

**McGill University**  
**Department of Kinesiology & Physical Education**  
**EDKP 395: Exercise Physiology**  
**Course Outline, Fall 2019**

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### **Instructor**

Charlotte Usselman, Ph.D. [charlotte.usselman@mcgill.ca](mailto:charlotte.usselman@mcgill.ca)  
Currie Memorial Gymnasium  
475 Pine Avenue West, Room A204  
Office hours: Mondays, 11:30am – 1:00pm (A204)

### **Teaching Assistants**

Danielle Berbrier, B.Sc. [danielle.berbrier@mail.mcgill.ca](mailto:danielle.berbrier@mail.mcgill.ca)  
Yasmine Coovadia, B.Sc. [yasmine.coovadia@mail.mcgill.ca](mailto:yasmine.coovadia@mail.mcgill.ca)  
Evan Jette, B.Sc. [evan.jette@mail.mcgill.ca](mailto:evan.jette@mail.mcgill.ca)  
Emily Koch, B.Sc. [emily.koch@mail.mcgill.ca](mailto:emily.koch@mail.mcgill.ca)

### **TEAM Undergraduate Peer Mentors**

Fayeza Ahmad (U3) [fayeza.ahmad@mail.mcgill.ca](mailto:fayeza.ahmad@mail.mcgill.ca)  
Maxymme Bégin (U3) [maxymme.begin@mail.mcgill.ca](mailto:maxymme.begin@mail.mcgill.ca)  
Sabrina Chan (U3) [sabrina.chanchunkong@mail.mcgill.ca](mailto:sabrina.chanchunkong@mail.mcgill.ca)  
Domenica Cirone (U3) [domenica.cirone@mail.mcgill.ca](mailto:domenica.cirone@mail.mcgill.ca)

### **Lecture Schedule (see Page 3 below)**

Tuesdays and Thursdays, 2:35 - 3:55pm, Currie Gymnasium, Room 408/9

### **Laboratory Schedule (see Page 4 below)**

EDKP 395-002 8045: Thursday, 8:35 – 10:25 AM  
EDKP 395-003 8046: Friday, 8:35 – 10:25 AM  
EDKP 395-004 8047: Friday, 10:35 AM – 12:25 PM  
Location: Currie Gymnasium, Adriano Tassone Teaching Laboratory, Room 304

### **COURSE DESCRIPTION**

This course provides the necessary understanding of the physiological adaptations that occur in the human body in response to exercise. Teaching will be re-enforced through laboratory experiences, in-class presentations, and assignments.

### **COURSE OBJECTIVES**

Upon completion of this course, the student will have:

1. Developed an understanding of the fundamentals of exercise physiology, including the integrative nature of the human body's response to exercise.
2. Gained practical (or 'hands on') experience conducting experiments in an exercise physiology laboratory setting.
3. Developed their capacity to analyze and interpret the results of exercise physiology laboratory experiments and peer-reviewed publications.
4. Developed their scientific reading and writing skills.

## SUPPLEMENTARY COURSE TEXTS

1. McArdle WD, Katch FI & Katch VL. Exercise Physiology: Nutrition, Energy, and Human Performance, 8<sup>th</sup> Edition. Wolters Kluwer, Lippincott Williams & Wilkins, New York, NY, USA, 2015.
2. ACSM's Advanced Exercise Physiology, 2<sup>nd</sup> Edition. Editors: Farrell PA, Joyner MJ & Caiozzo VJ. Wolters Kluwer, Lippincott Williams & Wilkins, New York, NY, USA, 2012.
3. Brooks GA, Fahey TD & Baldwin KM. Exercise Physiology: Human Bioenergetics and its Applications, 4<sup>th</sup> Edition. McGraw Hill, New York, NY, USA, 2005.

**Note:** Please make arrangements with Dr. Usselman if you would like to review one of the supplementary texts. A limited number of reserved copies of McArdle, Katch & Katch are available at the McGill University Humanities and Social Sciences Library. Please use the following link to check availability:

<https://mcgill.on.worldcat.org/courseReserves/course/id/14006425>

## COURSE EVALUATION

Laboratory assignments .....	<b>35%</b>
Lab 1 (full report) .....	10%
Lab 2 .....	7.5%
Lab 3 (full report) .....	10%
Lab 4 .....	7.5%
Journal club .....	<b>15%</b>
Midterm examination (Tuesday, October 15 <sup>th</sup> , in class) .....	<b>20%</b>
• <i>Will cover material from September 05-October 03, 2019</i>	
Final examination (During exam period, date TBA).....	<b>30%</b>
• <i>Non-cumulative: will cover material from October 08-November 28, 2019</i>	

**\*\*Students are responsible for all material covered in lectures, labs, and journal clubs\*\***

**LECTURE SCHEDULE** (\*subject to change\*)

Lecture slides will be posted on the EDKP 395 MyCourses site in PowerPoint and PDF formats

<b>Date</b>	<b>Topic</b>	<b>Instructor</b>
September 3	Course introduction	CU
September 5	Bioenergetics and its control 1	CU
September 10	Bioenergetics and its control 2	CU
September 12	Exercise Metabolism	CU
September 17	Skeletal muscle: Structure and function 1	Daren Elkrief
September 19	Skeletal muscle: Structure and function 2	Daren Elkrief
September 24	Skeletal muscle: Structure and function – Journal clubs	Student presentations
September 26	Neural control of human movement 1	CU
October 1	Neural control of human movement 2	CU
October 3	Neural control of human movement – Journal clubs	Student presentations
October 8	Cardiovascular response to exercise 1	CU
October 10	Cardiovascular response to exercise 2	Yasmine Coovadia
October 15	Midterm Examination (in class)	
October 17	Cardiovascular response to exercise 3	CU
October 22	Cardiovascular response to exercise 4	CU
October 24	Cardiovascular response to exercise – Journal clubs	Student presentations
October 29	Muscle O <sub>2</sub> delivery response to exercise 1	CU
October 31	Muscle O <sub>2</sub> delivery response to exercise 2	CU
November 5	Muscle O <sub>2</sub> delivery response to exercise – Journal clubs	Student presentations
November 7	Thermoregulation during exercise	Dr. Nick Ravanelli
November 12	Thermoregulation during exercise – Journal clubs	Student presentations
November 14	Pulmonary physiology of exercise 1	Dr. Dennis Jensen
November 19	Pulmonary physiology of exercise – Journal clubs	Student presentations
November 21	Pulmonary physiology of exercise 2	Dr. Dennis Jensen
November 26	Pulmonary physiology of exercise 3	Dr. Dennis Jensen
November 28	Acid-base balance during exercise	CU

### LABORATORY SCHEDULE

Lab handouts will be posted on the EDKP 395 MyCourses site in PDF format at least 48 hours in advance of each scheduled laboratory.

Data collected during each lab will be compiled by Teaching Assistants and distributed to all students via the EDKP 395 MyCourses site on the dates listed below.

<b>Date</b>	<b>Topic</b>	<b>Data Available</b>	<b>Due Date</b>
September 12/13	<b>Laboratory 1:</b> Measurement of Anaerobic Energy Transfer: The Wingate Test	September 16	September 27
October 3/4	<b>Laboratory 2:</b> Measurement of Maximal Aerobic Working Capacity: The Symptom-Limited Incremental Cardiopulmonary Cycle Exercise Test	October 7	October 18
October 17/18	<b>Laboratory 3:</b> Skeletal Muscle Function	October 21	November 1
Oct 31/Nov 1	<b>Laboratory 4:</b> Blood Pressure Regulation during Exercise: Physiological Mechanisms	November 4	November 15

\*Lab assignments are due on the dates indicated by **no later than 4:30 pm EST via email to [edkp395@gmail.com](mailto:edkp395@gmail.com)**.

## LABORATORY POLICIES, PROCEDURES AND METHODS OF EVALUATION

Material covered in each of the 4 laboratory experiments may be covered on the final exam. These laboratories are designed to build upon the knowledge gained in the lectures and are interactive in nature, which requires that each student reads the laboratory handout and is familiar with the objectives and procedures before each class.

*(Please refer to EDKP 395 Lab Manual for more detailed information on Laboratory Policies, Procedures and Methods of Evaluation)*

- ✓ Unless you have *prior permission* from Dr. Usselman and/or the Teaching Assistant(s) to switch lab sections, **you are expected to attend the laboratory section for which you are registered**. This has important implications for tracking attendance, punctuality, etc.
- ✓ Laboratory reports must be written **individually or as a group of up to 3 students**.
- ✓ Experimental data required to complete each lab report will be compiled by the Teaching Assistants into a Microsoft Excel spreadsheet and posted on the EDKP 395 MyCourses site by no later than 4:30 pm on the dates outlined in the table on Page 3 above. Students will be notified via email when the data are available.
- ✓ Reports are due on the dates outlined in the table on Page 3 above. *Unexcused or unauthorized* late reports will be **penalized 10% per day** (equivalent to 1% of the final mark in EDKP 395) and will not be accepted after more than 10 days past the due date, including weekends. In the event that a student cannot submit their report on time due to circumstances beyond their control (e.g., personal or family health issue, etc.), then they must speak to Dr. Usselman and/or their Teaching Assistant as soon as possible and may be asked to provide supporting documentation (e.g., doctors note), when necessary and appropriate.
- ✓ Students are responsible for keeping back-up copies of all written work for this class. Computer data storage problems **will not be accepted** as an excuse for late laboratory reports.

## ATTENDANCE

Student attendance at each laboratory is **mandatory**. To this end, your *unexcused or unauthorized* absence from a scheduled laboratory will result in a **loss of 5% from your final mark in EDKP 395**. Students who plan to be absent for varsity athletics, family obligations or similar commitments must communicate with Dr. Usselman as far in advance of the conflict as possible. In the event that a student cannot attend a scheduled laboratory due to circumstances beyond their control (e.g., personal or family health issue, etc.), then they are expected to communicate with Dr. Usselman as soon as possible and may be asked to provide supporting documentation (e.g., doctors note), when necessary and appropriate. There will be no make-up labs for unexcused or unauthorized absences.

## PUNCTUALITY

Your *unexcused or unauthorized* lateness to a scheduled laboratory will result in a loss of marks. To this end, you will be penalized 1% of your final mark in EDKP 395 for arriving 15-30 minutes late, 2% for arriving >30 and ≤60 minutes late, 3% for arriving >60 and ≤90 minutes late and 4% for arriving within the last 20 minutes of the scheduled laboratory. In the event that a student is late due to circumstances beyond their control (e.g., sickness), then they must speak to Dr. Usselman and/or their Teaching Assistant(s) as soon after the scheduled laboratory as possible to explain the circumstances.

## JOURNAL CLUB POLICIES, PROCEDURES AND METHODS OF EVALUATION

Material covered in each of the journal club presentations may be covered on the final exam. The papers selected for journal clubs summarize seminal work within exercise physiology; the findings of these papers have either formed part of our fundamental understanding of exercise physiology, or represent controversial topics which continue to be studied today. All students in the class are required to read the journal club article(s) to be presented in class beforehand.

- ✓ Journal clubs will be completed **as a group of 5-8 students**.
- ✓ A “draft” of articles (each of which coincides with a presentation date) will take place at the beginning of class on Tuesday, September 10<sup>th</sup>. **At least 1 group member must be in class this day to choose an article, otherwise your group will be auto-assigned an article.**
- ✓ A sample journal club presentation (with handout) will be done by the TEAM Peer Mentors early in the semester, prior to the commencement of student presentations.
- ✓ Journal clubs consist of an in-class presentation (max. 15 min) as well as a handout (max. 1 page), both of which will summarize the key findings of the article, as well as rationale, methods, and strengths/limitations of the study design.

*(Please refer to [EDKP 395 Journal Club Instructions doc](#) for more detailed information on procedures and methods of evaluation)*

## ACADEMIC INTEGRITY

“McGill University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures” (see [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/) for more information).

« L'université McGill attache une haute importance à l'honnêteté académique. Il incombe par conséquent à tous les étudiants de comprendre ce que l'on entend par tricherie, plagiat et autres infractions académiques, ainsi que les conséquences que peuvent avoir de telles actions, selon le Code de conduite de l'étudiant et des procédures disciplinaires (pour de plus amples renseignements, veuillez consulter le site [www.mcgill.ca/students/srr/honest/](http://www.mcgill.ca/students/srr/honest/)). »

## LANGUAGE OF SUBMISSION

“In accord with McGill University’s Charter of Students’ Rights, students in this course have the right to submit in English or in French any written work that is to be graded.”

« Conformément à la Charte des droits de l'étudiant de l'Université McGill, chaque étudiant a le droit de soumettre en français ou en anglais tout travail écrit devant être noté (sauf dans le cas des cours dont l'un des objets est la maîtrise d'une langue). »

## ADDITIONAL STATEMENTS

- ✓ The [University Student Assessment Policy](#) exists to ensure fair and equitable academic assessment for all students and to protect students from excessive workloads. All students and instructors are encouraged to review this Policy, which addresses multiple aspects and methods of student assessment, e.g. the timing of evaluation due dates and weighting of final examinations.

- ✓ As the instructor of this course I endeavor to provide an inclusive learning environment. However, if you experience barriers to learning in this course, do not hesitate to discuss them with Dr. Usselman and the [\*Office for Students with Disabilities\*](#), 514-398-6009.
- ✓ [End-of-course evaluations](#) are one of the ways that McGill works towards maintaining and improving the quality of courses and the student's learning experience. You will be notified by e-mail when the evaluations are available. Please note that a minimum number of responses must be received for results to be available to students.
- ✓ Mobile computing and communication devices are permitted in class insofar as their use does not disrupt the teaching and learning process.
- ✓ In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.