

UNIVERSITY OF BRITISH COLUMBIA  
SCHOOL OF KINESIOLOGY  
ADVANCED CONCEPTS IN CARDIOVASCULAR PHYSIOLOGY AND  
REHABILITATION  
KIN 500C (2023W)

---

## ACKNOWLEDGEMENT

---

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.

## COURSE INFORMATION

Course Title	Course Code Number	Credit Value
ADVANCED CONCEPTS IN CARDIOVASCULAR PHYSIOLOGY AND REHABILITATION	KIN 500	3

Location: Seminar Room, Lower Mall Research Station | 2259 Lower Mall

Time: Tuesdays and Thursdays, 10:30 am to 11:50 am

Duration: 08 January 2024 to 12 April 2024

Term: 2

## COURSE INSTRUCTOR: CONTACT INFORMATION

Course Instructor: Dr. Darren Warburton

E-mail: [darren.warburton@ubc.ca](mailto:darren.warburton@ubc.ca)

Office Location: Indigenous Studies in Kinesiology | Rm 208, Lower Mall Research Station | 2259 Lower Mall

Office Hours: Dr. Warburton is available for questions during and following instructor-facilitated tutorials. Appointments can also be made at alternative times for zoom meetings.

## COURSE DESCRIPTION

The purpose of the course is to examine advanced concepts in cardiovascular physiology and rehabilitation. A special focus of our course will be the integration of Indigenous understandings of health and wholistic wellbeing, highlighting the importance of strengths-based approaches to health and wellness including the incorporation of traditional Indigenous physical activities, sports, and practices. This course involves a strong practical component incorporating self-directed learning strategies throughout. Graduate students are expected to develop and participate in learning and research based on actual practice. Students working with the course facilitator will work towards the discovery of advanced cardiovascular physiology and rehabilitation knowledge related specifically to student identified and driven topics.

## RATIONALE

---

This course provides graduate students an opportunity to gain critical competencies for developing working within health, wellness, and clinical settings. Students may work with and/or learn from diverse clientele including children and youth, Indigenous Elders, and persons with living with chronic medical conditions. Instruction will take place within a traditional classroom or laboratory, a field-based setting, and/or clinical settings. This course supports the School of Kinesiology's course offerings in Clinical Kinesiology, Exercise Physiology, and Indigenous Studies in Kinesiology. This course will appeal to students in the Exercise and Health Sciences and those interested in working in the fields of Indigenous studies, health and wholistic wellness promotion, exercise science, and/or exercise medicine.

## AIMS AND OUTCOMES

---

The ultimate goal of this course is to prepare students for a career in Indigenous studies, health promotion, exercise science, and/or exercise medicine. This course aims to develop a student body that has a working knowledge of various health and wellness appraisal approaches, procedures, and tools. Students will gain an understanding of how these approaches, protocols, and methodologies can be utilized to administer appropriate exercise rehabilitation for optimizing functional status, health, and wellness. Accordingly, students will gain an understanding of the appropriate treatments for a variety of conditions. Moreover, this course will support a greater understanding of Indigenous ways of understanding and doing related to health and wellness. This course is part of the new menu of courses within Indigenous Studies in Kinesiology dedicated to wholistic Indigenous health and well-being.

## COURSE LEARNING OBJECTIVES

---

Each lesson has specific learning objectives, which are clearly outlined for the student. The general learning outcomes of the course are listed below.

Upon completion of this course, successful students will be able to, at an advanced level:

1. Critically evaluate peer-reviewed literature to determine evidence-based best practice within health and wellness settings.
2. Describe physiological and psychological benefits of comprehensive clinical exercise rehabilitation.
3. Describe the various physiological assessment techniques used in the field of clinical exercise physiology and rehabilitation.
4. Demonstrate problem-solving and critical thinking skills in an applied manner.
5. Demonstrate the ability to work in a collaborative group setting.
6. Demonstrate critical thinking in an applied manner.
7. Demonstrate a clear understanding of how Indigenous ways of understanding and doing can enhance health and wholistic wellness.
8. Demonstrate an understanding of the "Two-Eyed Seeing" approach and participatory action research.

## COURSE STRUCTURE

---

This course will follow recent innovations in blended learning with instructor facilitated tutorials and self-directed, group-based learning. Dedicated times will be provided for student learning on Tuesdays and Thursdays of each week.

During the first week of classes, students will be assigned randomly to a small problem-based learning group. This group will generally consist of 2-4 members. This group will work together to create a series of course deliverables (discussed below) related to health, wellness, cardiovascular physiology, and/or clinical exercise rehabilitation incorporating Indigenous understandings of health and wholistic wellness.

Students may complete the learning at their own pace. However, it is important to meet the identified deadlines to ensure that all students in each group can complete the course at the designated time.

Students are advised to pay close attention to the course schedule and online announcements on Canvas prior to each learning opportunity. It is important to highlight that the schedule will vary according to the desires of each group. Students may be required to complete many readings/modules online and then attend in-class instructor-facilitated summary discussions.

## POLICIES AND EXPECTATIONS

There are several policies by which a student should adhere to:

- Attendance to all instructor-facilitated tutorials is recommended highly, owing to the integrated nature of the course material. Absence from lectures has the potential to impair the ability of students to integrate course content.
- Students should familiarize themselves with the university and departmental policies regarding special accommodation, academic concession, illness, and/or disability. For more information please see: <http://students.ubc.ca/calendar/>

## COURSE SCHEDULE

---

Owing to the interactive nature of this course, the areas covered are subject to change depending on the requirements and/or requests of the class. The course content is that of the recommended readings and information derived from the lectures and group discussions.

## LEARNING ACTIVITIES

---

This course relies heavily on self-directed learning; therefore, students must take responsibility for their learning including (but not exclusive to) incorporating information not provided in the traditional textbooks and working well with other group members. The marks may be scaled to maintain the normal average and distribution for this course.

This course will involve extensive student centred-learning, similar to what is now currently employed in many undergraduate medicine programs. Students who complete this course will be well prepared for other programs that use problem-based learning. In this course we will follow the principals of Barrows (1996) wherein student learning occurs in smaller student groups (4-6 students per group), and original problems provide the basis for learning and the development of critical thinking and self-directed learning skills. The role of the instructor is to help students learn through self-discovery. The instructor therefore serves as the facilitator in each lecture rather than providing traditional lectures.

Real-life problems will be used as a stimulus for the development of problem solving and critical thinking skills. Students are required to be active participants in the discovery of information. Thus, unlike traditional lectures, in this course students will have an active engagement with course content.

Students are expected to build upon the information from other courses in their undergraduate and/or graduate education. The skills learned from various fields (such as the humanities, biological sciences, etc.) can be used effectively in tackling the various issues presented. Students should welcome individuals from diverse backgrounds as their experiences and expertise will bring a fresh approach to each case study.

Importantly, the learning environment is meant to be an atmosphere that is welcoming to others, conducive to learning, challenges the learner, and encourages intellectual curiosity. As such, students should feel comfortable, supported, and respected.

## LEARNING MATERIALS

---

Our course utilizes Canvas, as an online learning management system. When permissible, learning resources will be posted directly to Canvas OR links provided, which allows students to access the required learning materials.

## ASSESSMENTS OF LEARNING

---

The assessment of the course learning objectives will be conducted using a variety of methods, including: individual and group participation tasks.

### EVALUATION PROCEDURES

- |                            |     |
|----------------------------|-----|
| 1. Group Wiki Project      | 40% |
| 2. Individual Presentation | 40% |
| 3. Research Paper          | 20% |

### EVALUATION PROCEDURE DESCRIPTION

#### *Group Wiki Project (40%)*

During the first week of classes, students will be assigned randomly to a small problem-based learning group. This group will generally consist of 2-4 members. This group will work together to create a group Wiki page on a specific area related to health, wellness, cardiovascular physiology, and/or clinical exercise rehabilitation incorporating Indigenous understandings of health and wellness. See the following example Wiki Pages from our course:

[https://wiki.ubc.ca/Health\\_Related\\_Physical\\_Fitness\\_in\\_Persons\\_with\\_Type\\_I\\_Diabetes\\_-\\_KIN\\_500](https://wiki.ubc.ca/Health_Related_Physical_Fitness_in_Persons_with_Type_I_Diabetes_-_KIN_500)  
[https://wiki.ubc.ca/Course:KIN\\_500C\\_Spring\\_2019](https://wiki.ubc.ca/Course:KIN_500C_Spring_2019)  
[https://wiki.ubc.ca/Course:KIN\\_500c\\_2018](https://wiki.ubc.ca/Course:KIN_500c_2018)

Students will need to plan appropriately for the development of this Wiki page. All Wiki pages must be completed at least one week before the end of class and will be evaluated by peers (anonymously) and by Dr. Warburton. The significant proportion of the course will be allocated to the development of the Wiki pages.

### *Individual Presentation (40%)*

Each student will be responsible for conceptualizing a topic that relates directly to the Group Wiki Project. The topics may cover a wide range of areas including discussing the latest advancements in the field of interest and highlighting novel methodologies and/or techniques. In the past, students have presented on topics related to traditional Indigenous physical activities, the assessment of physical activity and sedentary behaviour (via accelerometry), glucose tolerance testing, Quality of Life, cardiovascular function assessment (e.g., impedance cardiography, left ventricular torsion and twist mechanics, acetylene rebreathing, baroreceptor reflex/sensitivity assessment, transcranial Doppler sonography). Students will be required to create a 3-5 min presentation to give the class.

Students will be asked to give their presentation in person (or online) during the last week of classes (or at a mutually agreed upon time by the class and facilitator). Students will be also required to create a quality video production of their presentation that can be shared on the Group Wiki Page. The length of both the in-person and video presentations should be between 3-5 min. Video recording and editing equipment are available in the School of Kinesiology. These presentations can be made using a variety of programs including (but not exclusive to) Powerpoint, Camtasia, Vyond, etc. We ask that all videos are created without a watermark.

Further instructions regarding the presentations will be provided in class. However, it is important to follow these key principles:

- BE CREATIVE
- HAVE FUN
- CREATE SOMETHING THAT YOU AND YOUR FRIENDS/FAMILY WOULD ENJOY VIEWING
- MAKE AN EVIDENCE-BASED STATEMENT
- BE RESPECTFUL OF OTHERS
- CREATE A PRESENTATION/VIDEO THAT WOULD BE APPROPRIATE FOR SOCIAL MARKETING CAMPAIGNS
- USE YOUR OWN WORDS AND IMAGES TO AVOID ANY COPYRIGHT INFRINGEMENTS

Students will be marked on the professionalism of their presentation (in both seminar and video format), the quality of their work, and the innovation of the topic. Students should avoid covering topics that are familiar to those in undergraduate education, focusing on topics that are innovative and new to many in the course.

### *Research Paper (20%)*

Each student is required to complete a well-referenced paper related to her/his individual presentation. It is the goal to publish each article in the Health & Fitness Journal of Canada. The format of each article should follow the guidelines of the Health & Fitness Journal of Canada (<http://www.healthandfitnessjournalofcanada.com>). The word limit of these papers is consistent with the style of article submitted: Original articles (up to 6,000 words), Review Articles (2,000-3,000 words), and Commentaries (500-1,000 words). Referencing format should follow the American Psychological Association (APA) 6th edition.



## UNIVERSITY POLICIES

---

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.

Details of the policies and how to access support are available on [the UBC Senate website](#).

## OTHER COURSE POLICIES

---

### 1. LEARNING ANALYTICS

---

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. This course will be using the following learning technology: Canvas, UBC Qualtrics. These tools will capture data about your activity and provide information that can be used to improve quality of course teaching and learning, as well as curriculum development. In this course, analytics data will be used to: (a) View overall class progress; (b) Review statistics on course content being accessed to support improvements in the course ; (c) Track participation in discussion forums; and (d) Assess participation in the course.

### 2. COPYRIGHT

---

All materials of this course are the intellectual property of the Course Instructor or licensed to be used in this course by the copyright owner. Redistribution of these materials by any means without permission of the copyright holder(s) constitutes a breach of copyright and may lead to academic discipline.

Recording and/or use of photography during class lectures is not permitted except in extenuating circumstances, which must be discussed and pre-arranged with the Course instructor.

### 3. CORRESPONDENCE

---

When corresponding with the course instructor and/or teaching assistant(s) over e-mail, please use your UBC e-mail account and include 'KIN 500' in the subject heading. Use appropriate salutations and professional grammar in all e-mail correspondence. During the school week, it is our aim as your course teaching unit to respond to your e-mail within 12 hours; however, please be aware that e-mails may not be checked and/or responded to over the week-end (i.e., from 5:00 pm Friday until 9:00 am Monday) or after business hours on weekdays (i.e., before 9:00 am or after 5:00 pm). Asking course content questions through e-mail are welcome; however, question quantity should be limited in nature. In fact, many questions are better discussed in person and you may be directed to make an appointment or attend office hours with the course instructor if this is the case. Therefore, please manage your time appropriately throughout the semester and keep abreast of course content and approaching course deadlines.

#### 4. CLASSROOM TECHNOLOGY

While laptops and tablets are permitted in the lecture hall, use of such devices for verbatim transcription is counterproductive to learning and highly discouraged. Surfing the web and checking/sending e-mails is prohibited during class time. Students may be asked to turn off their computer or leave the room if their computer use is a distraction for the instructor, teaching assistant(s), and/or other students.

Cell phones are only permitted inside the lecture hall for use in the event of an emergency. Therefore, cell phones should not be visible and phone operations must be placed in a mode that cannot be discerned by others. An exception to cell phone visibility/use is if it is needed for medical purposes.

Recording of class lectures (via video and/or audio methods) or photographing class materials is prohibited except in extenuating circumstances, which must be discussed and pre-arranged with the course instructor.

*Version: January 8, 2023*