

Western HealthSciences

School of Kinesiology

Movement Neuroscience 3480A, Fall 2025

Campus Supports

Western University is committed to a **thriving campus**. For help with:

- Both physical and mental health, go to [Wellness & Wellbeing](#)
- Studying with disabilities, go to [Accessible Education](#)
- Writing skills, go to the [Writing Support Centre](#)
- Learning skills and strategies, go to [Learning Development & Success](#)
- Contacting the ombudsperson, go to the [Office of the Ombudsperson](#)



Your course coordinator can also **guide you** to available campus resources and/or services.

Technical Requirements



Stable internet connection



Laptop computer



Calculator

Important Dates

Classes Begin	Reading Week	Classes End	Study day(s)	Exam Period
September 4	November 3–9	December 9	December 10	December 11–22

September 30, 2025, is National Day for Truth and Reconciliation and is a non-instructional day

December 1, 2025: Last day to withdraw from a first-term half course without academic penalty

Contact Information

Course Coordinator/instructor	Contact Information	Office Hours
Dr. Matthew Heath	mheath2@uwo.ca	Wednesdays 10:30-12:30

Teaching Assistant(s)	Contact Information	Office Hours
TBD	TBD	TBD

NOTE: All course information including grades, assignment outlines, deadlines, etc. are available via [OWL Brightspace](#). Download the Brightspace Pulse App to stay up-to-date on course communication and enable your notification settings within “Communications” in the top toolbar. Check the website regularly for course announcements. If you need assistance, visit [OWL Brightspace Help](#) or contact the [Western Technology Services Helpdesk](#). They can be contacted by phone at 519-661-3800 or ext. 83800.

Calendar Course Description (including prerequisites/anti-requisites):

This course is designed to provide students with an intermediary level and multi-disciplinary understanding of the movement neurosciences. Topics include nervous system structures involved in the planning, control and learning of movement, as well as the neurocognitive principles of movement. Students will also be introduced to neuropathology (e.g. Parkinson's disease) and the relationship to motor impairment.

Prerequisite(s): Kinesiology 2230A/B, Kinesiology 2241A/B and any of the following courses: Kinesiology 1080A/B; Kinesiology 2222A/B; Health Sciences 2300A/B; the former Health Sciences 2330A/B; Nursing 1330A/B; Anatomy and Cell Biology 2200A/B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

NOTE: If you wish to enroll in this course without the stated pre-requisite(s), you must obtain written approval from the course instructor. The approval should then be forwarded to your academic counsellor.

Delivery Mode: [in-person]

Component	Date(s)	Time
Lecture	M, W, F	12:30 pm - 1:20 pm

My Course Description

The course begins with an overview of the methodologies used in the movement neurosciences (e.g., EEG, fMRI, TCD) and the central nervous system structures supporting motor, cognitive and cognitive-motor processes. This course will also examine the role of movement in neuroplasticity and brain health and provide the opportunity to refine critical thinking and interpretation skills. Course content details can be found at OWL BrightSpace

Learning Outcomes

Upon successful completion of this course, you will be able to:

1. Identify and apply knowledge of central nervous system structure and function.
2. Understand the fundamental methodologies used in the movement neurosciences.
3. Critically evaluate and interpret research in the movement neurosciences.
4. Communicate (written & oral) effectively.
5. Engage in meaningful discussion with peers.

Course Content and Schedule

Week	Topic	Study material	Things due
1	Executive function	See BrightSpace	
2	Executive function	See BrightSpace	Assignment 1
3	Measurement techniques	See BrightSpace	

Week	Topic	Study material	Things due
4	Measurement techniques	See BrightSpace	
5	CNS structure and function	See BrightSpace	Test 1: tentative
6	CNS structure and function	See BrightSpace	Assignment 2
7	CNS structure and function	See BrightSpace	
8	CNS structure and function	See BrightSpace	Test 2: tentative
9	Information processing and CNS	See BrightSpace	
10	Memory, attention and CNS	See BrightSpace	Assignment 3
11	Sensory control mechanisms	See BrightSpace	
12	Sensory control mechanisms	See BrightSpace	Assignment 4
13	Sensory control mechanisms	See BrightSpace	
14	Sensory control mechanisms	See BrightSpace	Oral Presentation

Course Materials You Must Acquire and Their Costs

- All materials for this course are available at no cost on BrightSpace.

Assessments and Evaluation

Below is the evaluation breakdown for the course. Any deviations will be communicated.

Assessment	Format	Weight	Due Date	Flexibility	Learning Outcome
Test 1 ¹	Mixed format	20%	Oct 3 (tentative)	Not applicable - Designated Assessment	All
Test 2 ²	Mixed format	15%	Oct 31 (tentative)	Non - Designated Assessment	All
Article Assignments ³	Written	20%	See below	Drop lowest assignment	All
Oral Presentation	Oral	20%	Dec 5	Not applicable - Designated Assessment	All
Final Exam ⁵	Mixed format	25%	TBA	Not applicable	All

Tests 1 and 2 are completed in-person during regular lecture hours.

Notes:

1. Designated Assessment: This assessment has been designated as being central to the evaluation of learning outcomes in this course. Accordingly, students must provide documentation for any absence from this evaluation. If you miss this evaluation, you must complete the makeup assessment as determined based on consultation with the Academic Counseling office. The makeup assessment is an extension of Test 1 and/or 2, and so you will need to present documentation for this assessment, should you need to miss it. Please note that there is only one makeup assessment for each test. Students approved to miss the makeup will have the weight of this assessment transferred to the final exam. Students must not provide medical or compassionate documentation to the instructor.
2. Non-Designated Assessment: If you do not complete this test on the specified test date then this weight will be redistributed to Test 1 (i.e., 27.5%) and the Final Exam (i.e., 32.5%).
3. This course has four article assignments and the three article assignments with the highest marks will be counted towards your final grade. Academic consideration requests will be denied for the first missed assignment. Academic Consideration requests may be granted when students miss more than one assignment. These additional missed assignments will be provided a revised due date based on consultation with the Academic Counselling office.
4. Designated Assessment: This assessment has been designated as being central to the evaluation of learning outcomes in this course. Accordingly, students must provide documentation for any absence from this evaluation. If you miss this evaluation, you must submit the assessment per the revised due date as set with consultation from the Academic Counseling office.
5. You cannot use undocumented absences for final exams.

General information about assessments

- ☒ All assignments are due at 4:30 pm (London, ON current time zone) unless otherwise specified
- ☒ Students are responsible for ensuring that the correct file version is uploaded; incorrect submissions including corrupt files could be subject to a grace of zero
- ☒ Written assignments will be submitted to Turnitin (statement in policies below)

- ✓ A student might not receive the same grade as their group members if it is determined that the distribution of work was not equal
- ✓ After an assessment is returned, students should wait 24 hours to digest feedback before contacting their evaluator; to ensure a timely response, reach out within 7 days
- ✓ Prior to the filing of a written request for relief, students must attempt to resolve the concern regarding a mark or grade through informal consultation with the instructor. If the student is dissatisfied with the decision of the instructor or does not receive a decision from the instructor, a written request for relief must be submitted to the Undergraduate Chair of the School offering this course, within three (3) weeks from the date that the mark was issued.

The table below outlines University-wide grade descriptors.

Table 7: University-wide grade descriptors

Letter grade	Number grade	Description
A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

Rounding of Grades (for example, bumping a 79 to 80%)

This is a practice some students request. The final grade documented is the grade that you have achieved. There is no rounding to the next grade level, or 'giving away' of marks. Please don't ask me to do this for you; the response will be "please review the course outline where this is presented".

Information about late or missed assessments:

- ✓ Late assessments without academic consideration will be assigned a grade of zero.
- ✓ If a make-up for Test 1 or 2 is not completed without approval a grade of zero will be assigned.

Course-specific conditions:

Article Summaries (20%): Four article summaries will be assigned with each relating to a research theme arising from lectures. **You are required to submit three of the four article summaries.** You will be responsible for reading and completing a two-page written summary of the article (Note: your write-up will not exceed a two-page limit). The format of the write-up will entail double-spacing with all margins set at 2.54 cm and written via Times New Roman 12-point font. The assignment will be uploaded to OWL as a MSWORD document. Only MSWORD documents will be accepted. Your written summary is to outline the article's theoretical background (i.e., the basis for the study), methods, results and conclusions. Your summary will be succinct and clear and demonstrate your extant understanding of the article. As such, summaries will be graded for the effectiveness and efficiency of writing (~25% of grade) and for demonstrating competence in understanding theory (25%), methods/results (25%) and conclusions (25%). For theory-based articles, 50% of the grade will be based on an understanding of theory (i.e., there will be no 25% evaluation of methods/results). Article summaries are to be submitted to the appropriate OWL BrightSpace dropbox.

Article Summary	Due Date
TBD	Sept 12, 2025 (<i>tentative</i>)
TBD	Oct 10, 2025 (<i>tentative</i>)

TBD	Nov 14, 2025 (<i>tentative</i>)
TBD	Nov 28, 2025 (<i>tentative</i>)

1. Test 1 (20%): The test will be completed in-person during regular class hours (50-min duration) and will include multiple choice and short answer questions related to material associated with lectures.
2. Test 2 (15%): The test will be completed in-person during regular class hours (50-min duration) and will include multiple choice and/or short answer questions related to material associated with lectures.
3. Oral Presentation (20%): Oral presentations will be 15-min in duration and will be recorded and uploaded to the course OWL BrightSpace site (i.e., the file format must be mp4) by December 5, 2025 at 4:30 pm EST. Oral presentations are group-based and are to be completed with a maximum of four members per group. The presentation will cover a pertinent or emerging area specific to the how zero/microgravity impact motor, sensory and or combined sensorimotor control. For example, you can select a specific theoretical area of movement neuroscience (e.g., reaching and grasping, posture, gait) and provide a presentation of relevant and recent space-related research in that area. The format of the presentation will entail PowerPoint slides or other similar media. Each member of the group must speak during the presentation and a relatively equal amount of time should be provided to each member. Information for your presentation should be compiled via a combination of scientific text and original research articles. I recommend PubMed to research your topic area (see web link below). I strongly discourage web-based mediums such as Wikipedia or google; these websites are not fully vetted for factual correctness. The evaluation will be based on individual and group performance. If you do not participate in this assignment and do not appear in the group video you will receive a grade of zero.
4. Final Exam (25%): The Final Exam is scheduled by the Registrar's Office and will include multiple choice and/or short answer responses to material associated with lectures. The exam will be completed online and in-person. **The Final Exam is non-cumulative.**

Instructor Communication/Email Policy:

Who to contact for your concerns or questions: If you have a question, please first consult this syllabus and the course website; there is a good chance your question can be answered through these resources, especially regarding course logistics or content (e.g., deadlines, assignments, and course material). You are also encouraged to use the forum on BrightSpace to post questions to your peers and check to see if your question has already been answered. If you cannot find an answer to your question on the syllabus or course website, you may contact the instructor; however, the preferred means of contact is via office hours.

Email inquiries to instructor: For all email responses, please permit a minimum of 24 hours before a response can be expected (i.e., you are unlikely to receive a response the night before a quiz/assignment and will not receive a timely response to an email sent on the weekend or holiday). It is encouraged that view any email as your chance to practice professionalism. Consider that your communication style is a direct reflection of you as a person. Hence, when sending an email include appropriate salutation and valediction and ensure proper syntax, grammar and punctuation.

INC (Incomplete Standing): If a student has been approved by the Academic Advising Office (in consultation with the instructor/department) to complete term work at a later date, an INC will be assigned. Students with INC will have their course load in subsequent terms reduced to allow them to complete outstanding course work. Students may request permission from Academic Advising to carry a full course load for the term the incomplete course work is scheduled.

SPC (Special examination): If a student has been approved by the Academic Advising Office to write a Special Examination and the final exam is the only outstanding course component, an SPC will be assigned. If the class has a makeup exam, the student is expected to write the makeup exam. If the class doesn't have a makeup exam or the student misses the makeup exam for reasons approved by the Academic Advising Office, the student will write the exam the next time the course is offered. Outstanding SPCs will reduce the course load for the term the exam is deferred as outlined in [Types of Examinations](#) policy

Academic Policies and Statements

Support Services

There are various support services around campus and these include, but are not limited to:

1. Academic Support and Engagement - <http://academicsupport.uwo.ca>
2. Wellness and Well-being - <https://www.uwo.ca/health/>
3. Registrar's Office -- <http://www.registrar.uwo.ca/>
4. Ombuds Office -- <http://www.uwo.ca/ombuds/>

The websites for Registrarial Services (<http://www.registrar.uwo.ca>), and the same for affiliated university colleges when appropriate, and any appropriate Student Support Services (including the services provided by the USC listed here: <http://westernusc.ca/services/>) and the Student Development Services, should be provided for easy access.

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://www.uwo.ca/health/>) for a complete list of options about how to obtain help.

Statement on Gender-Based and Sexual Violence

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

Statement on Harassment and Discrimination

Western is committed to providing a learning and working environment that is free of harassment and discrimination. All students, staff, and faculty have a role in this commitment and have a responsibility to ensure and promote a safe and respectful learning and working environment. Relevant policies include Western's Non-Discrimination/Harassment Policy (M.A.P.P. 1.35) and Non-Discrimination/Harassment Policy – Administrative Procedures (M.A.P.P. 1.35). Any student, staff, or faculty member who experiences or witnesses' behaviour that may be harassment or discrimination **must report the behaviour** to the Western's Human Rights Office. Harassment and discrimination can be human rights-based, which is also known as EDI-based, (sexism, racism, transphobia, homophobia, islamophobia, xenophobia, antisemitism, and ableism) or non-human rights-based (personal harassment or workplace harassment).

Student Code of Conduct

The purpose of the Code of Student Conduct is to define the general standard of conduct expected of students registered at Western University, provide examples of behaviour that constitutes a breach of this standard of conduct, provide examples of sanctions that may be imposed and set out the disciplinary procedures that the University will follow. For more information, visit <https://www.uwo.ca/univsec/pdf/board/code.pdf>

Absence from Course Commitments

Students must familiarize themselves with the Policy on [Academic Consideration – Undergraduate Students in First Entry Programs](#)

Students missing course work for medical, compassionate, or extenuating circumstances can request academic consideration by completing a request at the [central academic consideration portal](#). Students are permitted one academic consideration request per course per term **without**

supporting documentation. Note that supporting documentation is **always** required for academic consideration requests for examinations scheduled by the office of the registrar (e.g., December and April exams) and for practical laboratory and performance tests (typically scheduled during the last week of the term).

Students should also note that the instructor may **designate** one assessment per course per term that requires supporting documentation. This designated assessment is described elsewhere in this document. Academic consideration requests may be denied when flexibility in assessment has already been included. Examples of flexibility in assessment include when there are assessments not required for calculation of the final grade (e.g. 8 out of 10 quizzes), when there is flexibility in the submission timeframe (e.g. 72 hour no late penalty period), or when timed assessments (e.g., quizzes) are available over an extended period of time (e.g., when you are given a 72 hour time period to start – and finish – the assessment).

Please note that academic considerations in this course are granted by the academic advisors in your home unit and implemented by the instructor of this course in accordance with information presented in this course syllabus. Supporting documentation for academic considerations for absences due to illness should use the [Student Medical Certificate](#) or, where that is not possible, equivalent documentation by a health care practitioner. If your absence relates to accommodations that are already supported by [Accessible Education](#), please work with your accessible education counsellor regarding your missed course work.

Accommodation for Religious Holidays

Students should review the policy for [Accommodation for Religious Holidays](#). Where a student will be unable to write examinations and term tests due to a conflicting religious holiday, they should inform their instructors as soon as possible but not later than two weeks prior to writing the examination/term test. In the case of conflict with a midterm test, students should inform their instructor as soon as possible but not later than one week prior to the midterm.

Special Examinations

A Special Examination is any examination other than the regular examination, and it may be offered only with the permission of the Dean of the Faculty in which the student is registered, in consultation with the instructor and Department Chair. Permission to write a Special Examination may be given on the basis of compassionate or medical grounds with appropriate supporting documents. To provide an opportunity for students to recover from the circumstances resulting in a Special Examination, the University has implemented Special Examination dates. The Faculty of Health Sciences has set School-specific dates for these Special Examinations. Please speak with your instructor about the date on which the Special Examination for this course will be held.

Scholastic Offences

Scholastic offences are taken seriously and students are directed to read the policy on [Scholastic Discipline for Undergraduate Students](#).

Plagiarism

Student work is expected to be original. Plagiarism is a serious academic offence and could lead to a zero on the assignment in question, a zero in this course, or your expulsion from the university. You are plagiarizing if you insert a phrase, sentence or paragraph taken directly from another author without acknowledging that the work belongs to him/her. Similarly, you are plagiarizing if you paraphrase or summarize another author's ideas without acknowledging that the ideas belong to someone else. All papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to

the system. Use of the service is subject to the licensing agreement, currently between Western University and Turnitin.com (www.turnitin.com).

Use of Artificial Intelligence for the Completion of Course Work

Within this course, you may only use artificial intelligence tools (e.g., “ChatGPT”) in ways that are specifically authorized by the course instructor. All submitted work must reflect your own thoughts and independent written work.

Re-submission of Previously Graded Material

Without the explicit written permission of the instructor, you may not submit any academic work for which credit has been obtained previously, or for which credit is being sought, in another course or program of study in the University or elsewhere.

Use of Statistical Pattern Recognition on Multiple Choice Exams

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Accessible Education (AE) at 661-2111 x 82147 for any specific question regarding an accommodation or review [The policy on Accommodation for Students with Disabilities](#). If you think you may qualify for ongoing accommodation (e.g. separate room to write exams, flexibility with deadlines, etc.) that will be recognized in all your courses, we encourage you to visit [Accessible Education](#) for more information.

Correspondence Statement

The centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner. Students are further expected to attend to announcements presented through Brightspace, and to read emails generated in this way.

Use of Electronic Devices

During Exams

Unless you have medical accommodations that require you to do so, or explicit permission from the instructor of the course, you may not use any electronic devices (e.g., cell phones, tablets, cameras, smart glass, smart watches, or iPods) during ANY tests, quizzes, midterms, examinations, or other in-class evaluations. **These devices MUST either be left at home or with your belongings at the front of the room. They MUST NOT be at your test/exam desk or in your pocket. Any student found with a prohibited device will be referred for investigation of a Scholastic Offence, per the policy listed above. The typical first-offence penalty for possession of a prohibited device is zero on the test or exam.**

During Lectures and Tutorials

Although you are welcome to use a computer during lecture and tutorial periods, you are expected to use the computer for scholastic purposes only, and refrain from engaging in any activities that may distract other students from learning. From time to time, your professor may ask the class to turn off all computers, to facilitate learning or discussion of the material presented in a particular class.

Copyright and Audio/Video Recording Statement

Course material produced by faculty is copyrighted and to reproduce this material for any purposes other than your own educational use contravenes Canadian Copyright Laws. Unless explicitly noted otherwise, you may not make audio or video recordings of lectures – nor may you edit, re-use, distribute, or re-broadcast any of the material posted to the course website.

Contingency Plan for an In-Person Class Pivoting to 100% Online Learning

In the event of a situation that requires this course to pivot to online content delivery, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on Brightspace for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of Zoom-bombing a class or of other serious online offenses may be subject to disciplinary measures under the Code of Student Conduct.

Online Proctoring

Tests and examinations in this course may be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service. More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at: <https://remoteproctoring.uwo.ca>.

Academic Appeals and Scholastic Offences

Students can file a **request for relief from academic decisions** if the request is based on one or more grounds listed in the policy. Students can read more about the policy [here](#) and a link to the procedures is listed in the Support Services sections of this document.

Students may **appeal** some academic and scholastic disciplinary decisions by a Dean or their designate, to the Senate Review Board Academic (SRBA). Students can read more about the policy [here](#) and a link to the procedures is listed in the Support Services section of this document.