# NEUR\*2000, Course Outline: Fall 2017

## General Information

**Course Title:** Introduction to Neuroscience

**Course Description:**

This course offers an introduction to the mammalian nervous system, with emphasis on the structure and function of the human brain. General principles of the function and organization of nervous systems will be discussed, providing both an overview of the subject and a foundation for advanced courses. Topics will include the physical and chemical bases for action potentials, synaptic transmission, and sensory transduction; anatomy; development; sensory and motor pathways; and the neuroscience of brain diseases.

Introduction to Neuroscience is designed for any student who has an interest in the range of disciplines we collectively call Neuroscience.

Topics covered in the course include: Introduction to the nervous system; human neuroanatomy; brain development; electrical signals of nerve cells; synaptic transmission; neurotransmitters and their receptors; sensory and motor systems.

**Credit Weight:** 0.5

**Academic Department (or campus):** Psychology

**Semester Offering:** F17

**Class Schedule and Location:** Tuesdays 10:00 AM - 11:20 AM, Thursdays 10:00 AM - 11:20 AM; RICH 2520

## Instructor Information

Instructor Name: Dr. Richard D. McCurdy

Instructor Email: mccurdy@uoguelph.ca

Office location: OVC Building 3 Rm 1672; Office hours: Wednesdays 2:00 PM - 4:00 PM.

## GTA Information

GTA Name: Nouran Sakr

GTA Email: nsakr@uoguelph.ca

GTA office location: BWH 217-227; Office hours: Thurs 12:00 – 1:00 PM

GTA Name: Anne-Marie Levy

GTA Email: alevy01@uoguelph.ca

GTA office location: BWH 211; Office hours: Weds 9:30 – 10:30 AM

GTA Name: Cassidy Wideman

GTA Email: widemanc@mail.uoguelph.ca

GTA office location: BWH 211; Office hours: Tues 9:00 – 10:00 AM

Other office hours by appointment only.

## Course Content

### Specific Learning Outcomes:

1)   Describe and remember the core principles of neurobiology, neurochemistry and neuroanatomy in relation to the central and peripheral nervous systems.  
2)   Recognize and identify the properties of cells that make up the nervous system including the propagation of electrical signals used for cellular communication.  
3)   Relate the properties of individual cells to their function in organized neural circuits and systems.  
4)   Demonstrate how the interaction of cells and neural circuits leads to higher level activities such as cognition and behavior.  
5)   Evaluate and discuss core principles of neurobiology related to key evidence from the primary research literature.

### Lecture Content:

| **Lecture Unit title** | **Unit Number** | **Textbook chapter (pages)** |
| --- | --- | --- |
| Introduction to the nervous system | 1 | 1 & Appendix |
| Human Neuroanatomy | 2 | Appendix, Chapter 26 pp. 587-591 |
| Brain Development | 3 | 22, 23 & 24 |
| Electrical signals of nerve cells | 4 | 2 & 3 |
| Synaptic Transmission | 5 | 4 & 5 |
| Neurotransmitters and their receptors | 6 | 6 & 7 |
| Review & Mid-term |  |  |
| Sensory Systems I | 7 | 9 & 10 |
| Sensory Systems II | 8 | 11 & 12 |
| Sensory Systems III | 9 | 13, 14 & 15 |
| Motor Systems I | 10 | 16 & 17 |
| Motor Systems II | 11 | 18 & 19 |

### Course Assignments and Tests:

| **Assignment or Test** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
| --- | --- | --- | --- |
| In Class Quizzes | September 21, 2017; October 19, 2017; November 16, 2017; November 30, 2017 | 5 % each (20% total) | 1,2&3 |
| Group Assignment | October 5, 2017 | 10% | 1,2,3 & 4 |
| Mid-Term Exam | October 26, 2017 | 25% | 1,2&3 |
| Term Paper | November 23, 2017 | 10% | 5 |
| Final Exam | December 12, 2017 | 35% | 1,2,3 & 4 |

### Final examination date and time: December 12, 2017; 2:30 PM - 4:30 PM

### Final exam weighting: 35%

## Course Resources

### Required Texts:

*Neuroscience* (5th Edition, 2012) Edited by Dale Purves, George J. Augustine, David Fitzpatrick, William C. Hall, Anthony-Samuel LaMantia, and Leonard E. White. Published by Sinauer Associates.

1 copy on 2-hour reserve.

### Recommended Texts:

Principles of Neural Science (5th Edition, 2013) Edited by Eric R. Kandel. Published by McGraw-Hill.

1 copy on 2-hour reserve.

### Other Resources:

The course outline, all PowerPoint lectures and in-class notes, diagrams etc (i.e. presented on doc camera) will be posted to CourseLink.

Videos of, and links to, supplementary information and websites for extracurricular learning /engagement will also be supplied on CourseLink.

Two other texts with related material that students may find useful:

1. Clinical Neuroantomy for Medical Students 3rd Edition (or newer) by Richard S. Snell, Little, Brown & Co. Publishers.
2. Correlative Neuroanatomy 21st Edition (or newer) by Jack deGroot, Appleton & Lange Publishers.

## Course Policies

### Grading Policies

Your final grade is determined by 4 in-class quizzes, 1 group project, 1 midterm examination, 1 individual paper and 1 final exam. The final exam is cumulative.

**Quizzes** (5% each – 20 % Total)

The quizzes are designed to help you stay on schedule, by reviewing and consolidating related lecture content. Each quiz will be administered in class at the start of the following Thursday lectures: **Quiz 1** - September 21, 2017; **Quiz 2** – October 19, 2017; **Quiz 3** – November 16, 2017; **Quiz 4** – November 30, 2017. You will be given 20 minutes to complete each quiz. Quizzes will consist of multiple-choice, true/false and short answer questions. If you do not attend a lecture that contains a quiz, you miss the quiz and there is no make-up for it. The grades for in-class quizzes are updated on CourseLink at the end of the week in which they were held. It is your responsibility to check your grades on CourseLink on a regular basis and inform the instructor ASAP if you have no mark for in-class quizzes. You have until the last day of class to inform the instructor if your marks for in-class quizzes are not uploaded on CourseLink. After this date no changes will be made and you will receive zero for this assignment.

**Group Assignment** (10%)

Students will self-select themselves into groups of 5 students each. Based on material covered in lectures and textbook chapters: 1, 2, 3, 4, 5, 22, 23, 24 & Appendix, students will generate 20 exam-like questions consisting of 15 multiple choice, 3 short answer, 1 figure & label, and 1 case study questions. Students must also provide a complete answer key for each question. Discussion boards for each group will be generated on CourseLink. After grading all generated questions will be anonymized and made available to the entire class. If for any reason, students do not join a group, they will be assigned a group. In the event of the actual number of students in class do not allow for an even distribution of 5 students per group, students may form groups of 4 or 6 based on the instructor’s discretion.

**Midterm** (25%)

The Midterm exam will be held on October 26 2017 during regularly scheduled lecture hours. The midterm will consist of multiple choice and short answer questions. You will have 70 minutes and 1 attempt to complete the midterm. The midterm will cover all lecture material covered up to October 24, 2017 and chapters 1, 2, 3, 4, 5, 6, 22, 23, 24 & Appendix.

**Term Paper** (10%)

The Term Paper is designed to develop the following skills:

- conduct an independent literature search

- reading journal articles

- summarizing journal articles

- synthesizing journal article information into a logical and coherent review of up-to-date research.

The project must be typed and should adhere to APA format guidelines. It is expected

that the body of your research project (introduction, method, and discussion sections)

will be between 5-6 typewritten pages. This does NOT include the title page, reference section, or any tables or figures. The subject matter must be related to Chapter 25 – Repair and Regeneration in the Nervous System. It is strongly suggested that students read this chapter prior to embarking on any literature search.

**Final Exam** (35%)

The Final Exam will be held on December 12, 2017 from 2:30 – 4:30 PM. Room is TBA. The Exam will consist of multiple choice and short answer questions. You will have 120 minutes and 1 attempt to complete the test. The Final Exam will cover all lecture material in the course and chapters 1 - 7, 9 – 19, 22 - 24 & Appendix.

In the event that you miss an exam due to illness or serious personal issues, a makeup exam will be rescheduled for you. (It is your responsibility to inform the instructor if you miss an exam and he will then make the arrangements for the makeup exam.) Generally, make-up exams occur during office hours the week following the exam).

Dates/deadlines and method of evaluation are not negotiable. It is your responsibility to periodically verify your marks.

[Undergraduate Grading Procedures](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-grds-proc.shtml)

### Course Policy on Group Work:

Interactive study groups are encouraged. All parties involved in the completion and submission of the Group Assignment will be awarded the same mark.

### Course Policy regarding use of electronic devices and recording of lectures:

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

## University Policies

### Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration:

[Academic Consideration, Appeals and Petitions](http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml)

### Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

[Academic Misconduct Policy](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/index.shtml)

### Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact [Student Accessibility Services](https://www.uoguelph.ca/csd/) as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 54335 or email accessibility@uoguelph.ca or the [Student Accessibility Services Website](https://www.uoguelph.ca/csd/)

### Course Evaluation Information

Please refer to the [Course and Instructor Evaluation Website](https://courseeval.uoguelph.ca/ceval_CEC.php) **.**

### Drop date

The last date to drop one-semester courses, without academic penalty, is November 3, 2017. For regulations and procedures for Dropping Courses, see the [Schedule of D ates in the Academic Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/c03/index.shtml).

[Current Undergraduate Calendar](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/)

## Additional Course Information

Course instructors are allowed to use software to help in detecting plagiarism or unauthorized copying of student assignments. Plagiarism is one of the most common types of academic misconduct on our campus. Plagiarism involves students using the work, ideas and/or the exact wording of other people or sources without giving proper credit to others for the work, ideas and/or words in their papers. Students can unintentionally commit misconduct because they do not know how to reference outside sources properly or because they don't check their work carefully enough before handing it in. Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

In this course, your instructor will be using Turnitin.com to detect possible plagiarism, unauthorized collaboration or copying as part of the ongoing efforts to prevent plagiarism in the College of Social and Applied Human Sciences.

A major benefit of using Turnitin is that students will be able to educate and empower themselves in preventing misconduct. In this course, you may screen your own assignments through Turnitin as many times as you wish before the due date. You will be able to see and print reports that show you exactly where you have properly and improperly referenced the outside sources and materials in your assignment.