Course Description:

This course is designed to give a comprehensive overview of human sensorimotor control research. The course will cover neurophysiological, computational and cognitive approaches to the study of problems in human motor control. The goal of this course is to prepare the student for conducting research in motor control neuroscience with a thorough overview of the literature, methodologies and debates in the field. Applications for motor learning and functional rehabilitation will also be discussed.

Specific topics that will be covered include coordinated reaching, grasping, language & speech, interceptive actions, timing, bimanual coordination, posture/balance and mechanical/robotic control systems. Examples will be drawn from various movement pathologies to explain the function of the intact brain in movement organization & control. A strong emphasis will be placed on computational models.

Specific Educational objectives:

1. To provide a framework for the scientific study of human movement control & learning.
2. To expose the student to the latest developments in the field of human motor control.
3. To apply this fundamental knowledge towards the study of specific functional motor behaviors (locomotion, prehension, speech production etc).
Format of the course:

Although, bulk of the content of this course will be delivered through lectures, I am aiming for a fairly intimate atmosphere with lots of open discussions and debates. All course material will be made available on the web ahead of time.

You will be asked to pick a topic area in great detail using the methodologies learned and present the findings from the literature to the class. A final paper that details these findings this should be submitted by the end of the semester.

Evaluation: (dates TBA)

Mid-term exam: 35%
class participation: 15%
Presentations: 20%
Final paper (25 pages): 30%

Policies:

At all times students are expected to behave in a manner befitting that of a member of the University community, the Dept of Kinesiology and the Faculty of Science. This includes:

- Attendance is not mandatory for lectures but strongly encouraged for your own benefit; Full attendance participation in all assigned class activities and meetings is expected (especially student presentations).
- Respect and consideration for fellow students and University staff.
- Punctuality for class meetings and with assignments. Although lecture notes will be posted on the web ahead of the class, there is no substitute for actually being there in class.
- Students are expected to maintain the highest standards of academic integrity (e.g. regarding issues such as plagiarism and research misconduct). Failure to adhere to these standards will result in failure, without possibilities of appeal.
- And please, no cell phones in the class room.

"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."

Academic dishonesty:

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/senate/academic/ac_integrity.htm

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Presentations 1: TBA
Presentations 2: TBA
Presentations 3: TBA

READINGS:

There will be no official textbook for the course. However we will be following the structure of the following readings. You will be expected to read these ahead of the lectures. You will be responsible for procuring the readings from the list.

The following books are strongly recommended for reference


A supplementary list of readings will be added each week.
READING LIST 1


Stay tuned to additions to this page each week!