

# Senate Committee on Academic Standards, Curriculum & Pedagogy

## KINE4450 -Advanced exercise physiology: Cardiovascular system

### FACULTY OF HEALTH KINESIOLOGY AND HEALTH SCIENCE

**Course:** HH/KINE 4450. 3.0 – Advanced exercise physiology :Cardiovascular

**Course\_Webpage:** <https://eclass.yorku.ca/course/view.php?id=73716>

**Term:** Fall Term 2022

**Prerequisite / Co-requisite:** HH/KINE 2011 3.0 Human physiology I, HH/KINE 3012 3.0 Human physiology II, Exercise physiology 4010 3.0

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#### Course Instructor

List all course instructors. Include listing of teaching assistants, when information is available. If full teaching complement not identified prior to start of term, provide an updated list as in-class handout and/or on course website.

Course director: Emilie Roudier  
(416) 736-2000 ext 44312  
Life science building LSB429D  
[eroudier@yorku.ca](mailto:eroudier@yorku.ca)  
Course consultation hours: by appointment only, preferred via Zoom

Teaching assistant: Dayna Essue  
Life science building LSB429  
[dayna4@my.yorku.ca](mailto:dayna4@my.yorku.ca)  
Course consultation hours: by appointment only, preferred via Zoom

#### Time and Location

Lectures                      MW 8:30                                      VH 3009

#### Office hours.

Preferred mode of office hours will be virtually or through phone calls, exceptionally in-person. Maximum duration of an appointment is 30 minutes. Students must contact the teaching assistant and/or course director by email to arrange an appointment. Once contacted by email the course director or teaching assistant will confirm the location (online through a Zoom meeting, phone and only if needed in person), date and time of the appointment. For virtual office hours, the course director will provide a link to a Zoom meeting room upon request made by students (office hours appointment). The link provided will guide the students regarding how to reach the meeting room and how to use Zoom (through Browser or installing the App). Zoom meeting can be done on a laptop, desktop, smart phone or phone.

#### Technical requirements for taking the course:

This course is delivered in person. All course material is available on E-Class. If classroom allows it, in-person lecture will be recorded with animated PowerPoint slide and lecturer description of slides. These recordings will be available within the following week in E-Class (or earlier when possible). In-class

activities related to required reading will not be recorded. When possible, the lecturer will provide a summary of activities at the start of the next lecture.

## **Expanded Course Description**

This course takes an in-depth look at the physiological responses of the cardiovascular system to acute exercise and prolonged endurance training. The three components of the cardiovascular system are studied: Blood, vessels, and heart. The course will discuss how exercise modulates the structures and the functions of the main components of the cardiovascular system: the blood, the heart and the blood vessels. This course will also discuss how the microvascular plasticity plays an important role in cardiovascular adaptation to prolonged endurance training. Adaptations taking place in endurance and extreme endurance athletes will be used to illustrate how the cardiovascular system adapt and is remodelled by exercise training.

This course is based on mostly in-person sessions and few asynchronous activities (formal lectures or instructions for assignments). In-person sessions are based on formal lectures, interrupted by discussions around these readings and lectures.

There are 5 modules. Each of the modules will include:

- Formal lectures. Lectures are based on the existing scientific literature and research articles. With references provided on slideshow.
- Discussions around required readings (available on E-Class). The instructor will stimulate discussion in-class (in-person) and in E-class in Forums to support the learning objectives and the preparation of the reading responses
- Review of key material of the modules done before Mid-term examination and final assignment
- Instructions/recommendation for students' work (assignments, test) associated to the module.

This course includes participation marks (5%). The following is expected:

- All students are expected to provide questions for each module.
- Throughout the course students must demonstrate active participation to the in-person sessions, not just attending but rather being active during these sessions (asking questions, articulating ideas and reflections around concepts).
- Alternatively, when students cannot attend in-person sessions or are attending but inactive during sessions, participation marks can be gained online through discussions on E-class forums (One forum per module, one or two discussions per forum).

Weekly announcements notify students of the course activity and required readings. It is the student responsibility to follow the course announcements. Students are responsible for performing activities and reading as indicated.

## **Course Objectives**

### **(1) Brief statement of the purpose:**

The purpose of this course is to guide student through an in-depth analysis of the scientific literature that described the physiological responses of the cardiovascular system to acute exercise and to exercise training. This course aims to guide the student through past as well as most advanced literature in the field of cardiovascular physiology. Also, it aims to provide students a better understanding of the basic molecular and cellular methods used in cardiovascular physiology, allowing the students to develop a critical thinking approach to the analysis of scientific literature.

## (2) Brief list of specific learning outcomes of the course:

At the end of the course, the students will be able to:

- Discuss the molecular, cellular and physiological response of the cardiovascular system to an acute bout of exercise
- Discuss the molecular, cellular and physiological response of the cardiovascular system to exercise training (more particularly endurance training)
- Critically examine scientific evidence in the field of cardiovascular physiology
- Combine the knowledge acquired through the analysis of scientific articles to create a documentation (commentary including text + brochure) that summarizes by writing and visually the effect of exercise on the cardiovascular system

## Course Text / Readings

This course has 5 modules, potentially 6 modules. Each module has required readings that include one PowerPoint slideshow one or more research articles. For some modules, required watching (Video) or listening (Podcast) might apply (see in Module). All material will be provided on E-class in a timely manner, at the start of each Module. For more information about the modules visit the E-class course.

**Required readings** for this course include scientific articles provided in the E-class folder for each Modules. Bot PDF files and link to the articles will be provided. Additional required materials, such as Podcast or Video will be provided in E-class.

**Suggested readings: Physiology of Sport and Exercise**, Wilmore, Costill & Kenney, *Human Kinetics Ed.* Some lectures are based on some chapters of this textbook.

**NB:** Additional optional readings are indicated in slideshow or in the E-class modules.

## Evaluation \*

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- **Participation: during in-person sessions and online (5%):**  
Students should provide questions or comments for all modules to feed the in-person sessions. The instructor will dedicate some in-class time for students to ask questions or to comment on material previously covered. Students will also be invited to participate during activities related to required readings.  
Alternatively, when students are inactive during in-person sessions or unable to attend, participation to online discussions can compensate for the lack of active in-class participation. Each module will have one dedicated E-Class forum. The instructor will stimulate the discussion during in-person sessions and online by asking questions that facilitate students' reflective activity on readings and lectures. All students are also invites provide questions for review sessions to support preparation to mid-term examinations and reading response (one per module, follow course announcements for date of review sessions).
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- **Two mid-term in-class examination (non-cumulative) (total 40% of the final mark).** They will be based on short answers and short text answers questions.
    - In-class examination 1 worth 20% of the final mark.
      - **Monday October 17<sup>th</sup>, 2022, (75 minutes)**
    - In-class examination 2 worth 20% of the final mark.
      - **Monday November 21<sup>st</sup>, 2022 (75 minutes)**

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- **3 reading responses (12 % each total 36% of the final mark).** Reading responses will be due:
    - Reading response 1 due on **Monday, September 26<sup>th</sup>, 2022, 19:00**
    - Reading response 2 due on **Wednesday, October 26<sup>th</sup>, 2022, 19:00**
    - Reading response 3 due on **Wednesday, November 9<sup>th</sup>, 2020, 19:00**
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- **Final assignment (19%):** The final assignment aims to answer a question of integrative physiology that includes text and a figure. Under a format that will be similar than writing a commentary in a scientific journal. The instructor will provide the integrative question in E-class and will provide guidelines and propose in-class activities to ensure students have the theoretical knowledge and gain practical skills regarding how to write a commentary and create a figure. The integrative question will be related to the main topic of the course “the cardiovascular system and its capacity to adapt to exercise training”. The question will be provided on November 21<sup>st</sup>, 2022.
    - Final assignment is due **on Tuesday, December 6<sup>th</sup>, 2020. 21:00.**
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By November 11<sup>th</sup>, 2020 (drop deadline), students will have returned 56% of the course work and should have 44% of the work marked.

### **Grading, Assignment Submission, Lateness Penalties and Missed Tests**

**Grading:** The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ = 7, C+ = 5, etc.). Assignments and tests\* will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.). (For a full description of York grading system see the York University Undergraduate Calendar - [Programs | 2022-23 Undergraduate Academic Calendar | York University](#))

Students may take a limited number of courses for degree credit on an ungraded (pass/fail) basis. For full information on this option see Alternative Grading Option in the *Faculty of Health* section of the Undergraduate Calendar: <https://registrar.yorku.ca/grades/legends/health>

**Assignment Submission:** Proper academic performance depends on students doing their work not only well, but on time. Accordingly, assignments for this course must be received on the due date specified for the assignment (deadlines are specified in the course outline or in E-class). Accordingly, assignments for this course must be received on the due date specified for the assignment. Assignments are to be handed online on E-class, instructions for submission will be described in both the in-person sessions and in E-class. The instructor will also make announcements on E-class to inform students regarding submission process when appropriate. Forums will close at the time and dates indicated on E-class. Deadlines of assignments will also appear on E-class assignments.

**Lateness Penalty:** Assignments received later than the due date will be penalized (**penalized 0.5 % per day of delay**). For example, if an assignment worth 19%, the instructor will apply -0.5% for each day of delay. Assignments submitted 5 business days after the deadline will not be considered. Exceptions to the lateness penalty for valid reasons such as illness, compassionate grounds, etc., may be entertained by the Course Instructor but will require supporting documentation (e.g., a doctor’s letter).

**Missed Tests:** Students with a documented reason for missing a course test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., doctor’s letter) may request accommodation from the Course Instructor. Accommodation includes that the instructor will set up make up deferred examinations in the case of a missed in-class examination or new deadline for the submission of the assignment; only if the appropriate documentations is provided to the course director. Further extensions or accommodation will require students to submit a formal petition to the Faculty of Health.

## ACADEMIC HONESTY AND INTEGRITY

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's [Academic Integrity module](#) at the beginning of the course. Breaches of academic integrity range from cheating (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.) to aiding and abetting (helping someone else to cheat). All breaches in this course will be reported to the appropriate university authorities, and can be punishable according to the [Senate Policy on Academic Honesty](#).

To promote academic integrity in this course, students will be normally required to submit their written assignments to Turnitin (via the course E-Class) for a review of textual similarity and the detection of possible plagiarism. In so doing, students will allow their material to be included as source documents in the Turnitin.com reference database, where they will be used only for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin service are described on the Turnitin.com website.

## ADDITIONAL INFORMATION

**Referencing Style:** The referencing style approved by the course director is the Vancouver style. York University Libraries provide [manuals](#). Please see <http://michener.ca/students/library/referencing-writing-help/vancouverstyle/>

### Time commitment:

Description of the components of the course	Time to dedicate
Review of material	~30 min / week
Reading of additional material provided online (E-class)	~80-100 min / week
Preparation of the assignment (~20 hours total)	~100-120 min / week
Total of study-time outside the classroom	210-350 min /week

## WRITING AND LEARNING SKILLS

You are strongly encouraged to seek assistance from the following university units.

1. [Writing Centre Welcome to the Writing Centre - The Faculty of LA&PS \(yorku.ca\)](#)
2. [Learning Commons \(yorku.ca\)](#)
3. [Learning Skills Services - Student Community & Leadership Development \(yorku.ca\)](#)

Colleges can provide further support to KAHS students. See the information below regarding the Calumet and strong colleges' student success programming:

### **Calumet and Stong Colleges aim to support the success of Faculty of Health students through a variety of free programs throughout their university career:**

- [Orientation](#) helps new students transition into university, discover campus resources, and establish social and academic networks.
- [Peer Mentoring](#) connects well-trained upper-year students with first year and transfer students to help them transition into university.
- [Course Representative Program](#) supports the academic success and resourcefulness of students in core program courses through in-class announcements.
- [Peer-Assisted Study Sessions \(PASS\)](#) involve upper-level academically successful and well-trained students who facilitate study sessions in courses that are historically challenging.
- [Peer Tutoring](#) offers one-on-one academic support by well-trained Peer Tutors.
- Please connect with your Course Director about any specific academic resources for this class.

- Calumet and Stong Colleges also support students' Health & Wellness, leadership and professional skills development, student/community engagement and wellbeing, Career Exploration, Indigenous Circle, awards and recognition, and provide opportunities to students to work or volunteer.
- For additional resources/information about Calumet and Stong Colleges' Student Success Programs, please consult our websites (Calumet College; Stong College), email [scchelp@yorku.ca](mailto:scchelp@yorku.ca), and/or follow us on Instagram (Calumet College; Stong College), Facebook (Calumet College; Stong College) and LinkedIn.
- Are you receiving our weekly email (Subject: "Calumet and Stong Colleges - Upcoming events")? If not, please check your Inbox and Junk folders, and if it's not there then please contact [ccscadm@yorku.ca](mailto:ccscadm@yorku.ca), and request to be added to the listserv. Also, make sure to add your 'preferred email' to your Passport York personal profile to make sure you receive important news and information.

## **IMPORTANT COURSE INFORMATION FOR STUDENTS**

All students are expected to familiarize themselves with the following information, available on the Senate Committee on Academic Standards, Curriculum & Pedagogy webpage (see Reports, Initiatives, Documents) - <https://secretariat.info.yorku.ca/files/CourseInformationForStudentsAugust2012-.pdf>

- Senate Policy on Academic Honesty and the Academic Integrity Website
- Ethics Review Process for research involving human participants
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities
- Student Conduct Standards
- Religious Observance Accommodation

*November 2013*

*Links updated August 30, 2018*

*Updated by Emilie Roudier on September 4<sup>th</sup>, 2022*