THE UNIVERSITY OF BRITISH COLUMBIA

`School of Health and Exercise Science
HES 480- Concussion
Term W1- 2026

Instructor:	Dr. Tori N. Stranges
Office:	ART 125
Office Hours:	Tuesdays 1-3 or *via Zoom appointment*
Email:	tori.stranges@ubc.ca

TA: Molly Henneberry
Contact Information: mollyhenneberry95@gmail.com

We respectfully acknowledge the Syilx Okanagan Nation and their peoples, in whose traditional, ancestral, unceded territory myself and UBC Okanagan is situated.
Truth and Reconciliation Commission of Canada: Calls to Action

Lecture Time & Location

Time: Tuesday & Friday, 3:30-5:00 PM
Location: ART 376

Online Resources/ Text/ Reading:

This is a tentative schedule for our course. Please do not rely on the syllabus for your course materials. Lecture notes (PDF), assignment details, and other relevant information including weekly required readings pertaining to the course will be posted on Canvas.

Course Overview:

HES 480 explores the effects of concussion from a neurocognitive, biomechanical, cerebrovascular, and sensorimotor perspective. The course will cover the factors that affect the diagnosis, management, and return to play/activity of the injury resulting from contact sport participation, intimate partner violence, or other injury mechanisms. It will focus on the basic underlying pathophysiological mechanisms and how they impact a broad array of functions using both human and animal model-based studies. HES 480 aims to provide students with a deep understanding of the factors that are affected by concussion and the tools and techniques that are available to assess this dysfunction in laboratory and clinical settings.

Learning Objectives:

After completing this course, we will be able to:

1. Understand the neurophysiological underpinnings of concussion.
2. Describe the challenges associated with diagnosing and managing a concussion.
3. Understand the biomechanical, cerebrovascular, sensorimotor, and neurocognitive deficits following concussion.

Evaluation Criteria and Grading:

A. Midterm I - 20%*
B. Midterm II – 30%*
C. Resource Review – 10%
    - You will select and critically evaluate a publicly available concussion resource, examining its evidence base, intended audience, and relevance to course concepts.
D. Final Exam - 40% (During Exam Period)

**For Midterm I and II, the Midterm that you do best on will be worth 30%. For example, if you do better on Midterm I than Midterm II, Midterm I will be worth 30% and Midterm II will be worth 20%.*

Course Schedule:

**Subject to change, see Canvas for most up to date information.*

Date	Topic	Required Readings & Course Preparation
Week 1 Sept 8 Sept 11	Course overview Introduction	
Week 2 Sept 15 Sept 18	Diagnosis/ management of concussion Persistent symptoms after concussion	Patricios, J. S., Schneider,…(2023). Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport-Amsterdam, October 2022. British journal of sports medicine, 57(11), 695–711.
Week 3 Sept 22 Sept 25	Neurometabolic cascade following concussion Neurocognitive and sensorimotor deficits in concussion **Part 1**	Giza, C. C., & Hovda, D. A. (2014). The new neurometabolic cascade of concussion. Neurosurgery, 75(suppl_4), S24-S33.
Week 4 Sept 29 Oct 2	**NO CLASS** Neurocognitive and sensorimotor deficits in concussion **Part 2**	**NO CLASS** Barnhart, M., McLeod, T. V., & Bay, R. C. (2024). The ability of vestibular and oculomotor screenings to predict recovery in patients after concussion: A systematic review of the literature. Journal of athletic training, 59(1), 49-65.

Week 5 Oct 6 Oct 9	Visual deficits and motor physiology **MIDTERM I**	Mavroudis, I., Petridis, F., Kazis, D., Kamar, A. A. M., Ciobica, A., Gheban, D., ... & Novac, B. (2026). Neuro-visual pathway after mild traumatic brain injury: a systematic scoping review of symptoms, objective testing, and rehabilitation. Acta Neurologica Belgica, 1-11. **MIDTERM I**
Week 6 Oct 13 Oct 16	Blood biomarkers Chronic Traumatic Encephalopathy	Mavroudis, I., Petridis, F., Kazis, D., Ciobica, A., Dăscălescu, G., Petroaie, A. D., ... & Novac, B. (2025). The diagnostic and prognostic role of biomarkers in mild traumatic brain injury: an umbrella meta-analysis. Brain Sciences, 15(6), 581.
Week 7 Oct 20 Oct 23	Sex/ gender differences in brain injury **ASYNCHRONOUS**	**VIRTUAL GUEST LECTURE- Bradi Lorenz** **<u>Complete CATT IPV Training</u>**
Week 8 Oct 27 Oct 30	Intimate Partner Violence (IPV)-Caused Brain Injury	Esopenko, C., Jain, D., Adhikari, S. P., Dams-O'Connor, K., Ellis, M., Haag, H., ... & Wilde, E. A. (2024). Intimate partner violence-related brain injury: Unmasking and addressing the gaps. Journal of neurotrauma, 41(19-20), 2219-2237.
Week 9 Nov 3 Nov 6	**MIDTERM II** Barriers to appropriate supports for IPV survivors	**GUEST LECTURE- Rory Marshall**
Week 10 Nov 10 Nov 13	**READING WEEK** NO CLASS	**READING WEEK** NO CLASS
Week 11 Nov 17 Nov 20	Local Organization Spotlight, BrainTrust Resource Review Assignment	**GUEST LECTURE- Amanda McFarlane** **Assignment Completed During Class Time** **Due Nov 20th 11:59 PM**
Week 12		

Nov 24 Nov 27	Guest Lecture Interventions/ treatments	**GUEST LECTURE- Shift Concussion Management, Dr. Kailin Walter**
Week 13 Dec 1 Dec 4	Brain injury prevention Review	Register-Mihalik, J., Baugh, C., Kroshus, E., Kerr, Z. Y., & McLeod, T. C. V. (2017). A multifactorial approach to sport-related concussion prevention and education: application of the socioecological framework. Journal of athletic training, 52(3), 195-205.
Week 14 Dec 8	**No Class**	**DECEMBER 9TH LAST DAY OF CLASS,**

Grading Scheme:

A+…..90-100
A...….85-89
A-……..80-84
B+..…76-79
B...….72-75
B-……68-71
C+..…64-67
C...…..60-63
C-……55-59
D..….50-54
F...…..0-49

Generative AI:

Students are permitted to use artificial intelligence tools, including generative AI, to gather information, review concepts or to help produce assignments. However, students are ultimately accountable for the work they submit, and any content generated or supported by an artificial intelligence tool must be cited appropriately through an AI statement. Use of AI tools is not permitted during midterm exams and final exams in this course. Learn more through the Generative AI website. Note that this is a course-specific policy. Check with your instructor before using these kinds of tools in other classes.

Attendance:

Attendance for lectures is not mandatory but is highly recommended as material discussed in class will be on the final exam for this course. Students who attend lecture generally achieve higher grades. Class participation is encouraged. The text and/or notes, other resources are easily accessible at any time, but it is impossible to duplicate the discussion, activities, challenge and interaction that takes place in the classroom.

Late assignments:

Assignments are due at the specified due date and time indicated on the course schedule, unless otherwise indicated; after that, the assignment will be considered 1 day late; for each late day, there will be a 10% deduction from the grade received.

Canvas Access:

To access the UBC Canvas page: Navigate to canvas.ubc.ca
How do I log in? Use your CWL and password.
You can also check out: http://students.canvas.ubc.ca or contact the UBC Information Technology Help Desk 250-807-9611.

NOTE: This syllabus constitutes an agreement between professor and student in accordance with University policy and is subject to the terms and conditions set forth herein. This syllabus is tentative and subject to revision in whole or in part, whether written or oral; each revision shall be subject to the terms and conditions set forth above. It is your responsibility to keep up with changes to the syllabus.

University Policies:

The examination period for Term 1 of Winter 2026 is December 9th to 20th. Except in the case of examination clashes and hardships (three or more formal examinations scheduled within a 24-hour period) or unforeseen events, students will be permitted to apply for out-of-time final examinations only if they are representing the University, the province, or the country in a competition or performance; serving in the Canadian military; observing a religious rite; working to support themselves or their family; or caring for a family member. Unforeseen events include (but may not be limited to) the following: ill health or other personal challenges that arise during a term and changes in the requirements of an ongoing job.

Further information on Academic Concession can be found under Policies and Regulation in the *Okanagan Academic Calendar* http://www.calendar.ubc.ca/okanagan/index.cfm?tree=3,48,0,0
Version: July 2018

The Student Learning Hub is your go-to resource for free learning support—now online and flexible to meet your remote learning needs! The Hub welcomes undergraduate students from all disciplines and years to access a range of supports that include tutoring in math, sciences, languages, and writing, as well as dedicated learning support to help you develop skills and strategies for academic success. Don't wait—successful learners access support early and often. For more information, visit students.ok.ubc.ca/hub or contact learning.hub@ubc.ca

Writing Support:

Improve your writing with free support from the Student Learning Hub—now online and flexible to meet your remote learning needs! Undergraduate students from every discipline, working on any type of written course assignment (or presentation), are welcome. We support writers at all stages of the writing process, from getting started and planning to drafting and revising. Peer writing consultants focus on your needs as a writer—they don't "edit" or "proofread." Instead, they listen, read, ask questions, and share strategies for doing it yourself, allowing you to explore your innate writing talents and discover a path to academic success that is uniquely yours. Don't wait—successful learners access support early and often. Visit students.ok.ubc.ca/hub or contact learning.hub@ubc.ca

UBC Okanagan Disability Resource Centre:

The Disability Resource Centre ensures educational equity for students with disabilities, injuries or illness. If you are disabled, have an injury or illness and require academic accommodations to meet the course objectives, please contact Earllene Roberts, the Diversity Advisor for the Disability Resource Centre located in Commons Corner in the University Centre building (UNC 227).

UNC 227A 250.807.9263
email *earllene.roberts@ubc.ca*
Web: students.ok.ubc.ca/drc/welcome

UBC Okanagan Ombuds Office:

The Ombuds Office offers independent, impartial, and confidential support to students in navigating UBC policies, processes, and resources, as well as guidance in resolving concerns related to fairness.

UNC 227B 250.807.9818
email: *ombuds.office.ok@ubc.ca*
Web: www.ombudsoffice.ubc.ca/ubc-okanagan-2

PREFERRED NAMES and PRONOUNS

UBC policy requires faculty, staff, and students to refer to each other by their preferred name and pronouns. The EIO provides some basic guidelines. Beyond the Binary at UBC has a more helpful resources on their Pronouns 101 page.

Students in this class are invited to share their preferred name and pronouns or not. If you are misnamed or misgendered, please correct the other person respectfully. Remember, it is easier to avoid using wrong pronouns if you know someone's name and simply refer to them by name.

The instructor prefers the names: Tori

The instructor prefers the pronouns: She/They.

UBC Okanagan Equity and Inclusion Office:

UBC Okanagan is a place where every student, staff and faculty member should be able to study and work in an environment that is free from discrimination and harassment. UBC prohibits discrimination and harassment on the basis of the following grounds: age, ancestry, colour, family status, marital status, physical or mental disability, place of origin, political belief, race, religion, sex, sexual orientation or unrelated criminal conviction. If you require assistance related to an issue of equity, discrimination or harassment, please contact the Equity and Inclusion Office.

UNC 227C 250.807.9291
email: *equity.ubco@ubc.ca*
Web: www.equity.ok.ubc.ca

Health & Wellness:

At UBC Okanagan health services to students are provided by Health and Wellness. Nurses, physicians and counsellors provide health care and counselling related to physical health, emotional/mental health and sexual/reproductive health concerns. As well, health promotion, education and research activities are provided to the campus community. If you require assistance with your health, please contact Health and Wellness for more information or to book an appointment.
UNC 337
Web: www.students.ok.ubc.ca/health-wellness

Sexual Violence Prevention and Response Office:

The Sexual Violence Prevention and Response Office offers a safe place for faculty, staff, and students who have experience sexual assault regardless of identity, expression, or orientation, regardless of when or where it took place.
Office: Nicola Townhome 120, 1270 International Mews
Phone: 250-807-9640
Email: svpro.okanagan@ubc.ca Web: https://svpro.ok.ubc.ca/

SAFEWALK

Don't want to walk alone at night? Not too sure how to get somewhere on campus?
Call Safewalk at ***250-807-8076.***
For more information, see: www.security.ok.ubc.ca