

The University of Western Ontario  
School of Health Studies

**Rehabilitation Sciences 3062B**  
**Functional Neuroscience in Special Populations**  
**Course Outline**  
**Winter, 2021**

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**Office Hours:** By appointment

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**Lecture Times and Location:** Asynchronous online course - 3 hours of lectures per week.

**Prerequisites**

Prerequisite(s): Health Sciences 2300A/B or Kinesiology 2222A/B or Anatomy and Cell Biology 2221. Registration in a Rehabilitation Sciences module or enrolment in the third or fourth year of the School of Health Studies or School of Kinesiology.

It is the student's responsibility for ensuring that course prerequisites have been successfully completed or special permission from the Dean has been obtained. Unless you have either the prerequisites 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 neuroanatomy and 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. The second section will focus on neurological diseases and conditions.

**Course Objectives**

1. To introduce students to the anatomical and functional arrangements of the nervous system from cell to systems.

- 2 To introduce major neurological disorders and diseases commonly treated by rehabilitation therapists.

## **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. Note that the course instructor will not answer email in OWL.

**Online Material in the Course:** We remind students that all lecturers own the intellectual property in each of their lectures and lecture materials even when such lectures or materials are posted online. Students **are not** to post lectures or lecture materials to any other websites or platforms or use the lecture recording or materials for any other purpose without the consent of the person who presented.

## **3.0 METHODS OF EVALUATION**

Mid-term exam	35%
Written assignment	20%
Final exam	45%

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 mid-term test and a final exam during the final examination period in April. Questions on the exams will consist of multiple-choice and short answer. These exams are designed to assess your knowledge of all materials and concepts identified and discussed in class including lectures and any assigned readings.

#### ***3.1 Midterm Exam (35% of final mark)***

The format of the exam will be multiple choice questions, matching questions, diagram labelling and case studies. The timing of this exam has been carefully considered with respect to the content and the timing of other evaluations in the course.

#### ***3.2 Written assignment (20% of final mark)***

There will be a written assignment in the second half of the course. Details will be provided at the start of the course.

### **3.3 Final Exam (45%)**

The final exam will be held during the final examination period in April 2019. The final exam will consist of computer-marked multiple-choice questions, matching, case studies and diagram labeling responses. The exam will cover all material from lecturers and any assigned readings.

## **4.0 UNIVERSITY POLICIES**

### **Academic 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 Web site:

[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)

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.

### **Plagiarism**

“Students must write their essays and assignments in their own words. Whenever students take an idea or passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).”

### **Plagiarism-checking software**

All required papers and exams 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 (*link to Turnitin.com website: <http://www.turnitin.com>*).”

### **Cheating**

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.

### **Proficiency in English**

Each student granted admission to Western must be proficient in spoken and written English. Students must demonstrate the ability to write clearly and correctly. Work presented in English in any subject at any level, which shows a lack of proficiency in English and is, therefore, unacceptable for academic credit, will either be failed or, at the discretion of the instructor, returned to the student for revision to a literate level

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)

### **Use of Electronic Devices**

**During Exams:** Unless you have medical accommodations that require you to do so, or explicit permission from the instructor of the course, you may not use any of the following electronic devices during ANY of the tests, quizzes, midterms, examinations, or other in-class evaluations: cellphones, smart phones, smart watches, smart glasses, audio players or recorders of any sort, video cameras, video games, DVD players, televisions, laptop/notebook/netbook computers, flashlights or laser pointers.

**During Lectures and Tutorials:** Although you are welcome to use a computer during lecture and tutorial periods, you are expected to use the computer for scholastic purposes only, and refrain from engaging in any activities that may distract other students from learning. From time to time, your professor may ask the class to turn off all computers, to facilitate learning or discussion of the material presented in a particular class. Unless explicitly noted otherwise, you may not make audio or video recordings of lectures or live-stream – nor may you edit, re-use, distribute, or re-broadcast any of the material presented in the course.

### **Accommodation for Illness:**

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. For more information please refer to the policy here:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

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.

### **Accessibility:**

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program. Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are encouraged to register with Student Accessibility Services, a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both SAS and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged. These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction. For more information, see <http://www.sdc.uwo.ca/ssd/>

### **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 **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.

### **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/ssd/>
2. Student Health -- <http://www.shs.uwo.ca/student/studenthealthservices.html>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombudsperson Office -- <http://www.uwo.ca/ombuds/>

### **Health & Wellness**

As part of a successful undergraduate experience at Western, we encourage you to make your health and wellness a priority. Western provides several on-campus health-related services to help you achieve optimum health and engage in healthy living while

pursuing your degree. For example, to support physical activity, all students receive membership in Western's Campus Recreation Centre as part of their registration fees. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page (<http://www.music.uwo.ca/>), or the McIntosh Gallery (<http://www.mcintoshgallery.ca/>). Further information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

If you are in emotional or mental distress should refer to Mental Health@Western (<http://www.uwo.ca/uwocom/mentalhealth/>) for a complete list of options about how to obtain help. To help you learn more about mental health, Western has developed an interactive mental health learning module, found here:

[https://uwo.ca/health/mental\\_wellbeing/education/module.html](https://uwo.ca/health/mental_wellbeing/education/module.html) .

### **Land Acknowledgement:**

We/I acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. With this, we/I respect the longstanding relationships that Indigenous Nations have to this land, as they are the original caretakers. We acknowledge historical and ongoing injustices that Indigenous Peoples (e.g. First Nations, Métis and Inuit) endure in Canada, and we accept responsibility as a public institution to contribute toward revealing and correcting miseducation as well as renewing respectful relationships with Indigenous communities through our teaching, research and community service.

## 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

Week	Date	Topic
1	Jan 11-15, 2021	Introduction to the nervous system
2	Jan 18-22, 2021	Blood supply, meninges and cerebral spinal fluid
3	Jan 25-29, 2021	Spinal Cord
4	Feb 1-5, 2021	Brainstem
5	Feb 8-12, 2021	Cerebellum
6	Feb 15-19, 2021	<b>READING WEEK (no class)</b>
7.	Feb 22-26, 2021	Basal Ganglia
8	Mar 1-5, 2021	<b>MIDTERM (details for the date &amp; time to be confirmed)</b>
9	Mar 8-12, 2021	Cerebral cortex
10	Mar 15-19, 2021	Stroke
11	Mar 22-26, 2021	Parkinson's Disease/ Alzheimer's disease
12	Mar 29-Apr 2, 2021	Multiple Sclerosis / Spinal Cord Injury
13	Apr 5-9, 2021	Amyotrophic Lateral Sclerosis