# NEURAL BASIS OF BEHAVIOUR

**PSYC 3250 3.0 Section N**

Winter Term 2014-15
ROOM Vari Hall D, Friday 11:30-14:30
Faculty of Health, York University

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## Course Director


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**Faculty Secretary: Sabrina Iantorno 282 BSB, 416.736.2100 x66268**


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## Course Description

This course presents the fundamentals of the neuroscience of behaviour. Special importance is placed on the information-processing properties of the nervous system in order to provide a uniform framework for the understanding of such topics as sensory perception, attention, movement, emotion and language with experimental examples from the lab and clinical studies\research illustrating the effects of impaired brain function. Some questions we will attempt to address are: Why can you see dim stars in your peripheral vision but not be looking at it?; Why does a hair in your mouth feel so big; whereas you can not feel the same hair if it was on your back? How does suppression mechanisms in frontal cortex modulate sensory signals? How does plasticity occur in the brain? Can music and dance help brain function? What is neurorehabilitation?

## Learning Objectives

1. This course presents the fundamentals of the physiology of behaviour. At conclusion of the course you will understand the brain's input and output.
2. Understanding how we process sensory information from the world
3. Understand how motor functions are accomplished in our brain
4. The effect of emotion on neural processing
5. Get exposure to topics within Society for Neuroscience (www.sfn.org)

## Prerequisites

1. AK/AS/HH/SC/PSYC1010 6.0 or AK/PSYC2410 6.0 *with a* ***minimum grade of C.***
2. AK/AS/HH/SC/PSYC 2240 3.0 or AK/PSYC 3145 3.0. [i.e. Biological Basis of Behaviour].

## Course Format

Lectures/discussion/movies with textbook reading assignments and use of podcasts and internet resources.

## Readings

The course will primarily use Neil R. Carlson's Physiology of Behavior (11th Edition, Allyn & Bacon). The text will be supplemented with internet resources, movies and lectures. I highly recommend that you make use of the online resources.

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## Final mark will be based on:

**Quizzes** – During *some* classes there will be a 5-10 minute quiz. If you are late for class there are no make up quizzes. If you miss a quiz there are no makeup quizzes. The quiz will be on a topic from the current lecture and/or previous material you should know and understand. Any missed quiz you WILL need to give a doctor's note to my faculty secretary (see above), otherwise you receive 0 for that quiz. e.g. Hypothetical student's quiz calculation, if you missed 3 of 5 quizzes during the term. You only dropped 1 doctor's note to our Faculty Secretary (rm282 BSB) within 8 days of the missed quiz. Thus, one zero mark is replaced with a note and you completed the 2 quizzes with 80% and 80% we will calculate your mark as follows (0+0+note+80+80) thus you have 4 available marks = = 40.0%. — 15%

DO NOT HAND ME A DOCTORS NOTE AFTER CLASS – I WILL LOSE IT. DO NOT EMAIL ME A NOTE SINCE I WILL DELETE IT. FOLLOW THE ABOVE INSTRUCTIONS.

**Midterm exam 1** in class [WEEK 5] (pgs 7-8, Chpts 2,3,4). 2hr exam followed by lecture - 80% Multiple choice and 20% short answer (space of ~5 lines). *There will be no makeup exams for Midterm exam 1. If you miss a midterm your final exam will be worth 27% more (no exceptions).* If you miss the exam no doctors note is needed — 27%

**Midterm exam 2** in class [WEEK 8](Chpts 5,6,7) 2hr exam followed by lecture - 80% Multiple choice and 20% short answer (space of 5 lines). *There will be no makeup exams for Midterm exam 2. If you miss the midterm your final exam will be worth 33% more (no exceptions).* If you miss the exam no doctors note is needed — 33%

**Last Exam** in class [WEEK 12] (pgs 7-8, Chpts 2,3,4,5,6,7,8,11,14) 3hr exam on all material in all lectures and course readings). Please note: I will probably not answer e-mails regarding class material in the last 5 days before the exam so please prepare them ahead of time in my office hours after class. If you miss the last exam yes you need a doctors note this time. Your makeup exam will have no multiple choice questions and will be all essay and short answer questions. — 20%

**Participation** in class, online discussion in moodle, completion of online tutorial on academic integrity (see below for link). — 5%

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## E-mail etiquette

We will respond to e-mails during Monday to Friday within 99 hrs.
During the weekend e-mails will not be read.

## Academic Integrity

Please go to the website and complete the tutorial at York University (http://www.yorku.ca/academicintegrity), to read the section 'For Students,' and to complete the Academic Integrity Tutorial: (http://www.yorku.ca/tutorial/academic_integrity/).
Please view the university policy on plagiarism and academic dishonesty at http://www.yorku.ca/secretariat/policies/document.php?document=69#_Toc89156096

Ideally, when you were in first year you should have been required to complete the Academic Integrity Tutorial as part of your course. If you have it please e-mail the certificate of completion to the teaching assistant debora09@yorku.ca and neural@yorku.ca at your earliest convenience.

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Dr. Joseph DeSouza, neural@yorku.ca

| **Date** | **Topic** | **Reading** |
|---|---|---|
| Week 1<br>Jan 9 | Introductions<br>Neglect<br>Neurons | <br>Chpt. 1 (pgs 7-8)<br>Chpt. 2 |
| Week 2<br>Jan 16 | Review more neural topics<br>Neuroanatomy<br>Psychopharmacology (if time) | Chpt. 2<br>Chpt. 3<br>Chpt. 4 |
| Week 3<br>Jan 23 | Neuroanatomy review<br>Psychopharmacology | Chpt. 3<br>Chpt. 4 |
| Week 4<br>Jan 30 | Psychopharmacology | Chpt. 4 |
| Week 5<br>Feb 6 | **2hr Term Test** | **pg7-8, Chpts 2,3,4** |
| Week 6<br>Feb 13 | Research Methods – Neuroimaging<br>Visual System<br>Perception and Action | Chpt. 5<br>Chpt. 6 |
| CO-CURRICULAR WEEK | | |
| Week 7<br>Feb 27 | Auditory, Somatosensory, Vestibular and the rest of the senses | Chpt. 7 |
| Week 8<br>Mar 6 | **2hr Term Test**<br><br>Motor control lecture | **Chpts 5,6,7**<br><br>Chpt. 8 |
| Week 9<br>Mar 13 | Motor control (con't) | Chpt. 8 |
| Week 10<br>Mar 20 | Emotion | Chpt. 11 |
| Week 11<br>Mar 27 | Communication Disorders and everything else | Chpt. 14 |
| Week 12<br>**MONDAY**<br>April 6th | **Last exam** | **Chpts. 1(pgs7-8) 2,3,4,5,6,7,8,11 & 14** |