Department of Kinesiology and Physical Education
McGill University

EDKP 447: Motor Control (3 credits)
Fall 2021

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Lectures (13 weeks)
Tuesdays & Thursdays 4:05 PM-5:25 PM
Currie 305/6

Prerequisites:
EDKP 206 Biomechanics of Human Movement
PHGY 201 or PHGY 209 Mammalian Physiology 1
PHGY 202 or PHGY 210 Mammalian Physiology 2
EDKP 261 Motor Development

Weekly Time Commitment:		
	Classes	**3 hours**
	Study Time	**5 hours**
	Term Project	**1 hour**
	Total	**9 hours**

This course includes in-person teaching, and learning activities have been planned in accordance with public health directives and McGill's protocols. It is important, however, to ensure you have read and abide by the following:

- Please review and follow the Health Guidelines for Students, and it is imperative that you understand when to stay home if, for example, you are experiencing COVID-19 symptoms.
- If you develop COVID-19 symptoms while on campus, please follow the required guidelines, which include ensuring you have a mask on, isolate in a closed, private room, immediately call 1-877-644-4545 (Info-Santé) for instructions, and notify the University by calling 514-398-3000.
- **Masks are required in classrooms settings**, at all times, and masks will be available for you on campus. Masks are also to be worn when entering and circulating in buildings and classrooms.

- If you are in a situation that might require you to miss some lectures or assignments because of short-term absences due to COVID-19, you are to request an academic accommodation using the online form found under the "Personal" menu in Minerva; the form is called "**COVID-19 Academic Accommodations Request Form**". You are asked to use this form instead of requesting accommodations directly from your instructor.
- Finally, the context of attending University during a pandemic will bring on additional stress and may impact your wellbeing. Please do not hesitate to reach out for support if necessary, and access the many resources available, including, for example, Student Services, the Office of the Dean of Students, and your Faculty's Student Affairs Office.

In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

1. Course Description

This course aims to introduce the field of motor control. It will provide information concerning how information is processed, the types of sensory information used in motor control and simple models of control processes. It will give a detailed explanation of how posture and movement are maintained in humans, the neural basis of motor control and outline current theories behind how humans learn complex movements. Several diseases of the nervous system will be presented in terms of their pathophysiology and motor control signs and symptoms.

2. Learning Outcomes

At the end of this course, students will be able to:

- Explain how various structures of the brain control human movement.
- Summarize how different factors influence information processing and motor preparation.
- Summarize the processes underlying the preparation and regulation of movement.
- Explain feedforward and feedback processes in the control of movement.
- Describe how the brain utilizes visual information to control skilled movement.
- Explain the dynamical systems principles that are involved in movement coordination.
- Explain how diseases of the nervous system affect the control of movement.

3. Course Content

Calendar (subject to minor changes)

wk	date	Tuesday	date	Thursday
1			9/2	Introduction to Motor Control
2	9/7	Refresher: basic characteristics of the nervous and muscular systems	9/9	Information Processing
3	9/14	Term Paper presentation Finalize Groups	9/16	Tutorial Goodale Topics Assigned
4	9/21	Sensory Contributions	9/23	Tutorial Earhart
5	9/28	Control Loops & Motor Programs	9/30	Tutorial sample questions Outline Due
6	10/5	Review	10/7	**EXAM 1**
7	10/12	Reading week	*10/15 (Friday)*	*Floating day*
8	10/19	Motor Programs Infographic Due	10/21	Peer review of infographic
9	10/26	Descending/Ascending Pathways Peer review Due	10/28	Tutorial Barbeau & Rossignol
10	11/2	Motor Learning	11/4	Tutorial Capaday & Stein Presentations + Final infographic Due
11	11/9	Posture	11/11	Posture
12	11/16	Video presentations viewing	11/18	Tutorial Lajoie
13	11/23	Video presentations viewing	11/25	Review Session Literature Review Due
14	*11/30*	*Floating day*	12/2	Tutorial sample questions
EXAM 2 (Exam Period)				

4. Instructional methods

Lectures based on assigned readings (posted on MyCourses). Students are advised to read the material **prior** to class. The lectures are designed to help put concepts together and clarify aspects of the reading and NOT to be taken as course material on its own. Students are responsible for their own note taking during lectures.
Tutorials will be smaller group sessions to review course content and solve problems related to class material.
Notes and supporting material (where applicable) will be posted on MyCourses.

5. Course materials

Required readings: Posted on MyCourses.

6. Student Assignment and Evaluation

Exam 1	25%
Exam 2	35%
Term Project (infographic, video presentation, review)	40%
Total	**100%**

Exams:
The midterm exams (2) will evaluate your knowledge of the material covered during the course.

Term Project:
Great news! Your start-up firm specializing in health communication has obtained its first contract by a *(fictional)* Canadian not-for-profit organization, ***Patient Education Network.***

This organization promotes patient engagement, education, and patient and family support. Your assignment is to **create a communication strategy** for patients and their support network of family and friends.

Your communication strategy will be made up of 5 deliverables:

a. A **project outline** comprised of an annotated bibliography, due September 30, 2021 (5% of final grade);
b. An **infographic** suitable for posting on a website, Facebook page or Instagram account, due October 19, 2021 (10% of final grade);
c. A peer review of another start-up's infographic, due on October 26, 2021 (5% of final grade);
d. A short explanatory **video presentation** that could be shared on social media, due November 4, 2021 (10% of final grade);
e. A short but informative **literature review** for detailed education, due November 25, 2021 (10% of final grade).

**See Term Project Description document for further details.*

The term project will be a group project. You will work in groups of about three. Topics will be assigned randomly.

7. Right to write in English or in French
"In accord with McGill University's Charter of Students' Rights, students in this course have the right to submit in English or in French any written work that is to be graded. This does not apply to courses in which acquiring proficiency in a language is one of the objectives." (Approved by Senate on 21 January 2009)

8. Consequences of not completing assignments as requested
An individual who does not complete a required assignment and does not have a university recognized reason for deferral would receive a zero (0) in that portion of the evaluation. Assignments submitted late will receive a penalty of 10% per day late, including weekends.

9. Use of McGill Email Address
We will only communicate with students on their official email address. No response will be provided on non-McGill email addresses.

10. Academic integrity

"McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures" (Approved by Senate on 29 January 2003) (See McGill's guide to academic honesty for more information).

« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le guide pour l'honnêteté académique de McGill.»

I encourage you to visit the above mentioned websites as soon as possible to insure that you are aware of the definitions of cheating, plagiarism and other academic offences that are used by McGill. Simply taking this initiative may help you avoid accidental and unfortunate situations.

11. Health and safety guidelines

Please note that this format for the delivery of this course is unusual and must respect the guidelines of health and safety (General health guidelines | Coronavirus information - McGill University). It is explained by our current extraordinary circumstances, and aims to allow you, as students, to complete this term with the requisite knowledge for this course, and to succeed in your assessments. I ask for everyone's collaboration and cooperation in ensuring that these guidelines are respected. Please note that these condition may change at anytime following new directives from the government or the University.

DISTANCING

The status of physical distancing is now:

0. **No distancing in classrooms,**
1. **One metre in common areas, including shared research spaces, laboratories, offices, and other workplaces.**
2. Two metres required when eating or drinking, working out in fitness centres.

MASKS

Procedural masks **are required in all indoor spaces at McGill,** including classrooms. However, Professors do not need to wear a mask when teaching and remaining at least two metres away from others. Students are required to wear masks at all time indoor (except when eating or drinking or working out in fitness centres).

Eating and drinking in classrooms and teaching labs is prohibited, with the exception of a quick drink of water, if necessary.

DAILY HEALTH CHECK FORM

The daily health check form is still a requirement for all McGill staff before you come to campus. Students must assess their health using the self-assessment found in General health guidelines | Coronavirus information - McGill University

CLASSROOM VENTILATION
All centrally booked classrooms that are being used in the Fall 2021 term have been assessed to ensure ventilation follows the Government's COVID-19 guidelines.

VACCINATION
- Proof of vaccination is not required for students and instructors to engage in teaching activities on our campuses.
- Here is all the information you need to get vaccinated: https://www.mcgill.ca/coronavirus/health-safety/get-vaccinated.
- If you are undecided or still find you are missing information about the COVID-19 vaccine, please take a moment to visit this page: https://www.mcgill.ca/coronavirus/health-safety/get-vaccinated/undecided-about-getting-vaccinated.