

Human Movement Laboratory

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Course Hours: *Monday, 7:00 – 9:00 PM*
Course Location: *SW316*

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Overview of Course

The purpose of PSYC74 is to introduce students to the basic principles underlying human movement and motor control. To accomplish this goal, we will examine a range of topics on human movement, drawn from the areas of eye-movements, balance control, and locomotion. Along with gaining conceptual movement about human movement, you will gain hands-on experience in actually collecting data regarding human movement data via a variety of simple and sophisticated behavioral data gathering systems. Finally, in this course you will become acquainted with the process of analyzing the data gathered in movement students. Because the data gathered in studies on human is complex, data analysis techniques are similarly complex, often involving the use of spatial frequency analysis, and so on.

Course Requirements

There are multiple course requirements. First, you will be asked to complete multiple assignments based on the analysis and interpretation of human movement data that you are provided with in this course. Second, you will be expected to master information involving basic aspects of motor control and human movement. This information will be presented to you via a selection of course readings, as well as through class lecture. Your knowledge of this material will be assessed through standard exam procedures. A rough outline of the lecture topics for this course, as well as the due dates and relative weighting of the assignments and the exams, is given below.

| <u>Week</u> | <u>Topic / Reading</u> | <u>Assignment (value)</u> |
|-------------|---|--|
| Sep. 9 | Introduction to Class | |
| Sep. 16 | <p>Motor Control: An Overview and Psychological Foundations</p> <ul style="list-style-type: none"> Schmidt & Lee (2011). Ch. 1, Evolution of a Field of Study. In <i>Motor control and learning</i>, 5th edition, (pp. 3-19) McGill & Anderson (2014). Ch. 5, Motor control theories. In <i>Motor learning and control</i>, 10th edition, (pp. 85-11) | |
| Sep. 23 | <p>Motor Control Methodology</p> <ul style="list-style-type: none"> Schmidt & Lee (2011). Ch. 2, Methodology for studying motor performance. In <i>Motor control and learning</i>, 5th edition, (pp. 21-55) | |
| Sep. 30 | <p>Time Series Analysis and Signal Processing</p> <ul style="list-style-type: none"> Warner (1998). Ch. 1, Research questions for time-series and spectral analysis studies. In <i>Spectral analysis of time series data</i> (pp. 1-12) Warner (1998). Ch. 2, Issues in time-series research design, data collection, and data entry: Getting started. In <i>Spectral analysis of time series data</i> (pp. 13-31). | |
| Oct. 7 | Data Analysis for Assignment 1 | Assignment 1 (10%) Date/Time T. B. A. |
| Oct. 14 | READING WEEK – No class | |
| Oct. 21 | Exam 1 | Exam (25%) |
| Oct. 28 | <p>Postural Control: An Overview</p> <ul style="list-style-type: none"> Shumway-Cook & Woollacott (2012). Ch. 7, Normal postural control. In <i>Motor control: Translating research into clinical practice</i>, 4th edition, (pp. 161-194). | |
| Nov. 4 | <p>Postural Control: Data collection</p> <ul style="list-style-type: none"> Rougier (2013). The influence of having eyelids open or closed on undisturbed postural control, <i>Neuroscience Research</i>, 47, 73-83. Jeka & Lackner (1994). Fingertip contact influences human postural control. <i>Experimental Brain Research</i>, 100, 495-502. | |
| Nov. 11 | <p>Postural Control: In-Class Data analysis</p> <ul style="list-style-type: none"> Raymakers et al. (2005). The assessment of body sway and the choice of stability parameters. <i>Gait and Posture</i>, 21, 45-58. Prieto et al. (1996). Measures of postural steadiness: Differences between healthy young and elderly adults. <i>IEEE Transactions on</i> | Assignment 2 (20%) Date/Time T. B. A. |

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| | <i>Biomedical Engineering</i> , 43, 956-966 | |
| Nov. 18 | Locomotion: An Overview <ul style="list-style-type: none"> Shumway-Cook & Woollacott (2012). Ch. 12, Control of normal mobility. In <i>Motor control: Translating research into clinical practice</i>, 4th edition, 315-347. | |
| Nov. 25 | Locomotion: Data collection <ul style="list-style-type: none"> Thorstensson, A. (1986). How is the normal locomotor program modified to produce backwards walking? <i>Experimental Brain Research</i>, 61, 664-68. Huang, H.-J., & Mercer, V. S. (2001). Dual-task methodology: Applications in studies of cognitive and motor performance in adults and children. <i>Pediatric Physical Therapy</i>, 13, 133-140. | |
| Dec. 2 | Locomotion: In-Class Data analysis | Assignment 3 (20%) Date/Time T. B. A. |
| T. B. A. | Exam 2 | Exam (25%) |

All assignments are due by at the day and time indicated. Penalty for a late assignment: 1 mark per day (i.e., 1 day late, a B becomes a B-, and so on).

Policies and Procedures

Missed Term Work due to Medical Illness or Other Emergency:

All students citing a documented reason for missed term work must bring their documentation to the Psychology Course Coordinator in SW427C **within three (3) business days** of the assignment due date. You must bring the following:

- (1.) A completed Request for Missed Term Work form (<http://uoft.me/PSY-MTW>), and
- (2.) Appropriate documentation to verify your illness or emergency, as described below.

Appropriate Documentation:

For missed **TERM TESTS** due to ILLNESS:

- Submit an **original** copy of the official UTSC Verification of Illness Form (<http://uoft.me/UTSC-Verification-Of-Illness-Form>) or an **original** copy of the record of visitation to a hospital emergency room. Forms are to be completed in full, clearly indicating the start date, anticipated end date, and severity of illness. The physician's registration number and business stamp are required.

For missed **ASSIGNMENTS** due to ILLNESS:

- Submit **both** (1.) a **hardcopy** of the Self-Declaration of Student Illness Form (<http://uoft.me/PSY-self-declare-form>), and (2.) the **web-based** departmental declaration form (<http://uoft.me/PSY-self-declare-web>).

For missed term tests or assignments in OTHER CIRCUMSTANCES:

- In the case of a **death of a family member**, a copy of a death certificate should be provided.
- In the case of a **disability-related concern**, an email from your Disability Consultant at AccessAbility Services should be sent directly to both the Course Coordinator (psychology-undergraduate@utsc.utoronto.ca) and your instructor, detailing the accommodations required.
- For U of T Varsity **athletic commitments**, an email from your coach or varsity administrator should be sent directly to the Course Coordinator (psychology-undergraduate@utsc.utoronto.ca), detailing the dates and nature of the commitment. The email should be sent **well in advance** of the missed work.

Documents covering the following situations are **NOT acceptable**: medical prescriptions, personal travel, weddings, or personal/work commitments.

Procedure:

Submit your (1.) [request form](#) and (2.) [medical/self-declaration](#)/other documents in person **WITHIN 3 BUSINESS DAYS** of the missed term test or assignment.

Submit to: Course Coordinator, Room SW427C, Monday – Friday, 9 AM – 4 PM

If you are unable to meet this deadline for some reason, you must contact the Course Coordinator via email (psychology-undergraduate@utsc.utoronto.ca) within the three business day window. Exceptions to the documentation deadline will only be made under exceptional circumstances.

Within approximately one week, you will receive an email response from the Course Instructor / Course Coordinator detailing the accommodations to be made (if any). You are responsible for checking your official U of T email and Quercus course announcements daily, as accommodations may be time-critical.

Completion of this form does NOT guarantee that accommodations will be made. The course instructor reserves the right to decide what accommodations (if any) will be made. **Failure to adhere to any aspect of this policy may result in a denial of your request for accommodation.**

Note that this policy applies only to missed assignments and term tests. Missed final exams are handled by the Registrar's Office (<http://www.utsc.utoronto.ca/registrar/missing-examination>).

AccessAbility:

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services as soon as possible.

AccessAbility Services staff (located in Rm SW302, Science Wing) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations [416-287-7560](tel:416-287-7560) or email ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

Turnitin:

Normally, students will be required to submit their course essays to Turnitin.com for a review of textual similarity and detection of possible plagiarism. In doing so, students will allow their essays to be included as source documents in the Turnitin.com reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the Turnitin.com web site.

Academic Integrity:

Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously. The University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/Assets/Governing+Council+Digital+Assets/Policies/PDF/ppjun011995.pdf>) outlines the behaviours that constitute academic dishonesty.

and the processes for addressing academic offences. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement;
- Submitting your own work in more than one course without the permission of the instructor;
- Making up sources or facts;
- Obtaining or providing unauthorized assistance on any assignment.

On tests and exams:

- Using or possessing unauthorized aids;
- Looking at someone else's answers during an exam or test;
- Misrepresenting your identity; and
- When you knew or ought to have known you were doing it.

In academic work:

- Falsifying institutional documents or grades;
- Falsifying or altering any documentation required by the University, including (but not limited to) doctor's notes; and
- When you knew or ought to have known you were doing so.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If students have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, they are expected to seek out additional information on academic integrity from their instructors or from other institutional resources.

Note: You may see advertisements for services offering grammar help, essay editing and proof-reading. Be very careful. If these services take a draft of your work and significantly change the content and/or language, you may be committing an academic offence (unauthorized assistance) under the *Code of Behaviour on Academic Matters*.

It is much better and safer to take your draft to the Writing Centre as early as you can. They will give you guidance you can trust. Students for whom English is not their first language should go to the English Language Development Centre.

If you decide to use these services in spite of this caution, you must keep a draft of your work and any notes you made before you got help and be prepared to give it to your instructor on request.