

**KIN4480B - Exercise Neuroscience
 Winter 2023**

<p>Instructor: Dr Leena Shoemaker, PhD Email: lshoemak@uwo.ca Office Hrs: Immediately after Wednesday class (on Zoom) AND by appointment TAs: TBD</p>	<p>Lectures: M, W, F 8:30 am -9:20 am Winter 2023 Instruction Mode: Blended Monday – In-person lecture (SH-2355) Wednesday & Friday – virtual lecture (synchronous)</p>
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NOTE: All course information including grades, assignment outlines, deadlines, etc. are available via OWL. **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. Prerequisite(s): None. 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 OWL 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 quiz/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 OWL. There is no textbook for this course. Required readings will be provided in PDF form on OWL one week in advance.

Week	Topics	Schedule & Deadlines
Week 1: Jan. 9-13	Introduction <i>What is “exercise neuroscience”?</i>	2 online-lectures - asynchronous
Week 2: Jan. 16-20	Cognition & the brain Neuroimaging basics	Form groups of 5 and sign-up for presentation on OWL due Friday 20 th
Week 3: Jan. 23-27	Acute exercise	Quiz #1 Friday
Week 4: Jan 30 – Feb 3	Cross-sectional and longitudinal studies	Groups 1 & 2 Presentation Wednesday Quiz #2 Friday
Week 5: Feb. 6-10	Exercise interventions	Assignment 1 due Monday 6th Groups 3 & 4 Presentations Wednesday Quiz #3 Friday
Week 6: Feb. 13-17	Exercise interventions	Groups 5 & 6 Presentations Wednesday Quiz #4 Friday
Week 7: Feb. 20-24	NO CLASS – READING WEEK	
Week 8: Feb 27 – Mar 3	Clinical populations	Groups 7 & 8 Presentations Wednesday Quiz #5 Friday
Week 9: Mar. 6-10	Clinical populations	Groups 9 & 10 Presentations Wednesday Quiz #6 Friday
Week 10: Mar. 13-17	Physical activity in childhood & adolescence	Assignment 2 due Monday 13th Groups 11 & 12 Presentations Wednesday Quiz #7 Friday
Week 11: Mar. 20-24	Mechanisms	Groups 13 & 14 Presentations Wednesday Quiz #8 Friday
Week 12: Mar 27 - 31	Cognitive training Assignment 3 Tutorial	Group 15 Presentation Wednesday
Week 13: Apr. 3-7	Class choice Professional development Wrap-up NO CLASS FRIDAY (Good Friday)	Assignment 3 due Monday 3rd Group 16 Presentation Wednesday

Schedule (subject to change)

Course Evaluation:

1. Quizzes	28%
2. Assignment #1	10%
3. Assignment #2	10%
4. Assignment #3 - Grant Proposal	27%
5. Group presentation	15%
6. Participation in group discussions	10%

Course Evaluation Details:

1. *Quizzes (28%)*: We will have quizzes throughout the semester which will be completed on OWL. There will be a total of 8 quizzes, each worth 4% (your lowest quiz mark will automatically be dropped). The purpose of these quizzes is to ensure that you come to class prepared and ready to contribute to an engaging and meaningful discussion about the readings. They may also contain content from previous classes and group presentations. The quizzes will be open from 9am-5pm on the day of the quiz, are open-book, and may contain a variety of multiple choice, fill-in-the-blank, and short-answer questions. There will be NO MAKEUP QUIZZES. If you receive accommodation, your quiz mark will be re-weighted accordingly.

2. *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 OWL approximately 2 weeks prior to the due date. All assignments must be completed independently. Assignments must be submitted via OWL before the deadline. If you receive accommodation for a missed assignment, a new due date will be decided by the instructor. Submitting a late assignment without appropriate documentation or approval will result in a zero (0) grade. "Late" is defined as anything submitted 1 minute after the OWL deadline.

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.

3. *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 (10% - rubric will be provided in advance) and an individual contribution mark from your group members (5%, anonymous). The instructor reserves the right to re-arrange group assignments if necessary to accommodate certain individuals. If you receive accommodation for a missed presentation, you will receive a new written and oral presentation assignment from the instructor. YOU MUST SEND YOUR COMPLETE PRESENTATION TO THE INSTRUCTOR BY 12:00PM ON YOUR PRESENTATION DAY.

4. *Participation (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.

Course/University Policies

1. The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, 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 his/her official university address is attended to in a timely manner.

2. 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, in the Academic Calendar (westerncalendar.uwo.ca).

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).

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.

3. 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 during ANY tests, quizzes, midterms, examinations, or other in-class evaluations.

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. **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.**

Personal Response Systems (“clickers”) may be used in some classes. For those classes in which we use this technology, it is your responsibility to ensure that the device is activated and functional. You must speak with the course instructor immediately, if you have any concerns about whether or not your clicker is malfunctioning.

You must use only your own clicker. For all components of this course in which clicker records are used to compute a portion of the grade:

- The use of somebody else's clicker in class constitutes a scholastic offence;
- The possession of a clicker belonging to another student will be interpreted as an attempt to commit a scholastic offense

4. Academic Considerations and Absences from Lectures and Assessments

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request (in writing) any necessary academic considerations at least two weeks prior to the holiday to the academic counsellors in their Home Department. Additional information is provided in the [Western Multicultural Calendar](#).

Academic Accommodation

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. Students with ongoing accommodation needs within this course are also encouraged to contact [Accessible Education](#), which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found [here](#).

Academic Consideration

The University recognizes that a student's ability to meet their academic responsibilities may, on occasion, be impaired by extenuating circumstances that are medical or compassionate in nature. These extenuating circumstances may be acute (short term), or it may be chronic (long term), or chronic with acute episodes. In all cases, students are advised to consult with the academic counsellors in their home units, at their earliest opportunity. Academic counsellors may refer students to [Accessible Education](#) for ongoing academic accommodations.

Most forms of academic consideration require documentation, and this documentation is to be submitted to academic counsellors within five (5) business days of their return to academic responsibilities. Any such documents will be retained in the student's file, and will be held in confidence in accordance with the University's [Official Student Record Information Privacy Policy](#). Once the petition and supporting documents have been received and assessed, appropriate academic considerations shall be determined by academic counseling, in consultation with the student's instructor(s). Academic considerations may include extension of deadlines, waiver of attendance requirements for classes/labs/tutorials, arranging Special Exams or Incompletes, re-weighting course requirements, or granting late withdrawals without academic penalty. Academic considerations shall be granted only where the documentation indicates that the onset, duration and severity of the illness are such that the student could not reasonably be expected to complete their academic responsibilities. (Note – it will not be sufficient to provide documentation indicating simply that the student “was seen for a medical reason” or “was ill.”).

Whenever possible, students who require academic considerations should provide notification and documentation in advance of due dates, examinations, etc. Under no circumstances are students expected to submit rationales for (or documentation of) any absences, to course instructors. Students are, however, required to follow-up with course instructors, in a timely fashion, to identify the ways in which the academic consideration will be implemented.

Examination Conflicts

A student completing tests or examinations with flexible submission times (e.g., where one or more evaluation is a take-home assessment) cannot request alternative arrangements unless a conflict cannot be avoided by rescheduling writing the exam to a different time within the window specified by the instructor. This applies to direct conflicts as well as “heavy load” conflicts (e.g., three exams within a 23-hour period). The student should discuss any concerns about a potential conflict and/or request academic

considerations with their academic counselling unit prior to the deadline to drop a course without academic penalty

In the case of online tests and examinations, use of a “Conflict Room,” wherein student can write two proctored exams concurrently, will be interpreted as arrangements for continuous proctoring.

5. **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 OWL 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.

6. **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>.

7. **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.

- *March 7th, 2023 (for second term half-or full year courses)*

A+	90-100	<i>One could scarcely expect better from a student at this</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).

8. Support Services

Health and Wellness:

Information regarding health and wellness-related services available to students may be found at <http://www.health.uwo.ca/>.

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

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

Student Development Centre -- <http://www.sdc.uwo.ca/ssd/>

Ombudsperson Office -- <http://www.uwo.ca/ombuds/>

9. 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>



Land Acknowledgement

I am not Indigenous, rather I am of settler-colonial ancestry. Although my heritage extends to Germany, I - like many other settler people - have benefited greatly from living on Turtle Island. As a visitor on this land, I have an important responsibility to acknowledge the grounds on which we are privileged to gather in the pursuit of higher education:

I acknowledge that Western University is located on the traditional lands of the Anishinaabek (Ah-nish-in-a-bek), Haudenosaunee (Hoden-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. I acknowledge historical and ongoing injustices that Indigenous Peoples (e.g. First Nations, Métis and Inuit) endure in Canada, and I 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.

Throughout the course I aim to bring awareness to the injustices that are currently occurring against Indigenous Nations in Canada and resources that exist (in London and on campus) to support the ongoing commitment to renewing relationships and reconciliation.