

**Acknowledgement of Indigenous Peoples and Traditional Territories:**

York University recognizes that many Indigenous nations have longstanding relationships with the territories upon which our campuses are located that precede the establishment of York University.

We acknowledge our presence on the traditional territories of the Mississaugas of Credit First Nation, the Huron-Wendat, the Haudenosaunee Confederacy and the Métis Nation of Ontario.

**York University**

**Faculty of Health**

**School of Kinesiology and Health Science**

- Course:** HH/KINE 3020 3.00 – Skilled Performance and Motor Learning
- Course Webpage:** eClass: [eclass.yorku.ca](http://eclass.yorku.ca)
- Term:** Fall 2023
- Prerequisites:** HH/KINE 2050 3.00 [or equivalent "Statistics" course]; HH/PSYC 2021 3.00 or SC/BIOL 2060 3.00; HH/PSYC 1010 6.00
- Course Instructors:**
- |  |   |
|--|---|
| <b>Taylor Cleworth</b><br>362 Bethune College<br>tclewort@yorku.ca<br>Office hours: by appointment | <b>George Mochizuki</b><br>363 Bethune College<br>gmochizu@yorku.ca<br>Office hours: by appointment |
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- Course Description:** This course is an introduction to the psychological principles and underlying neural mechanisms of skilled performance and motor control. In addition, experimental methods employed in the study of motor control will be demonstrated in the laboratory. Topics include the role of attention, information processing and feedback in controlling performance, as well as the contribution of the central nervous system in voluntary motor performance and motor learning.
- Laboratory Instructors:** (to be announced)
- Lectures:**
- |             |     |         |              |
|-------------|-----|---------|--------------|
| Section A : | M W | ACW 109 | 1:30 to 2:20 |
| Section B:  | M W | CLH L   | 2:30 to 3:20 |
- Laboratories:** Labs for Section A & B will be held in CB 125, 125A, 162 and 163. See the York University Course Timetables for the days and times for labs.
- \*Labs commence the week of September 18, 2023
- Drop Dates:** Last date to drop a course without receiving a grade: **Nov. 8<sup>th</sup>, 2023.**  
The Course Withdrawal Period (withdraw from a course and receive a grade of “W” on transcript) is Nov. 9 - Dec. 5, 2023.

## **Learning Outcomes:**

After completion of KINE 3020 3.0 [Skilled Performance and Motor Learning], students will be able to:

- a) describe the basic components of the human nervous system.
- b) compare and contrast different cellular components of the human nervous system.
- c) describe key processes involved in the passage of information between neurons.
- d) describe how the nervous system controls muscles and monitors body and limb positions.
- e) describe how the brain utilizes sensory information to control skilled movement.
- f) describe how various structures of the brain control human movement.
- g) identify different types of memory involved in learning.
- h) define skilled performance.
- i) describe the connotations associated with skilled behaviour.
- j) compare and contrast the common motor skill classification systems.
- k) describe methods of assessing the production and outcome of motor skills.
- l) describe characteristics of learners as they progress through stages of learning.
- m) construct a model of information processing used by skilled performers.
- n) summarize the differences in processing abilities between expert and novice performers.

## **Course Text / Readings:**

Readings will be assigned during the course and available on eClass.

## **Course Evaluation:**

Lab Assignments	20%	Weekly assignments based on labs.
Midterm exam 1	20%	Scheduled for <b>Oct. 18</b> , during lecture time.
Midterm exam 2	20%	Scheduled for <b>Nov. 22</b> , during lecture time.
Final exam	40% - 100%	During December exam period.

\*\* Exams cover material from the lectures, readings, and labs. The Final exam is cumulative \*\*

Students who do not write Midterm 1 **waive the right to receive “a specific percentage of graded feedback” prior to the drop date** for the Fall term.

## **Grading:**

The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York University. Assignments will bear either a letter grade designation or a corresponding number grade. For a full description of York’s grading system, see the York University Undergraduate Calendar. Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

***The percentage allocated for any course work not attempted/completed will be added to the final exam.***

***In the event a midterm exam is missed the percentage allocated to the exam will be added to the final. There are no make-up midterms in the course.***

An appeal against a grade assigned to an item of course work must be made in writing to the course director (Cleworth) within 7 days of the graded work being made available to the class. The result of an appeal may cause the grade to increase, decrease or remain the same.

**Students who miss the final exam** will only be allowed to write a deferred final exam if the student provides formal documentation. Formal documentation includes, but is not limited to, a doctor’s note, court-date note, or by other official documentation detailing a serious matter. For doctor’s notes, only the York University’s Attending Physician Statement found on York’s Registrar site, will be accepted.

### **Organization of the Course:**

For Fall 2023, KINE 3020 lectures and laboratories will take place in-person, on campus. Students are encouraged to attend lectures in person, as there is substantial evidence that physically attending lectures improves test/exam performance.

### **Lecture Slides and Recordings**

Lecture presentation slides are typically posted prior to lecture where possible. Barring technical issues, lectures will be recorded whenever possible, and posted after the lecture has been delivered. Lecture slides and recordings are designed to supplement lecture attendance.

The York University Student Code of Conduct specifically prohibits theft of intellectual property, which includes recording a course director's lecture without his/her permission or taking lecture material provided online, modifying it, and/or using it for your own personal use or gain. The material provided is only to be used for your personal study when you take the course for which it was created. Use in any other way will result, at the minimum, in sanctions in accordance with the York Code and may be breaking federal, provincial, or municipal laws and will be acted on accordingly.

### **Laboratories:**

Each week, commencing September 18<sup>th</sup>, you will meet with your Teaching Assistant in the designated computer lab during the scheduled lab time in which you enrolled.

Each week, you are required to read the upcoming week's lab instructions and complete a pre-lab assignment. It is to be completed prior to the start of your weekly lab time.

It is during your 2-hour lab time that you will conduct a short experiment, collect, and analyse the data and then begin (and possibly finish) your weekly lab report. Your weekly lab report is to be submitted (as a PDF file) via eClass to your TA, prior to the beginning of the following week's lab. Students must complete the pre-lab assignment and participate in the data collection portion of the lab to be able to submit the weekly lab report.

### **Lab reports that are submitted late without documentation will not be marked.**

Documentation must be included with any late assignment and the assignment must be submitted as soon as possible. If you anticipate not being able to hand in your assignment for more than two weeks from the due date for medical reasons, or for some other serious matter, you must contact the Course Coordinator (Cleworth) immediately via email. Please do NOT ask for extensions as extensions will NOT be granted.

The following statement MUST be included (and signed), in the Title Section of each lab report that is submitted:

“I confirm that the assignment I have submitted has been done independently and is my own work. I am aware of York University's policies about plagiarism and the penalties for plagiarism.”

### **Health and Safety Information:**

In this course, all university community members must comply with York's health and safety protocols. We all share in the responsibility of keeping others safe on campuses and ensuring respectful interactions with one another.

### **Please Take Care of You and Each Other:**

We continue to deal with the impact of the pandemic and its far-reaching consequences. If you need mental health help, the following list of websites (this is not an exhaustive list) may be a good place for you to start:

[Good2Talk](#)

[Student Counselling, Health and Well-being](#)

[Well-being at York](#)

[Virtual Health Clinic](#)

[York University Psychology Clinic](#)

[York International](#)

[Calumet College and Stong College Student Success Programs](#)

[Calumet College and Stong College Online Student Support](#)

## **IMPORTANT COURSE INFORMATION FOR STUDENTS**

York University seeks to provide for equal rights and opportunities without discrimination for all students. The overall aim is a climate of understanding and mutual respect for the dignity and worth of each community member so that each person feels a part of York University and is able to fully participate in university life.

The following information describes some of your important rights and responsibilities as students, along with the supports, accommodations and services made available to you by York.

**Academic Honesty and Integrity.** York students are required to maintain the highest standards of academic honesty and they are subject to the *Senate Policy on Academic Honesty* ([secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/](https://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/)). The Policy affirms the responsibility of faculty members to foster acceptable standards of academic conduct and of the student to abide by such standards. Comprehensive information about academic honesty, along with information about how to find resources at York to help improve your research and writing skills and cope with University life, can be found at: [www.yorku.ca/academicintegrity/](http://www.yorku.ca/academicintegrity/)

**Conduct in Academic Situations.** Students and instructors are expected to maintain a professional relationship characterized by courtesy and mutual respect. It is the responsibility of the instructor to maintain an appropriate academic atmosphere in the classroom and other academic settings, 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 in keeping with the *Senate Policy and Procedures on Disruptive and/or Harassing Behaviour in Academic Situations* ([secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/](https://secretariat-policies.info.yorku.ca/policies/disruptive-andor-harassing-behaviour-in-academic-situations-senate-policy/)).

**Ethics Review Process.** York students are subject to the York University *Policy for the Ethics Review Process for Research Involving Human Participants* ([secretariat-policies.info.yorku.ca/policies/ethics-review-process-for-research-involving-human-participants-policy/](https://secretariat-policies.info.yorku.ca/policies/ethics-review-process-for-research-involving-human-participants-policy/)). Ethics approval must be obtained prior to the starting any research activities involving human participants, including research conducted by students in a graduate or undergraduate course, for an undergraduate thesis or project, or for a Major Research Paper, Thesis or Dissertation. If you are in doubt as to whether this requirement applies to you, contact your Course Director immediately. More information can be found at: [www.yorku.ca/research/human-participants/](http://www.yorku.ca/research/human-participants/)

**Religious 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 the course syllabus pose such a conflict for you, contact the Course Director within 14 days of the date for which accommodation is sought. Other procedures are outlined in the York University policy, guidelines and procedures on *Academic Accommodation for Students' Religious Observances* ([secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-religious-observances-policy-guidelines-and-procedures/](https://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-religious-observances-policy-guidelines-and-procedures/)). 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 a Religious Accommodation Agreement, which can be found at: [registrar.yorku.ca/pdf/exam-accommodation.pdf](https://registrar.yorku.ca/pdf/exam-accommodation.pdf)

**Accessibility Services.** Student Accessibility Services ([accessibility.students.yorku.ca/](https://accessibility.students.yorku.ca/)) provides academic accommodations and supports for students with temporary and permanent disability including physical, sensory, medial, learning, and mental health disabilities. Students who had an Individualized Education Plan (IEP) in high school are eligible for support. Please note that registering with disabilities services and discussing your needs with your professors is necessary to avoid any impediment to receiving the necessary academic accommodations to meet your needs.

**Academic Skills Support.** York University Libraries ([www.library.yorku.ca](https://www.library.yorku.ca)) and the Learning Commons ([learningcommons.yorku.ca/](https://learningcommons.yorku.ca/)) provide students with academic support for their course assignments and research requirements. The Libraries offer an array of supports, services, workshops, resources and people available to help ensure continued success during a student's academic career.

**Centre for Human Rights, Equity, and Inclusion.** The Centre for Human Rights, Equity and Inclusion ([rights.info.yorku.ca/](https://rights.info.yorku.ca/)) facilitates confidential processes to discuss allegations of discrimination and harassment by York Community members. There are also robust training opportunities and workshops available to the community year-round.

**Counselling, Health and Well Being.** Student Counselling, Health & Well Being ([counselling.students.yorku.ca](https://counselling.students.yorku.ca)) supports students in realizing and developing their personal potential in order to maximally benefit from their university experience and manage the challenges of university life. Services include: peer-led workshops, certificate training programs, support groups, same-day and appointment-based counselling, short-term therapy, and more.

**Sexual Violence Response and Support.** The Centre for Sexual Violence Response, Support and Education ([thecentre.yorku.ca](https://thecentre.yorku.ca)) facilitates support, services and accommodations for those who have experienced sexual violence. The support offered is based on the needs and wishes of the person disclosing/reporting.

**Student Community Relations.** The Office of Student Community Relations ([oscr.students.yorku.ca/](https://oscr.students.yorku.ca/)) supports students impacted by critical incidents, facing personal crises or multiple complex issues, such as, but not limited to, critical illness or injury of a student, student death, attempted suicide and sexual assault. OSCR provides advice, referrals, alternate dispute resolution methods and judicial processes (local adjudication, tribunals).

**Lecture and Laboratory Schedule (subject to change) – KINE 3020, 2023**

<b>Week Beginning</b>	<b>Monday</b>	<b>Wednesday</b>	<b>Reading</b>	<b>Laboratory</b>
September 4	Labour Day <b>University closed NO CLASSES</b>	Introduction class	See eClass	Labs start the week of September 18.
September 11	Introduction to Nervous System	Information Transmission	See eClass	Labs start the week of September 18.
September 18	Control of Muscle	Introduction to Skilled Performance & Motor Learning	See eClass	Lab 1 Measuring Human Performance
September 25	Skilled Performance & The Information Processing Model	Measuring Performance	See eClass	Lab 2 Speed / Accuracy
October 2	Proprioception & Spinal Control of Movement	Vision & Vestibular System	See eClass	Lab 3 Error Lab
October 9	<b>[Fall Reading Week No <u>lecture</u>]</b>	<b>[Fall Reading Week No <u>lecture</u>]</b>	Review readings	No labs this week
October 16	Sensory Processing and Integration	<b>1<sup>st</sup> Midterm</b>	See eClass	Lab 4 JND (Visual)
October 23	Selective Attention - Visual & Auditory	Perception - Behavioural Aspects 1	See eClass	Lab 5 Slater Hamel/central processing
October 30	Perception - Behavioural Aspects 2	Brainstem motor pathways & Primary Motor cortex	See eClass	Lab 6 Perception: Stimulus Intensity and RT
November 6	Premotor areas Basal Ganglia (start)	Basal ganglia (cont.), Cerebellum	See eClass	Lab 7 Mental Rehearsal & Motor Performance
November 13	Motor Learning	Decision Stage	See eClass	Lab 8 Visuomotor Adaptation
November 20	Decision Stage	<b>2<sup>nd</sup> Midterm</b>	See eClass	Lab 9 Decision - Hick-Hyman
November 27	Effector Stage	Motor Programs	See eClass	Lab 10 Effector - Fitts Law
December 4	Final Class/Review	Fall Study Day No Class	Review readings	No labs
December	<b><u>Exam period</u></b> Dec. 7 – 21	<b><u>Exam period</u></b> Dec. 7 – 21	Review readings	No labs