MCMASTER UNIVERSITY  
Department of Kinesiology  

Kinesiology 4CN3: Clinical Neurophysiology

Term: Fall  
Instructor: Dr. Aimee J. Nelson  
Time: Monday’s, 8:30 – 11:30 am, E- IWC 201 or Undergraduate laboratories  
Office: IWC 202  
Telephone: x28053  
E-mail: nelsonaj@mcmaster.ca  
Office Hours: Monday’s following class

DESCRIPTION  
This course will explore fundamental topics in clinical neurophysiology that pertain to neural transmission and communication and neural plasticity. This course will examine how damage to spinal and cortical neurons result in altered neural transmission, communication and ultimately neural plasticity with an emphasis on the cellular and systems-level changes. Later weeks of the course will focus on the neurophysiology associated with human disorders affecting sensation and movement as they relate to disease related injury. Labs will be used to gain hands-on experience with clinical neurophysiology techniques. Lab lectures will teach the theory of the neurophysiology techniques.

OBJECTIVES  
Students should gain a thorough understanding of the neurophysiology that underpins common movement disorders. Students should learn fundamental principles of plasticity based on animal literature and understand how these can be translated into approaches to improve human symptoms of movement disorders.

REQUIRED TEXT(s)/READINGS  

Content from these readings will be included in the midterm and final examination (see below) including material which may not be covered in such great detail in the lectures.

TOPICS TO BE COVERED  
This course will begin by exploring principles of neurophysiology including membrane properties, action potential generation, nerve conduction, synaptic connectivity. Subsequent topics will include neural changes that accompany injury to the peripheral or central nervous system, central and peripheral mechanisms of neural plasticity, and neural regeneration. Specific special populations will include spinal cord injury, stroke, concussion and diseases that impair human movement.
EVALUATION
Labs 20% (4 x 5%)
Midterm exam 40%
Final exam 40% (TBD)

Some notes on readings/lecture notes/class attendance and lectures
You are expected to attend every class. The readings and lectures will both overlap and complement each other. The lectures are designed to expand and elaborate on the readings and the readings on the lectures; neither is a substitute for the other. Very basic lecture slides may be available via Avenue to Learn (see also the section on On-Line Resources below). These will typically (but perhaps not always) be available before the class.

However, please be aware that the lectures might depart from the notes on Avenue and there will be additional information conveyed in the class that may not appear in the lecture notes. It is YOUR responsibility to cross-check the notes with others if you miss a class.

POLICY REGARDING DEFERRED TESTS AND EXAMS
Students who miss the midterm or final exam for legitimate reasons such as illness may be allowed to write a deferred or "make-up" test. In all instances, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science. In the case of a deferred midterm exam, the exam will take place on December 1st at 10 am in IWC room 201.

Note: it is the student’s responsibility to initiate accommodation arrangements for missed work. Failure to do so will result in a grade of zero for the missed work.

Students who miss a Registrar-scheduled final exam can apply to the Associate Dean’s office for permission to write in the deferred final exam schedule. In all cases, appropriate documentation must be submitted to the Office of the Associate Dean, Faculty of Science, for consideration of deferred examination permission. Under no circumstances will the instructor re-schedule a final exam for individual students.

ACADEMIC INTEGRITY
Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences (e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript reading "Grade of F assigned for academic dishonesty", and/or suspension or expulsion from the university). It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at: http://www.mcmaster.ca/univsec/policy/AcademicIntegrity.pdf

The following illustrates only three forms of academic dishonesty:
• Plagiarism (e.g. the submission of work that is not one's own or for which other credit has been obtained),
• Improper collaboration in group work.
• Copying or using unauthorized aids in tests and examinations.
ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES
Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone (905) 525-9140 ext. 28652 or email sas@mcmaster.ca. For further information, consult McMaster University’s Policy of Academic Accommodation of Students with Disabilities. http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf

ON-LINE LEARNING RESOURCES
This course is subscribed to Avenue to Learn. As a student registered in this course, you will be able to log-in to this site at any time and access certain elements of course content. On this site we will post lecture outlines, assignment information, discussion forums and other materials pertinent to the course. Please note that these materials are provided to guide you through in-class lectures and assist in developing a structured framework for learning. Because certain information may not be included in these on-line resources, they are NOT to be considered substitutes for lectures.

Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

USE OF COURSE MATERIAL
Course materials provided by the instructor are for use by students registered in this class only. Under no circumstances are these materials to be shared, posted or sold to a third party without permission from the instructor. This includes, but not limited to, online posting of instructor provided lecture/lab notes, online lectures, recordings of lectures, or any lab materials on a website other that the Avenue site designed for this course.

ELECTRONIC COMMUNICATION
Any course related e-mail communication that is sent to the instructor’s personal e-mail addresses will not be answered. You may arrange to visit the instructor during office hours via telephone (x28053) or in person.

MODIFICATIONS TO COURSE
The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.
MISSED STUDENT ABSENT FORM
If you are absent from the university for a minor medical reason, lasting fewer than 3 days, you may report your absence, without documentation, using the McMaster Student Absence Form. Absences for a longer duration or for other reasons (e.g., Religious, personal) must be reported to your Faculty/Program office, with documentation, and relief from term work may not necessarily be granted. When using the MSAF, report your absence to nelsonaj@mcmaster.ca. Then contact the instructor immediately (normally within 2 working days) by email/telephone/in person to learn what relief may be granted for the work you have missed, and relevant details such as revised deadlines, or time and location of a make-up exam.

FEEDBACK
It really helps us improve our services when we hear from our students, faculty and staff about what we can do better. A feedback process brings to our attention situations in which we may not have adequately considered accessibility and allows us to better plan for accessibility in the future.