

Western HealthSciences

School of Kinesiology

Kin 4241B – Biomechanics of Injury Winter 2027

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.

Contact Information

Course Coordinator/instructor	Contact Information	Office Hours
Kayla Fewster	kfewste@uwo.ca	By Appointment

Teaching Assistant(s)	Contact Information	Office Hours

NOTE: All course information including grades, assignment outlines, deadlines, etc. are available via [OWL Brightspace](#). Check the website regularly for course announcements.

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 provides an in-depth exploration of the mechanical principles underlying human injury, with a focus on the musculoskeletal system. Students will examine tissue tolerance, risk factors, and injury prevention strategies in sports, automotive, and occupational settings. Case studies and guest lectures from injury biomechanics experts will supplement content.

Antirequisite(s): [Kinesiology 4473A/B](#) (if taken in 2024-25).

Prerequisite(s): [Kinesiology 2241A/B](#), registered in 3rd or 4th year Kinesiology.

Extra Information: 3 lecture/tutorial hours.

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

Location	Component	Date(s)	Time
TBD	Lectures		

My Course Description

This course will provide an in-depth exploration of the mechanical principles underlying human injury, with a specific focus on understanding injury mechanisms in the musculoskeletal system. Through studying injury biomechanics, students will examine tissue tolerance, risk factors, and injury prevention strategies in various contexts, including sports, automotive, and occupational settings. Topics covered will include injury mechanisms, analysis of injury patterns, and factors such as loading conditions, age, and pre-existing conditions that may increase injury susceptibility. Real world case studies as well guest lectures from experts in the field of injury biomechanics will supplement course content and provide students with an understanding of the opportunities that exist within the field of injury biomechanics.

Learning Outcomes

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

1. Analyze and understand the biomechanics underlying different types of musculoskeletal injuries.
2. Explain the influence of extrinsic and intrinsic risk factors on injury mechanisms.
3. Apply biomechanical principals to assess injury risk and develop prevention strategies.
4. Critically evaluate research studies and apply to real world scenarios to assess injury risk.

Course Materials You Must Acquire:

All materials will be posted on OWL. Students are expected to have moderate proficiency with obtaining/reviewing scientific literature.

Course Content and Schedule

Week 1	Introduction to Injury Biomechanics	Case Study 1
Week 2	Tissue Mechanics – Soft Tissue & Skeletal Tissue	Quiz 1
Week 3	Injury Mechanisms and Injury Thresholds	Case Study 2
Week 4	Lumbar Spine Injury and Risk Factors	Quiz 2
Week 5	Pain vs. Injury	Quiz 3
Week 6	Midterm Week	Midterm Feb 10 th
Week 7	Reading Week	N/A
Week 8	Impact and Sudden Loading Injuries	Quiz 4
Week 9	Age, Obesity, and Sex as Injury Risk Factors	Case Study 3
Week 10	Injury Prevention Strategies	Quiz 5
Week 11	Biomechanical Analysis Techniques in Injury Biomechanics	Case Study 4

Week 12	Occupational and Automotive Injury Biomechanics	Case Study 5
Week 13	Injury Biomechanics in High-Performance Sports	Case Study 6
Week 14	Review	

Assessments and Evaluation

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

Course Evaluation Summary (Due Dates listed below):

1. Quizzes – 10% (4 @ 2.5% - drop lowest). Released on Brightspace on the date indicated below at midnight with 24 hours to complete the quiz.
2. In-Class Case Study Participation – 10% (4 @ 2.5% - 6 case studies total to participate)
3. Midterm – 25%
4. Final Written Case Study Report – 20%
5. Final Exam – 35% (TBD)

Assessment	Format	Weight	Due Date	Learning Outcome
Quizzes	Mixed	2.5	January 15 th January 29 th February 5 th February 26 th March 12 th	1, 2, 3
Case Study Participation	Oral	2.5	January 7 th January 21 st March 4 th March 18 th March 25 th April 1 st	All
Midterm Test	Mixed format	25	February 11 th , 2026	1, 2, 3
Final Case Study	Written	20	April 1 st , 2026	4
Final Exam	Mixed format	35	TBD	All

Notes:

The final assignment is due as stated in the course syllabus and will not be accepted late. Submitting a late assignment without approved academic considerations will result in a zero (0) grade. A missed quiz or mid-term examination, without approved academic considerations will result in a zero (0) grade. Acceptable reasons might include hospital stays, serious illness, family emergencies (like serious accidents, illness or death) or similar circumstances. In the case of a missed assignment, a 24 hour extension will be provided for those with approved academic consideration. This course has 5 quizzes. The 4 quizzes with the highest marks will be counted towards your final grade. Academic consideration requests will be denied for the first missed quiz. Academic Consideration requests may be granted when students miss more than 1 quiz. These additional missed quizzes will be reweighted evenly to other quizzes. In the case where all quizzes are missed, quizzes will be reweighted to the final exam. In the case of a missed midterm, the weighting is shifted to the final exam. The midterm is considered the designated assessment, and documentation must be provided for any absence. Undocumented requests cannot be used for

the midterm.

A total of six case studies will be presented and discussed in class. Students will obtain participation credit for contributing to the discussion surrounding the case study.

General information about assessments

- ☒ Assignment is due at 23:59 EST unless otherwise specified
- ☒ Students are responsible for ensuring that the correct file version is uploaded; incorrect submissions including corrupt files could be subject to late penalties (see below) or a 0
- ☒ Written assignments will be submitted to Turnitin (statement in policies below)
- ☒ 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
- ☒ Any grade appeals on term work must be initiated with the instructor within 3 weeks of the grade being posted. See the University Policy on Undergraduate Student Appeals for more information

The table below outlines 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%)

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 assignments with appropriate documentation will be provided a 1-day extension beyond the reported absence.
- ☒ 3 or more missed quizzes with appropriate documentation will be re-weighted evenly to the other quizzes.
- ☒ Missed midterm will be re-weighted to the final.

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.

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.

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>.

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).