function of at least one kind of neuron depicted in the image.

## Course Webpage

The website associated with this course is accessible via <http://q.utoronto.ca>

**Note:** You don't need to create a new login for Canvas; it already knows who you are. You just need your UTORid and password. This is the same login that gets you onto the wireless network with your laptop, and the same one that you use to check your email. If you're confused about your UTORid or don't remember your password, go to: <https://www.utorid.utoronto.ca/>

In order to access course material, monitor course information, and view your grades you must log into Canvas. If you have any general questions regarding Canvas, please visit the following help site:

<https://library.utm.utoronto.ca/faculty/canvas>

## IMPORTANT COURSE POLICIES \*\*PLEASE READ\*\*

### Missed Test Special Consideration Request Process

Students who miss a test due to circumstances beyond their control (e.g. illness or an accident) can request that the Department grant them special consideration. Students must present their case to the Department (NOT the Instructor) by submitting a request via the online Special Consideration Request form at: <https://utmapp.utm.utoronto.ca/SpecialRequest>.

Students are to submit original supporting documentation (e.g., medical certificates, Verification of Extenuating Circumstances, etc.) to the Psychology Academic Counselor or drop it in the drop box located outside the Psychology office, Deerfield Hall, 4th Floor. Students have up-to one week from the date of the missed test to submit request. Late submissions will NOT be considered without a letter of explanation specifying and documenting the reasons for the lateness.

Medical certificates or physician's notes must be completed by the Physician and MUST include the statement "This Student [name] was unable to write the test on [date(s)] for medical reasons". This documentation must show that the physician was consulted within one the day of the missed term test. A statement merely acknowledging a report of illness made by the student to the physician is NOT acceptable. For further information on this procedure please see: <http://www.utm.utoronto.ca/psychology/undergraduate-studies/missed-testslate-submissions>

If you missed your test/assignment deadline for a reason connected to your registered disability, please be advised that the department will accept documentation supplied by the UTM AccessAbility Resource Centre.

**IMPORTANT:** The Department of Psychology verifies the authenticity of medical certificates by contacting medical offices. Students are NOT to make any changes or alteration to completed medical certificates. Students who submit forged or altered documentation are subject to severe academic penalties.

If your request is approved by the department, a make-up test will be offered. You will receive an email when a make-up date has been arranged. The department will try to give 2-3 days notice of make-up date, however this is sometimes not possible. **Be prepared for the make-up.**

## **Extension of Time Special Consideration Request Process**

Students who seek to be granted more time to complete their term work beyond the due date without penalty, owing to circumstances beyond their control (e.g., illness, or an accident), must do so by submitting a request directly to the Instructor for the period up to and including the last day of the term. The decision as to whether or not to apply a penalty for the specified period rests with the Instructor.

Students who seek to be granted more time to complete term work beyond the last day of the term must submit their request directly to the Department. This request covers the period following the last day of classes and ends the last day of the exam period. This is done by submitting a request via the online Special Consideration Request form at <https://utmapp.utm.utoronto.ca/SpecialRequest>.

**You are advised to seek advising by the departmental Undergraduate Counsellor prior to the deadline.**

Original supporting documentation (e.g., medical certificates, accident reports, etc.) must be submitted to the Psychology Academic Counselor or dropped off in the drop box located outside the Psychology office Deerfield Hall, 4th Floor. Students are expected to submit requests to the Department before the last day of the term, unless demonstrably serious reasons prevent them from doing so. In the event of an illness, medical certificates or doctor's notes must confirm that student was ill on the due date of the assignment (for a one-day extension). For a longer extension, documentation must specify the full duration during which academic work could not be carried out.

For extensions of time beyond the examination period you must submit a petition through the Office of the Registrar. <http://www.utm.utoronto.ca/registrar/current-students/petitions> .

## **Penalties for Lateness**

A penalty of 10% per calendar day (i.e., including week-ends and holidays, during which students are not able to submit term work) up to and including the last day of classes, will be applied by the Instructor. After the last day of classes, the penalty of 10% per calendar day will be applied by the Undergraduate Counsellor on behalf of the Department. No penalty will be assigned if request for special consideration, described above, was successful.

## **Academic Guidelines**

It is your responsibility to ensure that you have met all prerequisites listed in the UTM Calendar for this course. If you lack any prerequisites you WILL BE REMOVED from the course up until the last day to add a course. Further information about academic regulations, course withdrawal dates and credits can be found in the University of Toronto Mississauga Calendar at: <http://www.erin.utoronto.ca/regcal/>.

You are encouraged to read this material. If you run into trouble and need advice about studying, preparing for exams, note taking or time management, free workshops and advice are available from the Robert Gillespie Academic Skills Centre at 905-828-5406.

## **AccessAbility Services**

Students requiring academic accommodations for learning, physical, sensory, or mental health disabilities or medical conditions should contact the AccessAbility Office (2037B Davis Building), 905-828-3847. <http://www.utm.utoronto.ca/accessability/>

## **Academic Honesty and Plagiarism**

Honesty and fairness are considered fundamental to the university's mission, and, as a result, all those who violate those principles are dealt with as if they were damaging the integrity of the university itself. When students are suspected of

cheating or a similar academic offence, they are typically surprised at how formally and seriously the matter is dealt with -- and how severe the consequences can be if it is determined that cheating did occur. The University of Toronto treats cases of cheating and plagiarism very seriously. Please take the time to review the Academic Integrity website: <http://www.utm.utoronto.ca/academic-integrity/students>.

- Common trends in academic offences:
- Plagiarizing/concocted references
- Collaboration/unauthorized assistance
- Purchasing work
- Recycling work - "double-dipping"
- Resubmitting of altered work for re-grading
- Electronic devices (cell phones) or any unauthorized aids
- Altering medical certificates and UofT documents

From the Code of Behaviour on Academic Matters: "It shall be an offence for a student to knowingly: represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e. to commit plagiarism. Wherever in the Code an offence is described as depending on "knowing", the offence shall likewise be deemed to have been committed if the person ought reasonably to have known." All students must refer to this website to obtain information on what constitutes plagiarism. <http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize>.

If questions arise after reading the material on the website, consult your instructor. **Plagiarism will not be tolerated.**

## Academic Rights

You, as a student at UTM, have the right to:

- Receive a syllabus by the first day of class.
- Rely upon a syllabus once a course is started. An instructor may only change marks' assignments by following the University Assessment and Grading Practices Policy provision 1.3.
- Refuse to use turnitin.com (you must be offered an alternative form of submission).
- Have access to your instructor for consultation during a course or follow up with the department chair if the instructor is unavailable.
- Ask the person who marked your term work for a re-evaluation if you feel it was not fairly graded. You have up to one month from the date of return of the item to inquire about the mark. If you are not satisfied with a re-evaluation, you may appeal to the instructor in charge of the course if the instructor did not mark the work. If your work is remarked, you must accept the resulting mark. You may only appeal a mark beyond the instructor if the term work was worth at least 20% of the course mark.
- Receive at least one significant mark (15% for H courses, 25% for Y courses) before the last day you can drop a course for H courses, and the last day of classes in the first week of January for Y courses taught in the Fall/Winter terms.
- Submit handwritten essays so long as they are neatly written.
- Have no assignment worth 100% of your final grade.
- Not have a term test worth 25% or more in the last two weeks of class.
- Retain intellectual property rights to your research.
- Receive all your assignments once graded.
- View your final exams. To see a final exam, you must submit an online Exam Reproduction Request within 6 months of the exam. There is a small non-refundable fee.
- Privacy of your final grades.
- Arrange for representation from Downtown Legal Services (DLS), a representative from the UTM Students' Union (UTMSU), and/or other forms of support if you are charged with an academic offence.

If questions arise after reading the material on the website, consult your instructor.

## Equity Statement

The University of Toronto is committed to equity and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect. As a course instructor, I will neither condone nor tolerate behaviour that undermines the dignity or self-esteem of any individual in this course and wish to be alerted to any attempt to create an intimidating or hostile environment. It is our collective responsibility to create a space that is inclusive and welcomes discussion. Discrimination, harassment and hate speech will not be tolerated. If you have any questions, comments, or concerns you may contact the UTM Equity and Diversity officer at [edo.utm@utoronto.ca](mailto:edo.utm@utoronto.ca) or the University of Toronto Mississauga Students' Union Vice President Equity at [vpequity@utmsu.ca](mailto:vpequity@utmsu.ca).

**Please note that this outline is subject to change depending on the needs of the class (we may need additional time to cover a topic). Any changes to the syllabus will be announced in class one week before. However, the assignment and test dates are fixed.**

### Course Outline

Class	Topic	Notes
1 (May 6)	Introduction, to Brain and Behaviour	Chapter 1 (read pages 2-10)
2 (May 8)	Cells and Structure: The Anatomy of the Nervous System	Chapter 2 (read 30, 34-43)
3 (May 13)	Micro Anatomy and Neural Transmission	Chapter 2 and 3 (read 22-29, 52-54)
4 (May 15)	Graded Potentials and Action Potentials	Chapter 3 (read 55-67)
5 (May 20)		<i>(no class on MONDAY May20 Victoria Day)</i>
6 (May 22)	<b>Mid-Term Test</b>	
7 (May 27)	The Chemistry of Behaviour	Chapter 4 (read 66-69, 78-87)
8 (May 29)	Sensory Systems	Chapter 5 (read 110-124)
9 (June 3)	Neurodevelopment	Chapter 13 (read 393-401)
10 (June 5)	Learning	Chapter 13 (read 383-393)
11 (June10)	Memory	Chapter 13 (read 368-375)
12	<b>Final Exam:</b> It is the student's responsibility to be available for the entire exam period.	