



## DEPARTMENT OF PHYSICAL EDUCATION AND KINESIOLOGY

### COURSE OUTLINE – WINTER 2019

#### PE2000 (A3): Exercise Physiology – 3 (3-0-2) UT, 75H

**INSTRUCTOR:** Fábio Minozzo

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**OFFICE HOURS:** As posted or requested

#### **CLASS TIMES:**

Lectures: Monday & Wednesday, 2:30 – 3:50, J226

Labs: Monday 12:00/ Tuesday 2:30 / Friday 8:00

#### **CALENDAR DESCRIPTION:**

The lecture, laboratory experience, and supplementary readings are designed to promote an understanding of the physiological responses to acute and chronic exercise. Successful completion of the course requirements will enable the student not only to understand the basic function of various physiological systems in response to the most common types of exercise / training but also to perform and analyze a few of the most common standard assessments employed used by exercise physiologists.

#### **PREREQUISITE(S)/COREQUISITE:**

PE1020 or PE1015

#### **REQUIRED TEXT/RESOURCE MATERIALS:**

1- McArdle, W.D., Katch, F.T., and Katch, V.L. (2016). Essentials of Exercise Physiology: 5th e. Philadelphia: Wolters Kluwer.

#### **SUGGESTED AND AUXILIARY MATERIALS:**

- 1- George A Brooks, Kenneth M Baldwin, Thomas D. Fahey (2004). Exercise Physiology: Human Bioenergetics and Its Applications. McGraw-Hill Education
- 2- PW. Larry Kenney, Jack Wilmore, David Costill. Physiology of Sport and Exercise (2015) – Human Kinetics 6th Edition
- 3- Scott Powers and Edward Howley Exercise Physiology: Theory and Application to Fitness and Performance (2009) – 7<sup>th</sup> Edition – Mc Graw Hill Education.
- 4- ACSM's guidelines for exercise testing and prescription (2017): Wolters Kluwer/Lippincott Williams & Wilkins Health, 10<sup>th</sup> edition.
- 5- Garber CE, Blissmer B, Deschenes MR, Franklin BA, Lamonte MJ, Lee IM, Nieman DC, Swain DP (2011). American College of Sports Medicine position stand: Quantity and quality of exercise for developing and

maintaining cardiorespiratory, musculoskeletal, and neuromotor fitness in apparently healthy adults: guidance for prescribing exercise. Med Sci Sports Exerc. 43(7):1334-59.

### DELIVERY MODE(S):

Lecture, problem-solving exercises, practical labs.

### COURSE OBJECTIVES:

- To provide the student with a knowledge and understanding of the concepts of various physiological systems at rest and in response to acute and chronic exercise;
- To provide the student with the basic knowledge and understanding of a few of the most common physiological adaptations to different forms of exercise training and environmental influences;
- To develop skills in basic types of assessments (i.e. CPET, Wingate, etc) in the field of exercise physiology.

### LEARNING OUTCOMES:

Students who successfully complete this course should be able to:

- Integrate their knowledge on human physiology to exercise physiology;
- Identify a few of the most common training methods in relation to the three major energy systems and how they apply to exercise physiology;
- Explain a few of the most common types and protocols of exercise training and the adaptations induced by these;
- Name, describe and implement a variety of physiological tests that may be used on humans of various abilities;
- Understand research and being able to execute a few of the common exercise tests and assessments;
- Analyze research and apply the appropriate concepts to class sessions.

### CLASS SCHEDULE:

<b>PE2000 EXERCISE PHYSIOLOGY WINTER 2019 SCHEDULE (Tentative)</b>					
<b>IN CLASS LECTURES</b>			<b>LABORATORY</b>		
<b>Mondays</b>	<b>TOPIC</b>	<b>Wednesdays</b>	<b>TOPIC</b>	<b>M/T/F</b>	<b>TOPIC</b>
31-Dec-18	No Classes	2-Jan-19	No Classes	31-01-04	No Labs
7-Jan-19	Intro to the course (Ch01)	9-Jan-19	Macro and Micronutrients (Ch02)	07-08-11	Basic Ergometry
14-Jan-19	Food and Energy (Ch03)	16-Jan-19	Intro to Energy Transfer (Ch05)	14-15-18	<b>Wingate (Lab Report)</b>
21-Jan-19	Human Energy Transfer (Ch06)	23-Jan-19	Measuring and Evaluating (Ch07)	21-22-25	<b>Force-Velocity (Lab Report)</b>
28-Jan-19	Energy Expenditure (Ch08)	30-Jan-19	Respiratory System (Ch09)	28-29-01	Anaerobic Tests
4-Feb-19	Cardiovascular System (Ch 10)	6-Feb-19	Neuromuscular System (Ch11)	04-05-08	Continuous Vs Intermittent
11-Feb-19	Review / Questions	13-Feb-19	<b>MIDTERM</b>	11-12-15	Body Composition
18-Feb-19	<b>Winter Break</b>	20-Feb-19	<b>Winter Break</b>	18-19-22	<b>Winter Break</b>
25-Feb-19	EXAM REVIEW	27-Feb-19	Hormonal Response (Ch12)	25-26-01	Response to Submax PO
4-Mar-19	Endurance Training (Ch13)	6-Mar-19	Endurance Training (Ch13)	04-05-08	Energy Exp and Efficiency
11-Mar-19	Resistance Training (Ch14)	13-Mar-19	Resistance Training (Ch14)	11-12-15	CPET and Thresholds
18-Mar-19	Exer in Diff conditions (Ch15)	20-Mar-19	Exercise and Aging (Ch17)	18-19-22	<b>CPET cont (Lab Report)</b>
25-Mar-19	Clinical Aspect of Exer (Ch18)	27-Mar-19	Ergogenic / Nutr Aids (Ch4)	25-26-29	<b>Critical Power (Lab Report)</b>
1-Apr-19	Body Comp and Exer (Ch16)	3-Apr-19	<b>LAB EXAM</b>	01-02-05	No Labs
8-Apr-19	Review / Questions	10-Apr-19	Final Review / Seminar	08-09-12	

## EVALUATIONS:

Review and Seminars (4x 1.25% each)	5%
Lab Write-Ups (4x 5% each)	20%
Lab Exam: April 5 <sup>th</sup> , 2019	20%
Midterm Exam: February 14th, 2018	25%
Final Exam TBA: April 15-27, 2019	30%
	100%

## GRADING CRITERIA: (The following criteria may be changed to suite the particular course/instructor)

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-pt equivalent	%		Alpha Grade	4-pt equivalent	%
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

## TRANSFERABILITY:

**A list of institutions to which this course transfers (For example: UA, UC, UL, AU, GMU, CU, CUC, KUC. Please note that this is a sample and it must be replaced by your specific course transfer)**

**\*Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities.** Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page <http://www.transferalberta.ca> or, if you do not want to navigate through few links, at <http://alis.alberta.ca/ps/tsp/ta/tbi/onlineearch.html?SearchMode=S&step=2>

**\*\* Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

## STUDENT RESPONSIBILITIES:

This is a 3-credit course with 2 classes and 1 lab a week. It is the student's responsibility to read and understand the required areas of the text. The objective of the lectures is to highlight the major concepts of each topic area and provide examples to facilitate comprehension.

Students are not only encouraged to read other chapters in the text book such as 4, 13, & 14 but also to read other suggested material and text books, in order to gain an appreciation of physiological testing, training methodology, training adaptations and ergogenic aids that impact the acute and chronic adaptations to exercise. Some of these topics will be incorporated in the lectures and labs but are primary topics of other courses.

## STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the College Calendar at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at <https://www.gprc.ab.ca/about/administration/policies>

**\*\*Note:** all Academic and Administrative policies are available on the same page.