

York University
Faculty of Health
School of Kinesiology and Health Science

Course: HH/KINE 4225 3.00: Principles of Neuro-motor learning

Course Webpage: eClass (<https://eclass.yorku.ca/eclass/course/view.php?id=57341>)

Term: Fall Term 2021

Prerequisite/Co-requisite: AS/SC/KINE 3020.03 or permission from Course Director

Course Instructor:

Dr. Taylor Cleworth

Email: tclewort@yorku.ca

Phone: 416 736 2100 ext. 22467

Teaching Assistant:

TBA

Email:

Times and Location:

This is an online course, and all course lectures, activities, and assignments can be found on eClass. Virtual lectures will be held during the scheduled time: Tuesdays and Thursdays 2:30-4:00pm.

Virtual Office hours: Please sign up on eClass to set up an appointment (all meetings will be held via Zoom). Thursdays 4:00-5:00pm or by appointment.

**** Please note that this is a course that depends on remote teaching and learning. There will be no in-class interactions or activities on campus. All times in the course outline or elsewhere related to this course are in local Toronto time. ****

Course Description:

This course reviews fundamental concepts and principles underlying how the human brain modifies and adapt movements of the body, particularly those of the arm. The course also examines motor adaptation: how the central nervous system reorganizes itself to learn new motor skills and to recalibrate reflexes and motor-control systems when growth, aging or injury alters the body and limbs.

Course Objectives:

- describe the processes and brain areas involved in adapting or learning new skills
- describe and compare key principles/features/models of motor learning
- design, conduct and analyze an experiment investigating reach adaptation

Course Text / Readings:

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

Take Care of Yourself:

We are all dealing with a tremendous amount of stress, anxiety, fear, and uncertainty as a consequence of the COVID-19 pandemic. Please be kind and gentle with yourselves and others during this difficult period of time. There are several online free resources available to help support you. If you need help, the following list of websites (this is not an exhaustive list) may be a good place for you to start:

<https://good2talk.ca/> <https://counselling.students.yorku.ca/> <https://www.yorku.ca/bettertogether/>
<https://yorkinternational.yorku.ca/>

Useful links describing computing information, resources and help for students:

<u>Student Guide to eClass</u>	https://lthelp.yorku.ca/student-guide-to-eClass
<u>Computing for Students Website</u>	https://uit.yorku.ca/student-services/
<u>Student Guide to eLearning at York University</u>	http://elearning-guide.apps01.yorku.ca/
<u>Learning Skills Services</u>	https://www.yorku.ca/scld/learning-skills/
<u>Zoom@YorkU User Reference Guide</u>	https://uit.yorku.ca/wp-content/uploads/sites/3/2012/02/Zoom@YorkU-User-Reference-Guide.pdf
<u>Zoom@YorkU Best Practices</u>	https://uit.yorku.ca/wp-content/uploads/sites/5/2020/04/Zoom@YorkU-Best-Practicesv2.pdf

Students are responsible for being actively involved in the course, and for checking eClass regularly and frequently to ensure the latest information about the course is received. “I did not know because I was not online” or “because I did not check eClass” are not excuses that will be accepted under any circumstances for the course.

Organization of the Course

KINE 4225 (F21) involves a blend of asynchronous (participate on your own and at times you choose) and synchronous (students are expected to attend and participate at specific times in live virtual/online sessions) modes of teaching. Lectures will be delivered virtually (a Zoom link will be posted on eClass), and all students are expected to attend. While attendance will not be taken, it is your responsibility to attend all lectures and presentations. In the later weeks, lecture and class discussion will be led by students (see lab project below). The lab component of the course will be completed during the scheduled lecture time and asynchronously. These times are meant for you to learn how to design and run your experiment, process and interpret data, and to participate in experiments. Be prepared to run experiments outside class hours as well.

Course Evaluation

The final grade for the course will be based on the following items weighted as indicated:

Midterm	=	25%
Lab Project Proposal	=	5%
Lab Project Presentation	=	30%
Lab Project Written Report	=	30%
Participation	=	5%
Presentation feedback	=	5%

Final course grades may be adjusted to conform to Program or Faculty grades distribution profiles.

Midterm:

There will be 1 midterm examination. Questions will be drawn from the lecture and reading material to gauge the understanding of topics covered. The format of the questions can be multiple choice, short answer, and/or essay style.

Lab Project Proposal: Prior to collecting data, students will develop a research proposal using the knowledge gained from the course and get approval from the course director. The proposal must include a brief introduction with a proposed research question, hypotheses, and proposed methodologies (for example, details on the task including number of trials). The proposal should be 1 page. Students are also required to upload the experiment file.

Lab Project presentation

Students will lead a research presentation lasting approximately 15 minutes, with 5 minutes for discussion. In the presentation, make sure to include an introduction, methods, results, and discussion/conclusion section. Further details and grading rubrics will be posted on eClass.

Lab Project Written Report:

All students must turn in a written report for the Lab Project. Each report should include a title page (title, name, date of submission, student ID), 5-10 pages of content (see below, 10-page maximum, double spaced, 12pt Times New Roman font, 2cm margin), and 1 page of references (APA reference style). At least 3 original research articles should be referenced in the report. You will be assessed on the appropriateness of the research, clarity of arguments, and writing style. The paper should include:

- 1) Introduction. Describe the goal of your experiment, and background information (similar studies). 1-2 pages
- 2) Methods. Describe your task, your participants (see other published paper for how they do it), how you analysed your data. 1-2 pages.
- 3) Results. This should include at least three main plots of your results (clearly labelled and with figure legends) and the statistical reports. 2-3 pages with figures.
- 4) Discussion/Conclusion. You should begin by summarizing your main results. Describe how your results compared to result of those published in the literature. Describe some of the limitations of your study. 2-3 pages
- 5) References: Cite your references

You are invited to submit your project paper any time after your presentation, but no later than December 14th. I recommend aiming for the last day of class, so you don't have to work on this assignment during exams.

Participation

Students are required to participate in at least 2 other lab experiments (in addition to their own). Students will be randomly assigned to each protocol but can participate in more than the assigned experiments. Therefore, all groups will have a sample size of 6 or more. Sign-up sheets and instructions will be posted on eClass.

Presentation Feedback

At the end of each presentation, all students in the audience will be required to fill out a brief peer evaluation form. These forms must be submitted on eClass by midnight on the day the presentation was given.

Example Lecture Schedule (subject to change)

Date	Lecture	Topic	Deadlines
Sept 9 th	L1	Introduction	
Sept 14 th	L2	Motor control and Motor Learning	
Sept 16 th	L3	Motor control and Motor Learning 2	
Sept 21 st	L4	Memory	
Sept 23 rd	L5	Prediction	
Sept 28 th	L6	Reach adaptation and generalization	
Sept 30 th	L7	More generalization and consolidation	
Oct 5 th	L8	Skill Acquisition 1	
Oct 7 th	L9	Skill Acquisition 2	
		READING WEEK	
Oct 19 th	E1	Midterm	
Oct 21 st	P1	Intro to experiments and design	
Oct 26 th	P1	Design	
Oct 28 th	P1/2	Design and Lab Participation	Research proposal (and exp file) due Oct 27 th
Nov 2 nd	P2/3	Lab Participation / Data processing	
Nov 4 th	P2/3	Lab Participation / Data processing	Lab participation due Nov 4 th
Nov 9 th	P4	Data analysis	
Nov 11 th	P4	Data analysis	Drop deadline Nov 12 th
Nov 16 th	P5/6	Data analysis and interpretation	
Nov 18 th	P6	Data interpretation (presentation help)	
Nov 23 rd	P7	Presentations	Presentation slides due Nov 22 nd
Nov 25 th	P7	Presentations	
Nov 30 th	P7	Presentations	
Dec 2 nd	P7	Presentations	
Dec 7 th	P7	Presentations	Written Reports due Dec 14 th
Dec 9-23		Final Exam Period (No Final for this course)	

The last date to drop a course without receiving a grade is Friday November 6, 2020.

Technical requirements for taking the course:

Since the entire course will be delivered remotely, three platforms will be used, (eClass, PyVMEC, and Zoom), through which students will interact with the course materials, the course instructor, teaching assistant, as well as with one another. Therefore, a computer with a camera and microphone is required to complete the course.

Please review this syllabus carefully to determine how the course content will be delivered, how office hours will be conducted and how assignments will be submitted.

Students must make every effort to arrange adequate internet connection, especially for tests. If a student has any concerns about their internet connection, they should seek all available options for writing their exams/tests/quizzes in a location with a stable internet connection. In the event that a student is not confident they can access a reliable internet connection, they should communicate their concerns to the course instructors well in advance of the test.

Students shall note the following:

- Zoom is hosted on servers in the U.S. This includes recordings done through Zoom.

- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Technology requirements and FAQs for eClass can be found **here** - <https://lthelp.yorku.ca/95440-student-faq>

Internet connection and speed: There are online tests, such as [Speedtest](#), that can be run to assess your internet connection and speed.

Communication: Several modes of communication with the course instructors, teaching assistants and other students have been set up to maximize communication and a sense of community.

Communicating with Instructors: The instructor can be contacted through the email (tlewort@yorku.ca). If you have questions related to course content, or general course questions please post them in the discussion forums on eClass. Instructors will also be available for virtual office hours each week via Zoom – please sign up for a time slot on eClass. When emailing, please INCLUDE YOUR FIRST AND LAST NAME AND STUDENT ID. Emails are a form of communication and the spelling, grammar and tone will reflect your communication skills. Emails should be written using professional language that would be acceptable in a workplace to a manager. Emails that include inappropriate form/language (i.e. “Hey”, “c u l8tr”, etc.) or without student name and ID will not be read or returned. Students may address the course instructor as Dr. Cleworth.

Communicating with your TA: To contact your TA, you can either post in the Discussion Forum on eClass, or email the TA and include your name, student ID, and course code.

Communicating with other students: You are highly encouraged to communicate with your fellow students through the discussion forums on eClass. You are welcome to post course-related questions, as well as study tips or helpful websites/apps.

Grading, Assignment Submission, Lateness Penalties and Missed Tests

Exams/Tests: (Synchronous mode)

The Midterm **MUST** be written at the date and time noted above. Students must make themselves available at the time scheduled for class. All times noted are local Toronto times. The Midterm is a closed book exam which means no external aids (notes, books, calculators, or other reference materials) are permitted.

Grading: The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.) For a full description of York grading system see the York University Undergraduate Calendar - <http://calendars.registrar.yorku.ca/2010-2011/academic/index.htm>

Re-Evaluation Policy:

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. **You cannot submit**

'extra' work following the posting of a mark in order to raise a grade. For further details:

<https://myacademicrecord.students.yorku.ca/grade-reappraisal-policy>

Assignment Submission: Proper academic performance depends on students doing their work not only well, but on time. Accordingly, assignments for this course must be received on the due date specified for the assignment. Assignments are to be handed in online on eClass, instructions for submission will be described in class and available on eClass. The course instructor will also make announcements on eClass to inform students regarding submissions process.

Lateness Penalty: Assignments received later than the due date will be penalized (10% per day the assignment is late). Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained by the course instructor but will require supporting documentation (e.g., a doctor's letter).

Missed Tests: If you miss a lecture test for a legitimate reason (i.e. illness), you are expected to email the instructor (tclewort@yorku.ca) and attach the Faculty of Health Missed Test Documentation (<https://www.yorku.ca/health/academic-resources/missed-test-form/>) within 7 calendar days of the test to be considered for a deferred test. No further supporting documentation is required.

If you begin a test and it is interrupted due to technology issues (i.e. lost internet connection), email the instructors (tclewort@yorku.ca) or call in to the zoom number provided (see eClass) IMMEDIATELY. On a case-by-case basis, the instructor will either re-open the test or assign a deferred test.

If you know IN ADVANCE that you will be missing a test, please notify the instructors (tclewort@yorku.ca) at least 7 calendar days ahead of the test and attach relevant documentation, so that appropriate accommodations can be made.

Academic Honesty and Integrity

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. Breaches of academic integrity range from cheating (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.) to aiding and abetting (helping someone else to cheat). All breaches in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty.

The School of Kinesiology and Health Science takes academic dishonesty very seriously and will abide by York University's Senate Policy of Academic Honesty to adjudicate all cases. Students are expected to make efforts to discourage any and all (un)intentional breaches from their course work. Students are expected to complete their own work without assistance, in part or whole, on assignments and tests. Students are expected to act in accordance with the Senate Policy of Academic Honesty and are responsible for familiarizing themselves with these guidelines. Breaches of academic integrity will be handled under the disciplinary proceedings as outlined in:

<https://www.yorku.ca/secretariat/policies/policies/academic-honesty-senate-policy-on/>.

Test Viewing:

Students may book an office hour appointment to discuss their tests and study strategies with the instructor, but due to the nature of online exams and the risk of questions becoming available unfairly to those who have not completed the tests, specific test questions will not be made available for viewing. Please be aware that the instructors will personally examine all test questions after the completion of each test to ensure that no issues exist with respect to grading or question clarity. If the instructors do identify any issues, student grades will be automatically corrected accordingly.

Student Code of 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 environment, and the responsibility of the student to cooperate in that endeavor. Students must conduct themselves in accordance with York University's Student Code of Conduct. This includes all aspects of the course, including online environments. A statement of the policy and procedures involving disruptive and/or harassing behaviour by students in academic situations is available at: <https://oscr.students.yorku.ca/student-conduct>.

Student Code of Rights and Responsibilities:

This code is intended to be educative and promote accountability among students toward their peers and other members of the York community. This code identifies those behaviours that are disruptive to the educational purposes of the University, make the campus less safe, diminish the dignity of individuals and groups, and the enjoyment of their rights. It applies specifically to students because the behaviours of non-student members of the University community are held to comparable standards of account by provincial laws, University policies, and their unions' collective agreements. Information about how to address a concern or a complaint regarding a faculty or staff member can be found at: <http://oscr.students.yorku.ca/>.

Test Banks:

The offering for sale of, buying of, and attempting to sell or buy test banks (banks of test questions and/or answers), or any course specific test questions/answers is not permitted in the Faculty of Health. Any student found to be doing this may be considered to have breached the [Senate Policy on Academic Honesty](#). In particular, buying and attempting to sell banks of test questions and/or answers may be considered as "Cheating in an attempt to gain an improper advantage in an academic evaluation" (article 2.1.1 from the Senate Policy) and/or "encouraging, enabling or causing others" (article 2.1.10 from the Senate Policy) to cheat.

Lecture and laboratory tests are to be taken by the student and no one else. It is the expectation of the instructors that these are closed-book tests. Websites should not be accessed while you are taking a test – doing so may result in the immediate closing of the online test and instructors will not re-open a test in this situation.

Accessibility:

York University provides services for students with accessibility concerns (including physical, medical, learning, and psychiatric), who require accommodation related to teaching and evaluation methods/materials. It is the student's responsibility to register with Student Accessibility Services as early as possible to ensure that appropriate academic accommodation can be provided with advance notice. You are encouraged to email a copy of your accommodation letter to your instructors as early as possible in the semester, and to schedule a time early in the term to meet with your instructor to discuss your accommodation needs. Failure to make these arrangements may jeopardize your opportunity to receive academic accommodations. Requiring accommodation does not relieve students from following course policies. Student Accessibility Services can be accessed here: <https://accessibility.students.yorku.ca/>.

Important Information for Students:

All students are expected to familiarize themselves with the following information, available on the [Senate Committee on Academic Standards, Curriculum & Pedagogy](#) website.

- [Senate Policy on Academic Honesty](#) and the [Academic Integrity Website](#)
- [Ethics Review Process for research involving human participants](#)

- [Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities](#)
- [Student Conduct Standards](#)
- [Religious Observance Accommodation](#)