



DEPARTMENT OF PHYSICAL EDUCATION AND KINESIOLOGY

COURSE OUTLINE –WINTER 2016

PE2000 (A3): Exercise Physiology – 3 (3-0-2) UT, 75 Hours for 15 Weeks

INSTRUCTOR: Ray Kardas **PHONE:** 780 539-2990
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OFFICE HOURS: As posted or requested
LAB INSTRUCTOR: Andrew Boone **E-MAIL:** adboone@hotmail.com

CLASS TIMES:

Monday & Wednesday, 14:30 – 15:50
Lab Times:
B3: Tuesday 2:30 – 4:20 pm, Studio B3
C3: Monday 12:00 – 1:50 pm, Studio B3

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 responses 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. Kraemer, W.J., Fleck, S.J. and Deschenes. (2016). Exercise Physiology: Integrating Theory and Application: 2nd Ed. Philadelphia: Lippincott, Williams and Wilkins
2. PE2000 Course Pack - Physiology of Exercise Laboratory Manual. University of Alberta. (Provided as part of lab fees)

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 during exercise
- To provide the student with the knowledge and understanding of the physiological adaptations to different forms of exercise training and environmental influences
- To develop skills in basic ergometry and laboratory instrumentation (metabolic cart) for evaluating physiological responses to exercise.

LEARNING OUTCOMES:

- Students who successfully complete this course will be able to:
- Identify various training methods in relation to the three major energy systems and how they apply to exercise physiology
- Review material for PE1015/PE1030 and integrate them into the concept of exercise
- Explain various types of exercise training and the adaptations made
- Name, describe and implement a variety of physiological tests that may be used on humans of various abilities
- Explain and implement basic and advanced ergometry for evaluating physiological responses to exercise
- Explain research and analytical skills used to create a laboratory report
- Analyze research and apply the appropriate concepts to class sessions

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.transferralberta.ca> or, if you do not want to navigate through few links, at <http://alis.alberta.ca/ps/tsp/ta/tbi/onlinerearch.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**

EVALUATIONS:

EXAMINATIONS

Lecture

Midterm Exam February 10 th , 2016	20%
Final Exam TBA	40%

Laboratory

Lab Write-Ups (2 @10% each)	20%	See Schedule for due dates.
Lab Take Home Questions	5%	Due at the start of each lab.
Final LAB Exam	<u>15%</u>	April 6, 10:00 – 11:20 am
	100%	

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A ⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A ⁻	3.7	80 – 84	FIRST CLASS STANDING
B ⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B ⁻	2.7	70 – 72	
C ⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C ⁻	1.7	60 – 62	
D ⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline

GRADING CRITERIA

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

COURSE SCHEDULE/TENTATIVE TIMELINE

Jan. 6, 11	Introduction to course, Part I Ch. 1: Applying Research to Everyday Exercise and Sport Ch. 14: Exercise Testing for Health, Physical Fitness and Predicting Sport Performance
Jan. 15	Ch. 6: Essentials of Bioenergetics and Anaerobic Metabolic Pathways
Jan. 18	Ch. 3: Aerobic (Oxidative) Metabolism
Jan. 20	Begin Part II Ch. 4: Skeletal Muscle System

Jan. 25	Ch. 5: The Nervous System: Special Emphasis on Muscle Spindles/GTO's
Jan. 27, Feb 1	Ch. 6: Cardiovascular System
Feb. 3, 8	Ch. 7: Respiratory System
Feb 15-19	Winter Break
Feb. 10, 22	Ch. 8 Endocrine System
Feb. 24	Mid-Term 20% of final grade
Feb. 29, March 2	Begin Part III Ch. 9: Nutritional Support for Exercise
March 7, 9	Ch. 10: Fluid and Electrolyte Challenges in Exercise
March 14, 16	Ch. 11: Environmental Challenges and Exercise Performance
March 21	Part IV (continued) Ch. 12: Understanding and Improving Body Composition
March 23, 28	Ch. 13: Aerobic and Strength Training Prescription for Health and Performance
March 30, April 4	Ch. 14: Ergogenics in Exercise and Sport
April 6	Final Lab Exam: Written in class (20% of final grade)
April 11	Ch. 15: Training Considerations for Special Populations

LAB TIMELINE:

<u>Week of:</u>	<u>Lab#</u>	<u>Lab Title</u>
Jan. 11-15	1	Intro/Ergometry
Jan. 18-22	2	Energy Expenditure & Efficiency
Jan. 25-29	3	Anaerobic Power & Capacity (Lab write up)
Feb. 1-5	4	Intermittent vs. Continuous
Feb. 8-12	6	Physiological Responses to Submax PO
Feb. 15-19		READING WEEK NO LABS
Feb. 22-26	7	Anaerobic Threshold

Feb. 29-Mar.4	8	Maximal Oxygen Consumption (Lab write-up)
Mar. 7-11	9	Thermoregulation
Mar. 14-18	10	Body Comp/Review
Mar. 21-25		NO LABS
Mar. 28-Apr. 1		NO LABS
Apr. 4-8		Final Lab Exam, Wed. Apr. 6 th in PE 2000 class

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 encouraged to read other chapters in the text such as 4, 13, & 14 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 Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at <http://www.gprc.ab.ca/about/administration/policies/>

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