

The University of Western Ontario  
School of Health Studies

**Rehabilitation Sciences 3062B**  
**Functional Neuroscience in Special Populations**  
**Course Outline**  
**Winter, 2017**

**Instructor:** Dr. Susan Hunter BSc, BScPT, PhD

**Email:** [susan.hunter@uwo.ca](mailto:susan.hunter@uwo.ca)

**Office Room Number:** Room 1408, Elborn College

**Office Hours:** By appointment

**Lecture Times and Location:** Tuesday evenings 6:30 pm – 9:30 pm HSB-35

**Prerequisites**

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

**1.0 COURSE OUTLINE**

This course will focus on the neuroscience related to major functions that are the focus of rehabilitation practice (e.g. postural control, locomotion) as well as prevalent neurological conditions that are commonly treated by rehabilitation therapists.

The course is broken up into two sections. The first section of the course will cover the relevant anatomy and physiology of the nervous system. This section is supported by opportunities to see prepared specimens of the brain and spinal cord. The second section will focus on neurological diseases and conditions.

The methods of evaluation in this course are described in detail in Section 3.0 below and will include a midterm, anatomy laboratory quiz, group project and a final exam.

**Course Objectives**

1. To introduce students to the anatomical and functional arrangements of the nervous system at all levels, from cell to systems.
2. To introduce the neurophysiological basis for functions that are the main focus of rehabilitation interventions.
3. To introduce major neurological disorders and diseases commonly treated by rehabilitation therapists with an emphasis on issues related to rehabilitation and

## **Neuroanatomy Laboratory Sessions**

The laboratory session will be 1.5 hours in length and will run once during the designated course lecture time on January 17, 2017. The lab session will be held in the Anatomorium (HSB 322). For the lab, half of the class will attend one session (6:30pm to 7:50pm) and the remaining half will attend the second session (8 pm to 9:20pm). You will be **randomly assigned by the course coordinator to one of the sessions**. The assignment will be posted on OWL. **You must attend the session to which you are assigned due to a limited number of seating in the lecture room.**

## **2.0 COURSE MATERIALS**

There is no required textbook for this course. All materials related to the class will be posted on the OWL website for the course. The following text is a recommended resource: Lundy-Ekman L. Neuroscience: fundamentals for rehabilitation. 4<sup>th</sup> ed. St. Louis, MO; Elsevier Saunders, 2013. ([WL102.LL962n 2013](#))

All students need to use OWL to access resources used in this course such as Power Point handouts for lectures, additional handouts and assigned readings. Students are responsible for checking OWL for this course for readings, handouts, lectures, updates or changes to the schedule. Information or materials not posted on OWL 24 hours in advance of class time will be provided by the course instructor in class. Note that the course instructor will not answer email in OWL. Please contact the instructor by email for difficulties accessing OWL.

## **3.0 METHODS OF EVALUATION**

Mid-term exam	30%
Lab quiz	10%
Final exam	35%
Group project	25%

NOTE: your final grade will come from the registrar, not the course instructor.  
**An overall mark of 60%** is required to pass this course.

### **Examinations**

In this course there will be one in-class mid-term test and a final exam during the final examination period in April. Questions on the exams will consist of computer-marked multiple-choice responses. These exams are designed to assess your knowledge of all materials and concepts identified and discussed in class including lectures, labs, guest lecturers and assigned readings.

Electronic devices will not be allowed during tests and examinations. For final exams, use of communication equipment (e.g., cell phones) is prohibited unless authorized by the examiner.

### **3.1 Midterm Exam (30% of final mark)**

The midterm will be 2.5 hours long and will be held during the regular lecture hours (**February 14, 2017 from 6:30pm to 9:00pm**). Please wait outside the classroom (HSB-35) prior to the exam start time. The instructor will permit entry into the room once it has been set up for the exam. The midterm will cover all lecture, laboratory sessions and reading material **up to and including** February 7, 2017. The format of the exam will be multiple choice questions, matching questions, diagram labelling and case studies. Electronic devices will not be allowed during the midterm exam. The timing of this exam has been carefully considered with respect to the content and the timing of other evaluations in the course. Due to the fact that the course only runs once a week, there is no flexibility in terms of changing the date of the midterm.

### **3.2 Neuroanatomy Laboratory Quiz (10% of final mark)**

Following the lab session, there will be a time-limited online quiz through OWL based upon the knowledge acquired during the lab session. The quiz will be multiple choice format. The quiz is **to be completed by 11pm on the day after the lab session.**

### **3.3 Group Project (25% of final mark)**

The assignment requires you to work with classmates in assigned groups. You will be assigned into groups by January 24, 2017. Then you will be provided with detailed information about the assignment.

The assignment requires you to research a health condition NOT covered in the course. The course instructor will assign a health condition to each group.

The group will give a 15 minute presentation (15 minutes presentation with 5 minutes for questions) on the selected health condition to the class. The material in the presentation will be given at a level that is consistent with being in a university course in this topic area. Presentations will occur on **March 28th, 2017 and April 4<sup>th</sup>, 2017.** **All members of the team must be present and participate in the presentation.**

The group project is worth 25% of your final mark. The mark will be composed of the instructor's evaluation of the in-class presentation (which will be the same mark for all group members) and a peer evaluation of your contributions to the group (which will be the average of the marks you receive from your group members). The marking scheme for the instructor's evaluation and peer evaluation will be provided in advance of the due date.

### **Additional Information**

If you require assistance with the research for or writing of this report, please note the following resources available to Western Students. The Student Development Centre offers both one-on-one appointments and drop-in services to assist you with academic writing. You can find out more at <http://www.sdc.uwo.ca/writing/>. In addition, Western Libraries offer assistance with student research needs. You can find out more about this at <http://www.lib.uwo.ca/services/research.html>

### **3.4 Final Exam (35%)**

The final exam will be held during the final examination period in April 2017. The final exam will consist of computer-marked multiple-choice questions, matching, and diagram labeling responses. Case scenarios or vignettes may be included. The exam will cover all material from lecturers, the assigned readings and the neuroanatomy lab sessions.

## **4.0 UNIVERSITY POLICIES**

### **Student Code of Conduct**

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at The University of Western Ontario, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed, and set out the disciplinary procedures that the University will follow. For more information, visit <http://www.uwo.ca/univsec/pdf/board/code.pdf> .

Students are expected to attend all classes, arrive on time for class, **read assigned readings prior to class**, participate in class discussion, make a genuine contribution to any group activities and respect the opinions of others in the learning process. **Cell phones are to be turned off during scheduled class time.**

### **English Proficiency for the Assignment of Grades**

Visit the website [http://www.uwo.ca/univsec/pdf/academic\\_policies/exam/english.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/exam/english.pdf)

### **Accommodation for Medical Illness or Non-Medical Absences**

<http://www.westerncalendar.uwo.ca/2016/pg117.html>

The University recognizes that a student's ability to meet his/her academic responsibilities may, on occasion, be impaired by medical illness. Illness may be acute (short term), or it may be chronic (long term), or chronic with acute episodes. The University further recognizes that medical situations are deeply personal and respects the need for privacy and confidentiality in these matters. However, in order to ensure fairness and consistency for all students, academic accommodation for work representing 10% or more of the student's overall grade in the course shall be granted only in those cases where there is documentation indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities.

A UWO Student Medical Certificate (SMC) is required where a student is seeking academic accommodation. This documentation should be obtained at the time of the initial consultation with the physician or walk-in clinic. An SMC can be downloaded under the Medical Documentation heading of the following website:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

Documentation is required for non-medical absences where the course work missed is more than 10% of the overall grade. Students may contact their Faculty Academic Counselling Office for what documentation is needed.

Whenever possible, students who require academic accommodation should provide notification and documentation in advance of due dates, examinations, etc. Students must follow up with their professors and their Academic Counselling office in a timely manner. Documentation for any request for accommodation shall be submitted, as soon as possible, to the appropriate Academic Counselling Office of the student's Faculty of registration. For BHSc students, you may go to the School of Health Studies Office in HSB room 222. A make-up examination will be offered to students who meet the requirements for accommodation due to medical illness or non-medical absences.

### **Scholastic Offences**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

Additionally,

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

### **Support Services**

There are various support services around campus and these include, but are not limited to:

1. Student Development Centre -- <http://www.sdc.uwo.ca/>
2. Student Health – <http://www.uwo.ca/health/services/students/index.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>

## **SCHEDULE OF KEY DATES AND TOPICS**

Information regarding any assigned readings will be posted on OWL and are to be read **BEFORE** class.

### **5.0 LECTURE SCHEDULE – subject to change**

<b>Week</b>	<b>Date</b>	<b>Topic</b>
<b>1</b>	January 10, 2017	Introduction to the nervous system
<b>2</b>	January 17, 2017	Lab
<b>3</b>	January 24, 2017	Peripheral Nervous System Spinal Cord
<b>4</b>	January 31, 2017	Brainstem Cerebellum
<b>5</b>	February 7, 2017	Cerebrum Motor and somatosensory system
<b>6</b>	February 14, 2017	<b>MIDTERM (in class)</b>
	February 20-24, 2017	<b>READING WEEK (no class)</b>
<b>7</b>	February 28, 2017	Stroke
<b>8</b>	March 7, 2017	Alzheimer's Disease
<b>9</b>	March 14, 2017	Spinal Cord Injury
<b>10</b>	March 21, 2017	Parkinson's Disease Multiple Sclerosis
<b>11</b>	March 28, 2017	Presentations
<b>12</b>	April 4, 2017	Presentations/Review