



Western University  
Faculty of Health Sciences  
School of Kinesiology



## KIN 4434B - Physiological Function and Physical Activity in Aging

Winter 2025

<b>Instructor:</b> Dr. Anita Christie <b>Office:</b> Thames Hall 4183 <b>Email:</b> <a href="mailto:achris95@uwo.ca">achris95@uwo.ca</a> <b>Phone:</b> 519-661-2111 x80984 <b>Office Hrs:</b> By appointment  <b>TAs:</b> TBD	<b>Lectures:</b> Tuesday 12:30-2:30 Thursday 12:30-1:30  <b>Location:</b> TBD <b>In-person lectures will not be recorded.</b>
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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. If students need assistance with OWL Brightspace, they can seek support on the [OWL Brightspace Help](#) page. Alternatively, they can contact the [Western Technology Services Helpdesk](#) online or by phone at 519-661-3800 or ext. 83800 for technical support. Current versions of all popular browsers (e.g., Safari, Chrome, Edge, Firefox) are supported with OWL Brightspace; what is most important is that you update your browser frequently to ensure it is current. All JavaScript and cookies should be enabled."

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

In this course, we will explore the changes that occur in various physiological systems during the aging process. The impact of these physiological changes on function and health will be discussed. We will examine how factors such as physical activity and can impact the biological changes with advanced age.

**Prerequisite(s):** [Kinesiology 2230A/B](#)

**Extra Information:** 3 lecture hours.

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

### Course Description

Physiological changes with advanced will be the focus of this class. The function of different physiological systems (e.g. cardiorespiratory, neuromuscular, cognitive) will be discussed, with a focus on relationships among the systems and their contributions to function and health. The impact of factors such as disuse, disease and physical activity on the aging process will be examined to understand best practices for healthy aging.

### Learning Outcomes/Schedule:

The goal of this course is to examine the physiological changes with advanced age, with attention to the relationship to physical activity, disuse and disease. Upon completion of this course, students will be able to:

- Compare and contrast the theories and biomarkers of aging
- Understand the psychological changes associated with aging, and explain relationships among changes in different physiological systems
- Describe the impact of physiological changes on cognitive and physical function
- Compare and contrast the role of disease, disuse and physical activity in altering the physiological changes with advanced age
- Articulate strategies to promote healthy aging

WEEK	TOPIC
1	Introduction, Myths and Facts about Aging
2	Theories and biomarkers of aging
3	Stress and hormones
4	Cardiorespiratory function
5	Skeletal system
6	Mid-term in class
7	READING WEEK
8	Neuromuscular system
9	Brain health and cognition
10	Disuse and disease
11	Physical activity benefits and adaptations I
12	Physical activity benefits and adaptations II
13	Course wrap-up and exam review

**\*Note: This is a tentative list of topics. Timing, order and/or topics may change.**

### Required Course Material/Text:

There is no required textbook for this course. Any required readings will be posted on OWL.

### Course Evaluation:

Grade Source	Percentage of Course Grade
Quizzes (best 4 out of 5)	5%
Term Assignment	30%
Mid-term Exam	30%
Cumulative Final Exam	35%
<b>Total</b>	<b>100%</b>

**Written Exams (65%):** 2 exams each designed to be 2 hours in duration. The exam format consists of multiple choice and short answer. Exams will be delivered in person. The midterm will be held during class time. **There will be no make-up mid-term exam.** If the midterm is missed and appropriate documentation is provided, the grade will be redistributed to the final exam (i.e. the final exam will be worth 65%). The final exam will be scheduled for 2 hours (date and time to be set by the registrar's office).

**Quizzes (5%):** Quizzes will be completed through OWL, with a time limit. They will be available from Friday afternoon until Tuesday at midnight on weeks when they are assigned. Quiz dates are listed below. There will be **no make-up quizzes**. The **best four out of five** quizzes will count toward the final course grade.

**Term Assignment (30%):** - Students will choose a topic related to the physiology of aging and write an overview of the physiology and present evidence that supports (or not) the benefits of physical activity in maintaining or improving the specific physiology selected. A minimum of 5 primary, peer-reviewed journal articles is required. The topic must be submitted via OWL by **Friday, February 28<sup>th</sup> at 11:55 pm (2% deduction from the final paper grade for failing to submit a topic on time)**. The paper will be 5 typed pages (double-spaced), excluding references, due by **Thursday, March 27<sup>th</sup> at 11:55 pm – 30%**. No extensions without penalty - 10% deduction per day. Further details will be provided on OWL.

## IMPORTANT DATES

Date	Event
Tuesday January 7	First Day of class
Monday January 20	Quiz 1 due by 11:55pm
Monday January 27	Quiz 2 due by 11:55pm
Monday February 3	Quiz 3 due by 11:55pm
Tuesday February 11	Midterm Exam (in class)
February 17-21	Reading Week No Class
Friday February 28	Project topic due by 11:55 pm
Monday March 10	Quiz 4 due by 11:55pm
Monday March 17	Quiz 5 due by 11:55pm
Thursday March 27	Term Project due by 11:55 pm
Thursday April 3	Last day of class

## Course/University Policies

### 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](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\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.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](http://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 12<sup>th</sup>, 2024 (for first term half-courses)
- December 2<sup>nd</sup>, 2024 (for full-year courses)
- March 7<sup>th</sup>, 2025 (for second term half-or full year 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 31<sup>st</sup> (for first-term half courses) or June 30<sup>th</sup> (for second-term half courses or full-year courses).