



Land Acknowledgement

We respectfully acknowledge the Syilx Okanagan Nation and their peoples, in whose traditional, ancestral, unceded territory UBC Okanagan is situated.

HES 480 - Concussion

Faculty: Faculty of Health and Social Development

Department: Health and Exercise Sciences

Instructor: Dr. Paul van Donkelaar

Instructor Email: paul.vandonkelaar@ubc.ca

Duration: Term 2 Winter 2024

Delivery Modality: Hybrid

Course Location: Zoom; ART 114

Course Days: Wed (Zoom); Fr (In person)

Class Hours: 8:00-9:20am

Office hours: Tu: 10:30-11:30 (Zoom); Fr: 9:30-10:30 (In person)

Office: ART 174

Course Description

Investigation of the diagnosis, deficits and treatment of concussion, and the neurocognitive, biomechanical, cerebrovascular, and sensorimotor effects of the injury.

Course Structure

This will be a hybrid class with the content for Wednesdays delivered via zoom recordings posted to Canvas and Fridays delivered in person in ART 114. Most of the content will be delivered by the instructor with some being delivered by guest lecturers (either in person or via zoom).

Course Overview, Content and Objectives

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 Outcomes or Objectives

After completion of this course, students should be able to:

- Understand the neurophysiological underpinnings of concussion (LO1).
- Describe the challenges associated with diagnosing and managing a concussion (LO2).
- Understand the biomechanical, cerebrovascular, sensorimotor, and neurocognitive deficits following concussion (LO3).

Methods of Assessment

Description of Assessment (Assignment/Exam + % worth)	Learning outcome(s) being assessed
Midterm 1 – 30% (Assessment of student comprehension from the first 1/3 of the course)	LO1, LO2, LO3
Midterm 2 – 30% (Assessment of student comprehension from the second 1/3 of the course)	LO1, LO2, LO3
Final exam – 40% (A partially cumulative final examination will be used to gauge retention of the complete course material)	LO1, LO2, LO3

Course Schedule

Week/Date	Topic	Readings
1 (1/8; 1/10)	Introduction and overview	See Canvas
2 (1/15; 1/17)	Diagnosis/management of concussion; persistent post-concussion syndrome	See Canvas
3 (1/22; 1/24)	Neurometabolic cascade in brain injury	See Canvas
4 (1/29; 1/31)	Neurocognitive and sensorimotor deficits in concussion	See Canvas
5 (2/5; 2/7)	Cerebrovascular deficits in concussion (Midterm 1 – 2/7)	See Canvas
6 (2/12; 2/14)	Blood biomarkers; Chronic traumatic encephalopathy	See Canvas

7 (2/19; 2/21)	Reading week (no classes)	
8 (2/26; 2/28)	Sex/gender differences in brain injury	See Canvas
9 (3/5; 3/7)	Brain injury in women experiencing intimate partner violence (IPV)	See Canvas
10 (3/12; 3/15)	Barriers to appropriate supports for IPV survivors; (Midterm 2 – 3/15)	See Canvas
11 (3/19; 3/21)	Brain injury in people experiencing marginalization	See Canvas
12 (3/26; 3/28)	Interventions/treatments	See Canvas
13 (4/2; 4/4)	Brain injury prevention; Review	See Canvas

Learning Materials

All required readings for this course will be available via Canvas. Under the weekly module within Canvas you will see a "weekly prep" section. In this section you will find links to all of the required readings and assigned videos that are freely available.

Missed exam policy

Should you become ill or experience an unforeseen event just before or during an exam, please notify your instructor as soon as possible to arrange academic accommodations.

Privacy Information Notice: Use of Glean software in class

During lectures, recordings may be made by a student with note-taking accommodation using Glean.co. These recordings utilize the device's microphone and/or content displayed on the screen and are exclusively for the student's personal use to support their accommodation. This service is provided by UBCO's Disability Resource Centre, and all users have agreed to UBC's terms for recording lectures.

Under Section 26 of the BC Freedom of Information and Protection of Privacy Act (FIPPA), UBC collects this information solely to facilitate note-taking accommodations. Glean, along with its third-party service providers, processes and stores data outside of Canada, primarily in the United Kingdom and the United States, adhering to its Privacy Policy.

For any inquiries or concerns regarding how this information is collected, used, or stored, please contact drc.questions@ubc.ca.

UBC Values

UBC creates an exceptional learning environment that fosters global citizenship, advances a civil and sustainable society, and supports outstanding research to serve the people of British Columbia, Canada, and the world. UBC's core values are excellence, integrity, respect, academic freedom, and accountability.

Policies and Regulations

Visit [UBC Okanagan's Academic Calendar](#) for a list of campus-wide regulations and policies, as well as [term dates and deadlines](#).

Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating usually result in a failing grade or mark of zero on the assignment or in the course. Careful records are kept to monitor and prevent recidivism.

A more detailed description of academic integrity, including the University's policies and procedures, may be found in the [Academic Calendar](#).

Academic Misconduct

The academic enterprise is founded on honesty, civility, and integrity. Violations of academic integrity (i.e., [academic misconduct](#)) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred for consideration for academic discipline. Careful records are kept to monitor and prevent recurrences. Any instance of cheating or taking credit for someone else's work, whether intentionally or unintentionally, can and often will result in at minimum a grade of zero for the assignment, and these cases will be reported to the Head of the Department and Associate Dean Academic of the Faculty.

Student Service Resources:

Walk-In Well-Being Clinic

The Walk-In Well-Being clinic offers no-fee, brief, single-session psychological services. Sessions are led by a doctoral student in clinical psychology and supervised by a registered psychologist (UBCO Faculty member). Clinicians can provide support with stress management, sleep, self-care, depression, anxiety, interpersonal issues, substance misuse, coping with academic

demands/stressors, and provide options for connecting to additional resources. Virtual or in-person sessions are available at the UBCO Psychology Clinic, located in ASC 167 with or without an appointment, on Tuesdays and Thursdays between 10 am and 3 pm from September to June, excluding campus closures.

UNC 337 250.807.8421 (ext. 1)

Email: ipc.ok@ubc.ca

Web: <https://psych.ok.ubc.ca/psychology-clinic/walk-in-wellness/>

Student Supports, Resources & Campus Services

Visit the [Student Support and Resources page](#) to find one-on-one help or explore resources to support your experience at UBC Okanagan, as well as many other campus services available to all students.

Advising Options

Visit the [Advising Options page](#) to find out about the variety of advising options available to students including but not limited to academic, career and accessibility.

Safewalk

Don't want to walk alone at night? Not too sure how to get somewhere on campus? Call Safewalk at **250-807-8076**.

Web: www.security.ok.ubc.ca