DEPARTMENT OF PHYSICAL EDUCATION AND KINESIOLOGY

COURSE OUTLINE – WINTER 2020

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

INSTRUCTOR: Fabio Minozzo
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OFFICE HOURS: As posted or requested

CLASS TIMES:

Lectures: Monday & Wednesday, 2:30 – 3:50
Labs: Monday 12:00/ Tuesday 2:30

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 one to understand the basic function of various physiological systems; describe the various physiological changes that occur during acute exercise and the various adaptations to different forms of exercise training and environmental influence; understand the basic ergometry and other laboratory instrumentation for evaluating physiological response to exercise; and experience exercise stress in a laboratory setting as a participant and tester.

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 Klewer.

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) – 7th Edition – Mc Graw Hill Education.
4- ACSM's guidelines for exercise testing and prescription (2017): Wolters Kluwer/Lippincott Williams & Wilkins Health, 10th 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 SportsExerc. 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 under different environmental conditions;
- 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:

PE2000 EXERCISE PHYSIOLOGY WINTER 2019 SCHEDULE (Tentative)							
IN CLASS LECTURES				LABORATORY			
Mondays	**TOPIC**	**Wednesdays**	**TOPIC**	**Mon C3**	**Tue B3**	**Fri A3**	**TOPIC**
6-Jan-20	No Classes	8-Jan-20	No Classes	6-Jan-20	7-Jan-20	10-Jan-20	Basic Ergometry
13-Jan-20	Intro to the course (Ch01)	15-Jan-20	Macro and Micronutrients (Ch02	13-Jan-20	14-Jan-20	17-Jan-20	Anaerobic Tests
20-Jan-20	Food and Energy (Ch03)	22-Jan-20	Intro to Energy Transfer (Ch05	20-Jan-20	21-Jan-20	24-Jan-20	**Wingate (Lab Report)**
27-Jan-20	Human Energy Transfer (Ch06	29-Jan-20	Measuring and Evaluating (Ch07	27-Jan-20	28-Jan-20	31-Jan-20	Continous Vs Intermittent
3-Feb-20	Energy Expenditure (Ch08)	5-Feb-20	Respiratory System (Ch09)	3-Feb-20	4-Feb-20	7-Feb-20	**Force-Velocity (Lab Report)**
10-Feb-20	Cardiovascular System (Ch 10	12-Feb-20	Neuromuscular System (Ch11)	10-Feb-20	11-Feb-20	14-Feb-20	Response to Submax PO
17-Feb-20	***Winter Break***	19-Feb-20	***Winter Break***	17-Feb-20	18-Feb-20	21-Feb-20	***Winter Break***
24-Feb-20	Review / Seminar	26-Feb-20	**MIDTERM**	24-Feb-20	25-Feb-20	28-Feb-20	No Labs
2-Mar-20	Exam Review	4-Mar-20	Hormonal Response (Ch12)	2-Mar-20	3-Mar-20	6-Mar-20	Energy Exp and Efficiency
9-Mar-20	Endurance Training (Ch13)	11-Mar-20	Endurance Training (Ch13)	9-Mar-20	10-Mar-20	13-Mar-20	CPET and VTs
16-Mar-20	Resistance Training (Ch14)	18-Mar-20	Resistance Training (Ch14)	16-Mar-20	17-Mar-20	20-Mar-20	**CPET and VTs cont (Lab report)**
23-Mar-20	Ergogenic / Nutr Aids (Ch4)	25-Mar-20	Exer in Diff conditions (Ch15)	23-Mar-20	24-Mar-20	27-Mar-20	**Critical Power (Lab Report)**
30-Mar-20	Exercise and Aging (Ch17)	1-Apr-20	Clincal Aspect of Exer (Ch18)	30-Mar-20	31-Mar-20	3-Apr-20	Review Seminar
6-Apr-20	Body Comp and Exer (Ch16)	8-Apr-20	**LAB EXAM**	6-Apr-20	7-Apr-20	10-Apr-20	No Labs
13-Apr-20	Exam Review	15-Apr-20	Final Review / Seminar	13-Apr-20	14-Apr-20	17-Apr-20	

**Note: Some of these dates may vary to facilitate student learning*

EVALUATIONS:

Lab Reports (4x 5% each)	20%
Lab Exam: April 6th, 2020	25%
Midterm Exam: February 26th, 2020	25%
Final Exam TBA: April 15-27, 2020	30%

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/onlinesearch.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.