

## COURSE SYLLABUS

- Course:** PNB 2XB3 (NEUROANATOMY & NEUROPHYSIOLOGY)
- Prerequisite(s):** Registration in an Honours Psychology, Neuroscience & Behaviour or Combined Honours Psychology program.
- Co-requisite(s):** PNB 2XT0 (PNB Tutorial).
- Antirequisite(s):** LIFE SCI 2C03, PSYCH 2D03, PSYCH 2F03, PSYCH 2N03, PSYCH 2NF3.  
*This course is not open to students with credit or registration in ISCI 2A18.*
- Instructor:** Dr. Paul Faure      Department of Psychology, Neuroscience & Behaviour, PC-111  
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- Course TAs:** Jonathan Tong      PC-330; Phone: ext. 28624; email: tongj@mcmaster.ca  
Ryan Peters      PC-330; Phone: ext. 28624; email: petersrm@mcmaster.ca  
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Roberto Valdizon      PC-151; Phone: ext. 26042; email: valdizr@mcmaster.ca
- Office Hours:** By appointment. The best way to contact us is via email.
- Location:** Lectures are held on Monday, Wednesday and Friday in MDCL-1105.  
Monday and Wednesday lectures are from 0830-0920 hrs; on Fridays, 1030-1120 hrs.  
PNB 2XT0 (PNB Tutorial) is held on Tuesday from 0930-1020 hrs in MDCL-1105.
- Textbook:** Purves D, Augustine GJ, Fitzpatrick D, Hall WC, LaMantia A-S, White LE (2012)  
Neuroscience. Sinauer Associates (5th Edition), Sunderland, MA, USA.
- Logistics:** McMaster University reserves the right to change course dates, assignments and their grading weights, and deadlines at the discretion of the instructor and in case of an emergency, labour disruption, civil unrest/disobedience, etc.
- Overview:** Following an introduction to nervous system organization, this course describes the electrical and chemical properties of the fundamental unit of the nervous system—the neuron—and how neurons communicate with one another. It then surveys the physiology and functional anatomy of touch, vision, audition, vestibular sensation, olfaction and taste, movement, and memory. Both the normal functioning and particular pathologies of these systems will be discussed. The course also surveys important neuroscience investigative techniques.
- Website:** Check <<http://www.science.mcmaster.ca/pnb/faure/2xb3>> for info and updates.

The following policies are necessary in order to be fair and equitable to all students.

**Audio and Video Recordings.** The recording of lectures and/or exams (audio or video) is prohibited.

**Attendance.** You are expected to attend all lectures, the PNB Tutorial and exams. If you are late, please do not disrupt and/or disturb your fellow students who arrived in a timelier manner and are already seated and working. Talking during lecture or tutorials, and related disturbing behaviour, is inconsiderate. Do not schedule holiday travel during lectures, tutorials or exams.

**Lectures.** You are responsible for all material presented in lecture. Tutorials may be used to schedule exams.

**Calculators.** The standard / officially approved calculator for McMaster University is the Casio fx-991. This model is available at Titles Bookstore and is the only calculator permitted for exams and assignments.

**Readings.** In this course you are expected to go beyond the memorization of facts to display an understanding of the material. Some students will find this difficult. You are strongly encouraged to read the relevant text chapters on a particular topic before and after the lecture/tutorial devoted to that topic. The

initial reading will help you to follow along during the lecture/tutorial 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.

**Notes.** Homework problems will be posted as PDF files on the course website. Psych 2XB3 has no course packet because it is absolutely essential that you attend class and develop proper note-taking skills. If you miss a lecture, it is your responsibility to obtain the notes on this material from a classmate. I advise against trying to take verbatim notes during lectures because it will be difficult for you to keep up and to think critically about what is being discussed. Moreover, most of the material discussed in class can also be found in the textbook or by searching the web, albeit presented from a different perspective. Slides shown in class are not posted to the course website because of copyright restrictions. To consolidate your knowledge, students are encouraged to search the web for additional pictures and/or pertinent information.

**Grading.** Your performance in the course will be evaluated with three examinations and a number of homework assignments. The first two exams will be Mid-Term Examinations of one-hour duration each and will be held in-class. Each Mid-Term will count for 20% of your Final Grade. The third exam will be a Final Examination of three-hours duration and will be scheduled by the Office of the Registrar. The Final Exam is cumulative and will count for 40% of your Final Grade. Books, notes, personal electronic devices, etc. are prohibited during all examinations; all you will need is the McMaster standard / officially approved calculator and a supply of pencils, erasers and, of course, adequate knowledge of the subject matter being tested. Homework Assignments are worth 20% of your Final Grade and instructions for these assignment will be posted on the course website.

**Makeup Exams.** If you miss an exam you will need to have a valid excuse AND be able to document this excuse in order to qualify for a makeup examination. Examples of legitimate excuses include sickness, religious holiday, and conflict with another M.U. academic or sporting event. If you simply skip an exam, hoping that an eventual excuse will become acceptable, then you will receive a zero for that exam. PNB 2XB3 does not subscribe to proposals for “extra work” in mitigation of exam delinquencies. Except in the case of illness, **a makeup exam will NOT be given unless arrangements are made with the course Instructor or TAs in advance of the regularly scheduled examination.** In the case of minor medical illness lasting fewer than five days, you must report the illness using the McMaster Student Absence Form (MSAF) and contact the course instructor and/or TAs within 2 working days of the missed exam in order to qualify for a makeup exam. Note that the MSAF may only be used once per term and may NOT be used for the final exam. In the case of major medical illness, you must submit a medical note to your Faculty office within 5 working days of the missed exam in order to qualify for a makeup exam.

**Review Sessions.** The period prior to each Mid-Term Examination 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. Do not expect the course Instructor or TAs to repeat the original lecture on a particular topic.

**Seeking Help.** Please ask the course Instructor or TAs for help at any time if you need it. As a learner, it is your responsibility to recognize when you need help and then ask for it.

**Academic Dishonesty.** Academic dishonesty consists of misrepresentation by deception or by other fraudulent means, and can result in serious consequences for a student such as the grade of zero on an exam or assignment, loss of course credit with a notation on the student’s transcript that reads “*Grade of F assigned for academic dishonesty*”, and/or suspension or expulsion from McMaster University. It is your responsibility to understand what constitutes academic dishonesty. For example, plagiarism, improper collaboration, copying and/or use of unauthorized aids in tests and examinations (i.e. cheating) are just a few forms of academic dishonesty. For more information on academic integrity and the various kinds of academic dishonesty, please refer to McMaster’s Academic Integrity Policy located at <http://www.mcmaster.ca/academicintegrity>.

**Course Calendar** (subject to revision) & **Assigned Readings** [P### = pages from Purves et al. 2012]

- SEPT F07: Welcome and Introduction to Nervous System [P01-21]  
M10: Organization of Nervous System [P01-21; 588-591]  
W12: Neuroanatomy & Cortical Structure [P25-40; 588-591]  
F14: Resting Neuron & Neural Signaling [P25-40]  
M17: Action Potential [P41-55]  
W19: Voltage-Dependent Membrane Permeability [P41-55]  
F21: Ion Channels & Transporters [P57-76]  
M24: Synaptic Transmission I [P77-107]  
W26: Synaptic Transmission II [P77-107]  
F28: Neurotransmitters & Receptors I [P109-140]
- OCT M01: Neurotransmitters & Receptors II [P109-140]  
W03: Review Session  
F05: **Mid-Term Examination I**  
M08: *No Class (Thanksgiving Day, Canada)*  
W10: Somatosensory Systems I: Anatomy of Touch [P187-208]  
F12: Somatosensory Systems II: Proprioception [P209-227]  
M15: Somatosensory Systems III: Pain [P209-227] (*New Moon*)  
W17: Visual System I: Anatomy of Eye [P229-256]  
F19: Visual System II: Retina [P257-276]  
M22: Visual System III: Central Visual Pathways [P257-276]  
W24: Auditory System I: Anatomy of Ear [P277-302]  
F26: Auditory System II: Peripheral Hearing [P277-302]  
M29: Auditory System III: Central Auditory Pathways [P277-302] (*Full Moon*)  
W31: Vestibular System I [P303-320] (*Halloween*)
- NOV F02: Vestibular System II [P303-320]  
M05: Olfaction & Taste (*time permitting*) [P321-350]  
W07: Motor Systems I: Lower Motor Control [P351-374]  
F09: Review Session  
M12: **Mid-Term Examination II**  
W14: Motor Systems II: Upper Motor Control [P375-398]  
F16: Synaptic Plasticity I [P163-185]  
M19: Synaptic Plasticity II [P163-185]  
W21: Memory I [P695-716]  
F23: Memory II [P695-716]  
M26: Neuroscience Techniques I [P16-21, 42, 59-63, 149-150, 264, 632-634]  
W28: Neuroscience Techniques II [P16-21, 42, 59-63, 149-150, 264, 632-635] (*Full Moon*)  
F30: Neuroscience Techniques III [P16-21, 42, 59-63, 149-150, 264, 632-635]
- DEC M03: Course Wrap-Up & Review

**Important Dates**

- 14 September 2012 (Friday): Last day for registration and adding or dropping courses  
05 October 2012 (Friday): **Mid-Term Examination I**  
08 October 2012 (Monday): Thanksgiving Day, Canada (no class)  
09 November 2012 (Friday): Last Day for canceling courses without failure by default  
12 November 2012 (Monday): **Mid-Term Examination II**  
05-19 December 2012: **Final Examination** (date & time scheduled by the Office of the Registrar)