

KINESIOLOGY AND HEALTH SCIENCE - YORK UNIVERSITY

KINE 4500 3.0 - Neural Control of Movement Fall 2018

Course learning objectives: The purpose of this course is to provide students with an overview of the fundamental concepts and current issues in how the brain controls movement, and the effects of dysfunction and disease on this control.

Specific learning objectives:

- be able to describe the basic issues facing the nervous system in terms of movement control
- Apply these issues to different types of movement such as walking, looking, reaching, writing, and complex skill coordination
- understand and critically examine recent approaches to the treatment of brain damage and disease
- demonstrate the ability to apply theory to practice in the context of clinical case studies
- develop the ability to discuss and write about current movement disorder research

Prerequisites: AS/SC/KINE 3020.03 or permission of Course Director
(Degree credit exclusion: AS/SC/PHED 4500.03)

Course Director: Lauren Sergio
2032 Sherman Health Science Research Centre
Mail box: 357 Bethune College, 736-2100, ext. 33641
Office hours: By appointment.
lsergio@yorku.ca

Lectures: September 6th - December 4th
T/R 10:00 - 11:30 am, Ross North Room 145

Course reader: Course notes and readings are available on moodle.

Course Evaluation:

Mid-term Exam	October 4	35%
Essay outline	by November 13	5%
The essay outline should be one page maximum, and should list the topic that you have chosen, a rough summary of the sections that the essay will include, and at least two references		
Course Essay	by November 29	25%
Final Exam	TBA	35%

Note: The final exam is not cumulative

Note A: Any extensions for projects must be approved by the instructor **prior** to the due date. Late reports/assignments will be penalised (**10% per day**).

Note B: The procedure for missed in-class test is as follows:

- Anyone missing the midterm for a legitimate medical reason will write a make-up exam prior to Nov. 2nd (last day to drop course is November 9th).
- Specific arrangements must be made with the course director by Friday October 19st, at the latest.
- A doctor's note or other official documentation is required for a missed test. Documents are verified with the physician's office..

KINESIOLOGY AND HEALTH SCIENCE KINE 4500 3.0 - Neural Control of Movement
CLASS SCHEDULE: Fall 2018

September 6	Topic	Introduction to the neural control of movement
September 11,13	Topic	Locomotion
September 18,20	Topic	Eye movement, vestibular system
September 25	Topic	Posture
September 27	Topic	Reach and grasp, eye-hand coordination
October 2	Topic	Reach and grasp, continued
	Film	"The baby's brain" (also available as SMIL video #6436)
October 4	*****MIDTERM EXAM*****	
October 16	Film:	The secret life of the Brain: The Child's Brain, SMIL Video #6437
October 18, 23	Topic	Skill acquisition
October 25	Topic	Sequential movements, Rhythm and timing
October 30	Film:	The secret life of the Brain: The Aging Brain
		<i>No class, watch on own</i> ; see moodle for link, borrow: SMIL Video #6440
November 1	Topic	Effects of aging on performance
		<i>(November 9: last day to drop course without receiving a grade)</i>
<i>Note: no lecture November 6 & 8, Society for Neuroscience meeting, everyone away.</i>		
November 13	Topic	Motor dysfunction I: Motor unit and myopathic disease
term paper outline due November 13		
November 15,20	Topic	Motor dysfunction II: Spinal cord injury and subcortical motor disorders
November 22, 27	Topic	Motor dysfunction III: Concussion, acquired brain injury, epilepsy
Nov. 29, Dec. 4	Topic	Motor dysfunction IV: Stroke and SCI rehabilitation, parietal syndromes, dementia

****** TERM PAPERS DUE November 29******

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LIST OF POSSIBLE TOPICS FOR TERM PAPER

1. Any topic covered in the lectures*

* **NOTE: An essay on the topic "Multiple Sclerosis" will not be allowed.**

2. Any topic in the readings of the textbook, not covered in the lectures

3. Gender differences in skilled performance and visuospatial abilities

4. Effect of aging on motor performance

5. Motor (procedural) memory

6. Effects of stressors on performance

7. Handedness

8. Current research on spinal injury recovery

9. Current research on the role of any **one** of the following brain areas on voluntary movement, and the consequences of damage to the area: motor cortex, premotor cortex, basal ganglia, cerebellum, supplementary motor area, parietal cortex

10. Drugs (including alcohol, caffeine, cannabis, and nicotine) and performance

11. Neural control of speech / neural basis of speech disorders

Any other topic is negotiable. The paper should be 10-15 pages, **excluding** references and figures. Use 1" margins with double spacing.

- The deadline for handing in the term paper is **5 P.M.** the last day of the term. *Late reports/assignments will be penalised (10% per day) without documentation.*
- **There will be absolutely no extension beyond this date.**
- Papers are submitted to Turnitin through the moodle site
- The paper should comprise a general review of the area (from either a review article or a published book) and a discussion of current research on the topic, using at least two articles from **peer-reviewed journals**. At least two articles must be original research papers (i.e., not opinion or review pieces). You will be assessed on the thoroughness with which you have researched the topic, the organization of the paper, the cogency of your arguments, and your writing style.
- Follow the American Psychological Association reference system, and include an APA style abstract at the beginning of the paper.

References:

- References must be from ESTABLISHED sources such as books or **peer-reviewed** scientific journals. Uncredited internet sources are NOT acceptable (however online scientific journals are).
- Follow the guidelines established by the APA when citing internet sources, found at: <http://www.apa.org/journals/webref.html>
- For information on how to reference standard publications: Publication Manual of the American Psychological Association. Third Edition, 1983.

RE-EVALUATION POLICY

During the term:

Any requests for remarking of assignments or in-class tests must be received by the course instructor within 7 days of the item's mark being posted, along with the "Evaluation item remark request" form, which can be found on the course website. Please note that your mark may be **raised, lowered, or confirmed**.

Re-appraisal of a final grade:

Any requests for re-appraisal of a final mark must be received by the course instructors within 7 days of the final grade posting, along with the "Evaluation item remark request" form, which can be found on the course website. Please note that your mark may be **raised, lowered, or confirmed**. If the result is still unsatisfactory, requests for a reappraisal of the final grade for a completed course are the responsibility of the Undergraduate Director. You must submit in writing a formal request for a **final grade reappraisal** to the KINE undergraduate Office. The 'Reappraisal of Final Grades' form can be picked up at the KINE Undergraduate Office.

There is absolutely no option for submitting 'extra' work to increase a mark.

For further details: www.registrar.yorku.ca/policies/grade.htm

IMPORTANT GENERAL COURSE INFORMATION FOR STUDENTS

Academic Honesty and Integrity

York students are required to maintain high standards of academic integrity and are subject to the Senate Policy on Academic Honesty (<http://www.yorku.ca/secretariat/legislation/senate/acadhone.htm>). There is also an academic integrity website with complete information about academic honesty. Students are expected to review the materials on the Academic Integrity website (<http://www.yorku.ca/academicintegrity>).

Access/Disability

York provides services for students with disabilities (including physical, medical, learning and psychiatric disabilities) needing accommodation related to teaching and evaluation methods/materials. It is the student's responsibility to register with disability services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to schedule a time early in the term to meet with each professor to discuss your accommodation needs. Failure to make these arrangements may jeopardize your opportunity to receive academic accommodations. Additional information is available at www.yorku.ca/disabilityservices or from disability service providers:

- Office for Persons with Disabilities: N108 Ross, 416-736-5140, www.yorku.ca/opd
- Learning and Psychiatric Disabilities Programs - Counselling & Development Centre: 130 BSB, 416-736-5297, www.yorku.ca/cdc
- Atkinson students - Atkinson Counselling & Supervision Centre: 114 Atkinson, 416-736- 5225, www.yorku.ca/atkcsc
- Glendon students - Glendon Counselling & Career Centre: Glendon Hall 111, 416-487- 6709, www.glendon.yorku.ca/counselling

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making accommodations for observances of special significance to adherents. Should any of the dates specified in this syllabus for an in-class test or examination pose such a conflict for you, contact the Course Director within the first three weeks of class. Similarly, should an assignment to be completed in a lab, practicum placement, workshop, etc., scheduled later in the term pose such a conflict, contact the Course director immediately.

Please note that to arrange an alternative date or time for an examination scheduled in the formal examination periods (December and April/May), students must complete an Examination Accommodation Form, which can be obtained from Student Client Services, Student Services Centre or online at http://www.registrar.yorku.ca/pdf/exam_accommodation.pdf

Student Conduct

Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect and to refrain from actions disruptive to such a relationship. Moreover, it is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom, and the responsibility of the student to cooperate in that endeavour. Further, the instructor is the best person to decide, in the first instance, whether such an atmosphere is present in the class. A statement of the policy and procedures involving disruptive and/or harassing behaviour by students in academic situations is available on the York website <http://www.yorku.ca/secretariat/legislation/senate/harass.htm>

Please note that this information is subject to periodic update. For the most current information, please go to the CCAS webpage (see Reports, Initiatives, Documents):

http://www.yorku.ca/secretariat/senate_cte_main_pages/ccas.htm.