



BIOLOGY 407 FALL 2025

Neurophysiology

LECTURE AND LAB SYLLABUS

Territorial acknowledgement: The University of Regina is situated on the territories of the nêhiyawak, Anihšînāpēk, Dakota, Lakota, and Nakoda, and the homeland of the Métis/Michif Nation. The Regina campus is on Treaty 4 lands, and Saskatoon classes are on Treaty 6 lands.

Lectures: in-person lectures

Instructor: Dr. Josef Buttigieg (a.k.a Dr. B)

Office: RIC 218

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Labs: in-person

Instructor: Dr. Mel Hart

Office: LB 236

email: mel.hart@uregina.ca

Lecture time and location: CL 317. MWF: 12:30-1:20 PM

Final Exam: Dec. 17. 9:00 AM-12:00 PM. Location TBA

Labs: Labs will start September 8th. Please check the lab schedule.

Office hours: Both Instructors have an open-door policy, which means if their office door is open, you're welcome to visit (please knock first). You may also email to arrange a time to meet. For the lab, please email the Lab Instructor directly, from your URegina email account; **do not send messages or emails about the lab through UR Courses** – messages sent through that system will not be answered.

Course Description: This is an introductory course to neurophysiology and behavioural neurosciences. You will be introduced to the development and structure of the central nervous system in vertebrates and invertebrates, and learn the biology behind neuronal communication, memory encoding, and sensory networks.

Prerequisites: BIOL 288 or both PSYC 102 and 255.

Learning outcomes: After completion of this course, students should be able to describe the overall anatomy of the brain, and how the brain develops, signals are transmitted, pain detected, drugs (prescription and illegal) affect the brain, and movement and vision work.

Required Resources

The course uses a free, online textbook: [Neuroscience Online](#)

Computer and internet access, in case remote learning is needed.

Turnitin account (free to register)
Lab coat and safety glasses

Readings: In this course, you are expected to go beyond the memorization of facts to display an understanding of the material. Some students find this challenging. You are strongly encouraged to read the relevant chapters on a particular topic before and after the lecture devoted to that topic. The initial reading will help you to follow along during the lecture and to identify those areas in which you are having difficulty understanding. The follow-up reading(s) will help you to recall, synthesize and consolidate the material that was presented.

Evaluation

Class: Assignments:	15% (3 assignments: due dates in syllabus)
Class: Midterm 1:	15% -- Wednesday, October 8
Class: Midterm 2:	15% -- Wednesday, November 19
Class: Final exam:	30%
Lab: Policy document	0 (-2% if late)
Lab: PBL Assignment	20%
Lab: Participation	5%

Policies on late assignments and missed exams:

Assignments. Late assignments earn a 50% penalty per day late, with the late penalty applied immediately after the due time has passed. Homework problems will be posted as PDF files on UR Courses.

Exams. If you miss an exam you will need to have a valid, documentable excuse. Examples of legitimate excuses include sickness, religious holiday, and conflict with another UofR academic or sporting event. Except for the final exam, I do not hold make up exams. The marks for the missed exam(s) will be distributed accordingly upon receipt of valid proof. Exams are in-person, written exams.

Attendance policies:

Lectures. It is important that you attend every class. You are responsible for all material presented in lecture. Class notes will be posted the day before the lecture. I tend to free flow my lectures, so additional notes will be presented in class. If you miss a class, it is your responsibility to obtain the notes on the material from a classmate. Students are encouraged to search the web for additional pictures and/or pertinent information. If you find something cool, please send Dr. B an email and, if appropriate, he will share with the class. Also, topics covered in class are at the discretion of the class. In other words, to an extent, the class can decide which topics to cover.

Labs. Attendance in labs is mandatory; you will earn a penalty to your lab participation grade for each session you miss or are late to joining (review sessions held during lab time are optional, and are exempt from the penalty). The lab activities build on material in lecture, and will be examined on the midterms and/or final. You are expected to come to lab prepared. This means reading through the lab handout, printing the lab handout and making any

necessary notes on it, and watching and earning 100% in all pre-lab videos and associated quizzes by the start of lab. Lack of preparedness (no lab coat, safety glasses, handout with notes, watching of pre-lab videos ahead of time, etc.) will earn you a penalty to your participation grade.

Cell phone use: Cell phone use is not permitted in lab or lecture. In lab, they present a hazard, and in lecture, they are a distraction to you and those around you. Repeated use of a cell phone in either setting could result in you not being permitted to write the final exam.

Laptop use: Personal laptops are only to be used for PBL-related work in the lab times open for work on the projects or after experiments are complete and the benchtop cleaned. Note taking on a laptop in lecture is welcome; however, students repeatedly found using their laptops for other purposes such as online shopping, chatting, watching movies, etc. that distract them and other students may result in being denied permission to write the final exam.

Review Sessions: The lab time the week of a midterm will be used as a question and answer session and to review course material presented in class. You will benefit greatly from these sessions by coming prepared with specific questions in mind, as the original lecture on a topic will not be repeated, and a formal review, organized by the instructor not created.

Contingency policy: In the unlikely event that classes need to be held remotely, the policy will be to use a zoom based format. Lectures will be recorded and posted on UR Courses using zoom and labs will be canceled. There may be a change to weighting of grades, if assignments or tests cannot be held. If there are midterms or final exams, yet to be held, these will be done remotely and use Proctor Track.

Academic integrity: Academic integrity requires students be honest. Assignments and exams are to help students learn; grades show how fully this goal is attained. Thus, all work and grades should result from a student's own understanding and effort.

Acts of academic misconduct violate academic integrity, and are considered serious offences by the University. Examples include, but are not limited to, cheating on tests or exams, plagiarizing, using platforms such as Chegg, Chat GPT, etc., copying from others, falsifying lab results, etc. Instances of academic misconduct will be reported to the Associate Dean Academic for investigation. Full details are provided in the [Undergraduate academic calendar](#), and the University has an Academic Integrity Hub that provides details to help students understand what academic integrity is: [Academic Integrity Hub – Academic Integrity at the University of Regina \(uregina.ca\)](#). Students are encouraged to understand your obligations as a student, as well as your rights.

For this class and lab, the instructors do not permit the use of generative artificial intelligence programs. These include, but are not limited to: Grammarly, ChatGPT, Gemini, Quillbot, Perplexity, Bing, and Microsoft Copilot. Use of these will be considered academic misconduct and reported to the Dean's office for investigation.

Accommodations: The Centre for Student Accessibility upholds the University's commitment to a diverse and inclusive learning environment by providing services and supports for students based on disability, religion, family status, and gender identity. Students who require these services are encouraged to contact the Centre for Student Accessibility to discuss the possibility of academic accommodations and other supports as early as possible. For further information, please email accessibility@uregina.ca.

The following is a tentative lab and lecture/exam schedule and can be subject to change*.

Week of	Topic	Items of note
Sept. 1 st	Nervous system anatomy	First class Sept. 3 rd
Sept. 8 th	Sept. 8 th - Lab 1: Lab overview, student photos, selection of PBL questions and groups, and sheep brain dissection. Cell electrical signaling.	Labs start this week. Lab policy document due to Turnitin by 2:00 PM Sept. 8 th PBL team contract due by 11:59 PM Sept. 8 th
Sept. 15 th	Lab open for PBL work and Dr. B available for questions.	Sept. 13 th – add/drop date
Sept. 22 nd	Sept. 22 nd - Lab 2: Squid and leech dissections. Neurotransmitter release.	
Sept. 29 th	Lab open for PBL work and Dr. B available for questions.	
Oct. 3 rd	No class	
Oct. 6 th	Oct. 6 th - Review time in lab – midterm 1 Oct. 8 th	Midterm 1: Oct. 8 th
Oct. 13 th	Thanksgiving – no lab or class on Oct. 13 th	
Oct. 20 th	Oct. 20 th – Lab 3: RoboRoach (run the cockroaches in class Oct. 22 nd). Nervous system development.	RoboRoach in class
Oct. 27 th	Lab open for PBL work and Dr. B available for questions.	
Nov. 3 rd	Nov. 3 rd -- Lab 4: PBL presentations. Sensory input.	
Nov. 10 th	Reading break: no classes or labs this week	
Nov. 17 th	Nov. 17 th – Review time in lab – midterm 2 Nov. 19 th Movement and balance.	Midterm 2: Nov. 19 th
Nov. 24 th	Nov. 24 th – Mystery lab. Memories and learning.	PBL papers due by 11:59 PM Nov. 24 th
Dec. 1 st	No labs this week. Dreams.	PBL team evaluations due by 2:30 PM Nov. 29 th

*Additional details about the labs are given on UR Courses.