

**Faculty of Health
School of Kinesiology & Health Science**

HH/KINE 4450 3.0 - Winter Term 2017

Advanced Exercise Physiology: The Cardiovascular System

• Course Director

Dr. Olivier Birot

Contact information: Office hours by appointment only. Request for appointment should be made by email at birot@yorku.ca. The "title" of your email should clearly refer to KINE4450. Indicate your first name, last name, and student number.

• Course Description

An overview of the cardiovascular physiology of exercise at both the central (heart) and peripheral (muscle capillaries) levels.

• Expanded Course Description

This course is an in-depth look at the physiological responses of the cardiovascular system to acute exercise and prolonged endurance training with special focus on the concept of "muscle angio-adaptation and capillary plasticity" as this key determinant of muscle adaptation to contractile activity remains unfortunately absent of all available physiology textbooks. Physiological adaptation at the molecular level is emphasized. Several methodological approaches routinely used in molecular physiology will be discussed.

• Course Organization

Two 90 minutes lectures per week / 12 weeks. Lectures are based on the existing scientific literature including textbooks and research articles.

• Course Learning Objectives

On completion of this course, students should be able to explain how the cardiovascular system responds to an acute exercise and how it adapts to prolonged endurance training.

Course goals:

- To provide to the students the principles of cardiovascular physiology in the context of response to acute exercise and adaptation to prolonged endurance training.
- To develop the students' critical thinking by analyzing several research articles during the class.

• Evaluation

- In-class evaluation #1, Jan 31, duration 60 min, 25%.
- In-class evaluation #2, March 02, duration 60 min, 25%.
- In-class evaluation #3, March 30, duration 60 min, 15%.
- Final exam, duration 60-90 (TBD) min, 35%.

Exams are based on short-writing questions. All exams are cumulative. There is no deferred exam for In-class exams #1-2. If missing one of them with appropriate justification, the % of the exam will be transfer to the final.

• Resources (library/physical/other)

References will be from peer-reviewed journal articles, book chapters and review papers. Most of the articles are available through the York University library system, most of them electronically.

• York's Senate Policy on Academic Honesty

All students should be familiar with [York's Senate Policy on Academic Honesty](http://www.yorku.ca/secretariat/policies/document.php?document=69) (<http://www.yorku.ca/secretariat/policies/document.php?document=69>), which defines and clarifies York's commitment to maintaining the highest standards of academic honesty.

The policy:

- Recognizes the general responsibility of all faculty members to foster acceptable standards of academic conduct and of students to be mindful of and abide by such standards

- Defines what are considered [academic offenses](#), including plagiarism, cheating, impersonation, and other forms of academic misconduct
- Defines the [penalties](#) that can be given to students found to have committed plagiarism or any other form of academic offense
- Outlines the [procedures](#) for dealing with students who are accused of committing an academic offense

While it is recognized that there are many pressures on students that may lead to academic misconduct, such as achieving high grades, meeting deadlines. Nevertheless, despite these pressures, each student has clear responsibility for his or her academic honesty.