

**KIN4480B - Exercise Neuroscience
 Winter 2025**

<p>Instructor: Dr Leena Shoemaker, PhD Email: lshoemak@uwo.ca Office Hrs: Immediately after Wednesday class AND by appointment</p> <p>TAs: TBD</p>	<p>Lectures: M, W, F 8:30 am -9:20 am</p> <p>Winter 2023 Instruction Mode: In-person lectures (SH-2355)</p>
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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.

<p>Calendar Course Description (including prerequisites/anti-requisites): This course will examine the relationship between exercise and cognitive neuroscience. Students will be provided with an overview of fundamental methodologies used in cognitive neuroscience research before examining the literature on exercise neuroscience, with a focus on different study designs and application to various age groups and clinical populations.</p> <p>Prerequisite(s): None.</p> <p>Extra Information: 3 lecture hours per week (in-person and online).</p>

You are responsible for ensuring that you have successfully completed all course pre-requisites, and that you have not taken an anti-requisite course.

Statement on Prerequisite Checking

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.

My Course Description

Welcome! This course is intended to provide you with an overview of the field of exercise neuroscience. We will begin with an overview of the fundamental methodologies used in neuroscience (e.g., EEG, MRI) before examining the literature – from classic studies to the newest cutting-edge findings – in this exciting field. In this course, you will have the opportunity to refine your critical thinking, interpretation, and academic writing skills. Throughout the course you are expected to participate in meaningful, engaging discussions.

Personal Teaching Approach

I design each lecture to facilitate a productive learning environment. It is my goal that throughout the course you will gain a new understanding of concepts related to exercise neuroscience and gain various new academic skills, such as critical thinking, writing, presenting, and reflective practice. As such, each lecture will focus on facilitating a better understanding of the content from your readings and provide an opportunity to critically analyze relevant literature. Broadly, by the end of the term I

hope you will gain appreciation (and critical eye!) for experimental design in exercise neuroscience and that you get excited to apply your new knowledge.

Research shows that students who participate have a deeper understanding of course content and are more likely to obtain a better grade in the course. Therefore, I aim to facilitate your learning through multiple avenues of participation. For example, Friday “lectures” will host small-group discussions (lead by a TA). I will also provide multiple opportunities for “inquisitive interactions” with your peers, which ultimately builds a deeper understanding of the course content. Please talk to me if you have any concerns (e.g., social anxiety, disabilities etc) about the inclusivity and/or accessibility of these activities. I want to ensure that all students have equal opportunities to succeed in this classroom environment and will make changes accordingly.

Lastly, my job is to educate you, which partly involves assisting you to learn academic content, and partly equipping you with skills to continue your own learning. Therefore, there are multiple avenues of learning assistance offered to you throughout this course. I encourage you to utilize these avenues in the following order:

- (1) Utilize course resources. This includes your notes taken during lecture, information in OWL, your textbook, and required readings.
- (2) Attend every lecture prepared and ready to ask questions.
- (3) You may contact your TA at the email provided to you with additional questions if they are not available to be answered in your readings, this course outline, or in class.
- (4) Attend my office hours or request additional support by appointment or via email. I am happy to help, but it defeats the educational value if you have not done your own work first.

Learning Outcomes:

Upon completion of this course you will be able to:

1. Understand the fundamental methodologies used in exercise neuroscience research
2. Critically evaluate and interpret research in the field of exercise neuroscience
3. Communicate (written & oral) effectively
4. Engage in meaningful discussion with peers

Communication:

Office hours & appointments: If you have questions about course material or would like to discuss issues related to the course in more detail, you can: 1) discuss during office hours (immediately after class on Monday – location TBD), 2) email your assigned TA or the instructor.

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, course materials). 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 or TAs.

Email inquiries to instructor: For all email responses, please permit 48 hours before a response can be expected (i.e., you are unlikely to receive a response the night before a midterm/assignment). I also encourage you to view email as your chance to practice your professionalism. Consider that your communication style is a direct reflection of you as a person!

Required Course Material:

All course information including grades, assignment outlines, deadlines, etc. are available via Brightspace. There is no textbook for this course. Required readings will be provided in PDF form on Brightspace one week in advance.

Schedule (subject to change)

Week	Topics	Schedule & Deadlines
Week 1: Jan. 6-10	Introduction <i>What is “exercise neuroscience”?</i>	No lecture Friday Jan 10 th Sign-up for Discussion groups.
Week 2: Jan. 13-17	Cognition & the brain Neuroimaging basics	Form groups of 4-5 and sign-up for presentation on OWL (by Friday 17 th) Discussion Forum #1
Week 3: Jan. 20-24	Acute exercise	
Week 4: Jan 27 – 31	Cross-sectional and longitudinal studies	Groups 1 & 2 Presentation Wednesday Discussion Forum #2
Week 5: Feb. 3-7	Exercise interventions	Assignment 1 due Monday February 3rd Groups 3 & 4 Presentations Wednesday Discussion Forum #3
Week 6: Feb. 10-14	Exercise interventions	Groups 5 & 6 Presentations Wednesday
Week 7: Feb. 17-21	NO CLASS – READING WEEK	
Week 8: Feb 24 – 28	Intro to Clinical populations	Midterm Wednesday February 26th
Week 9: Mar. 3-7	Clinical populations	Groups 7 & 8 Presentations Wednesday Discussion Forum #4
Week 10: Mar. 10-14	Clinical populations (Class Choice)	Assignment 2 due Monday March 10th Groups 9 & 10 Presentations Wednesday Discussion Forum #5
Week 11: Mar. 17-21	Physical activity in childhood & adolescence	Groups 11 & 12 Presentations Wednesday
Week 12: Mar 24 - 28	Mechanisms	Groups 13 & 14 Presentations Wednesday Discussion Forum #6
Week 13: Mar 31 – Apr 4	Assignment 3 Tutorial Wrap-up	Assignment 3 (Final) due Friday April 4th

Course Evaluation:

	Overall Grade %	Due Date
1. Assignment #1	10%	Monday, February 3 rd at 11:55 pm
2. Midterm	16%	Wednesday, February 26 th
3. Assignment #2	12%	Monday, Marth 10 th at 11:55 pm
4. Group presentation	15%	Student Choice (Sign-up via Brightspace)
5. Participation in Two Group Discussions	10% (2 x 5%)	Student Choice (Sign-up via Brightspace)
6. Participation in Six Discussion Forums	12% (5 x 2.4%)	See Schedule, <i>closes Fridays at 11:55 pm</i>
7. Assignment #3 - Grant Proposal	25%	Friday, April 4 th at 11:55 pm

Course Evaluation Details:

Midterm Exam (16%): In-person and closed-book exam written during class time (i.e., 8:30-9:20 am on February 26th in SH-2355). The exam will consist of multiple choice, fill-in-the-blank, and short answer questions. Exam content will cover assigned readings and lecture materials from Weeks 1-6. Please note that the midterm will require documentation to be eligible to obtain academic considerations. **The makeup midterm exam will be scheduled for March 7th at 8:30 am to 9:20 am (during class time) and takes priority over scheduled Discussion Groups, which will be rescheduled if necessary. Please note that the format will remain the same, but the questions will be altered. In-person location TBD.**

Assignments (47%): There are a total of 3 written assignments to be completed during this course. Detailed instructions for each assignment will be posted on Brightspace a **minimum of 3 weeks** prior to the due date. All assignments must be completed independently. **Assignments must be submitted via Brightspace before the deadline (11:55 pm) or will receive an automatic 5% deduction, plus 5% for each additional 24 hours late. If the assignment is more than five days late, the assignment will be marked as 0%. New deadlines for situations requiring academic considerations will be approved on a case-by-case basis.**

Formatting: APA style is the approved style of writing for all assignments produced for this course. Please refer to Western University Library webpage for information on citation style and format or consult the APA publication manual: Publication manual of the American Psychological Association (6th ed.). (2009). Washington, DC: American Psychological Association.

Group presentation (15%): During the first week of classes, you will sign up in groups of 5 for a presentation date on OWL. On your presentation day, you will share details of a scientific research article that your group independently found that relates to the topic of that week. You must send your research article to the instructor a minimum of one week prior to your presentation for approval. Together, your group will prepare a powerpoint & zoom (or similar) presentation (approx. 15 minutes). Each member of your group must speak during the presentation. Your group will receive a group mark (12% - rubric will be provided in advance) and an individual contribution mark from your group members (3%, anonymous). The instructor reserves the right to re-arrange group assignments if necessary to accommodate certain individuals. **YOU MUST SEND YOUR COMPLETE PRESENTATION TO THE INSTRUCTOR BY 12:00PM ON YOUR PRESENTATION DAY.**

Participation in Group Discussions (10%): You will sign up for TWO group discussion sections throughout the semester. Each will be worth 5% of your final mark. These will typically take place during Friday class time. However, there will be additional sessions to accommodate those with alternate schedules. Discussions will be based on an assigned reading and will be lead by one of your TAs. **Please contact your TA or course instructor as soon as possible if you need to reschedule your chosen Group Discussion time slot. Due to the flexibility of scheduling these assessments, any rescheduling needs to be communicated 24 hour in advance or an academic consideration request will be required. If a student cannot make the last week of Discussion Groups, then the instructor will organize an additional timeslot.**

Participation in Discussion Forums (12%): You will participate in SIX discussion forums on Brightspace (see Schedule above for specific dates). Of these, **the lowest grade will be dropped. Therefore, each discussion forum (best five of six) is worth 2.4%** of your overall grade. The forum will open on Mondays at 8:30am and remain open until the following Friday at 11:59pm. Marks will be given for completion of two posts (one in response to the Guiding Question and one in response to a student post), critical thinking, reference to course content and related scientific literature, as well as adherence to APA formatting and the minimum word count. Details to be provided on Brightspace. **Academic consideration requests may be denied due to the flexibility of assessment (i.e., large timeframe for submission and dropping of the lowest mark). Missed discussion forums will result in a mark of zero unless academic considerations are provided.**

Basic Needs Statement

The uncertainty and inability to maintain a sufficient diet can affect your grades, energy level, and concentration, as well as your performance today and, ultimately, your prospects. Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to connect with the [Food Support Services](#) by University Student's Council. This initiative provides access to food banks (room 40F, UCC building) and [food hampers](#) to all Western students. Furthermore, if you feel comfortable speaking to me about such topics, I am happy to provide additional resources on campus and within London.

Statement on Gender-Based and Sexual Violence

Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who is going through or has gone through these traumatic events. If you are experiencing or have experienced GBSV (either recently or in the past), you will find information about support services for survivors, including emergency contacts, at the following website: <https://www.uwo.ca/health/gbsv/support/>. To connect with a case manager or set up an appointment, please contact support@uwo.ca.



Land Acknowledgement

I acknowledge that Western University is located on the traditional lands of the Anishinaabek (Ah-nish-in-a-bek), Haudenosaunee (Ho-den-no-show-nee), Lūnaapéewak (Len-ahpay-wuk) and Attawandaron (Add-a-won-da-run) peoples, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum.

With this, I respect the longstanding relationships that Indigenous Nations have to this land, as they are the original caretakers. We acknowledge historical and ongoing injustices that Indigenous Peoples (e.g. First Nations, Métis and Inuit) endure in Canada, and we accept responsibility as a public institution to contribute toward revealing and correcting miseducation as well as renewing respectful relationships with Indigenous communities through our teaching, research and community service.

FHS Common Course Outline Attachment

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.

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 any academic considerations granted in this course will be determined by the instructor of this course, in consultation with the academic advisors in your Faculty of Registration, 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.

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.

Academic Offences

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_under_grad.pdf.

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](#)

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 receive an automatic grade of 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>.

Grades

Where possible assignment objectives and rubrics will be posted on OWL.

Generally, students can expect some form of feedback on their performance in a course before the drop date.

- November 13th, 2024 (for first term half-courses)
- November 30th, 2024 (for full-year courses)
- March 7th, 2025 (for second term half-courses)

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

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

Appealing a Grade Within this Course

You have the right to appeal any grade within this course. The grounds for a grade appeal may be one or more of: medical or compassionate circumstances, extenuating circumstances beyond the student’s control, bias, inaccuracy, or unfairness. All grounds advanced in a request for relief must be supported by a clear and detailed explanation of the reasons for the request together with all supporting documentation.

Appeals generally proceed in this order:

1. Course instructor (informal consultation)
2. Department Chair (submission of written request)
3. The Dean of the Faculty (submission of written request)

In the case of perceived procedural unfairness, steps 2 and 3 are carried out within the Department and Faculty offering the course. In the case of extenuating medical or compassionate circumstances that impact on a grade, steps 2 and 3 are carried out within a student’s Home Department and Faculty.

A request for relief against a mark or grade must be initiated with the instructor as soon as possible after the mark is issued. In the event that the instructor is not available to the student, or fails to act, or if the matter is not resolved satisfactorily with the instructor, a written request for relief must be submitted to the Chair of the Department within three weeks of the date that the mark was issued. In the case of a final grade in a course, the written request for relief must be submitted to the Chair of the department by January 31st (for first-term half courses) or June 30th (for second-term half courses or full-year courses).