NORTHWESTERN POLYTECHNIC

DEPARTMENT OF KINESIOLOGY AND HEALTH SCIENCES

COURSE OUTLINE – WINTER 2024

PE2000 (A3): Exercise Physiology – 3 (3-0-2) UT, 75H, 15 weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation, and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land, and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTORS:	Fabio Minozzo	**PHONE:**	7805392058
OFFICE:	K219	**EMAIL:**	fminozzo@nwpolytech.ca

OFFICE HOURS: upon student request

Lectures: Mondays 11:30-12:50 and Fridays 10:00-11:20
Labs: L1 -Thursday 14:30-16:20 and L2 - Tuesdays 14:30-16:20

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.

DELIVERY MODE(S): A variety of methodologies will be employed including lecture, discussion, lab activities, seminars group/ individual work. This course will be mostly delivered **in class** (or in the lab) with some online components. Students are recommended to bring their own laptop or tablet besides their textbook and notebook.

POLICY ON THE RECORDING OF TEACHING ACTIVITIES: Students may not record classroom activities (such as lectures, group activities, 3rd party presentations, etc.) without instructor's consent. This policy is set to protect the privacy and reputation of students, to uphold the copyrights of the instructor and other content creators, and to facilitate free and open discussion of ideas. The classroom is meant to be a psychologically safe environment, where students are free to explore and think through new and controversial ideas without fear of public repercussions. Recording lectures can undermine this goal. If permission to record an activity is granted, the recorded material can only be used for the student's own private use and is not to be posted online or otherwise distributed. Students will be notified in advance by the instructor when someone has been granted permission to record a classroom activity. Students will also be given the option of being excused from actively participating in recorded activities. In the case of student presentations, the recording student must show proof that the presenting student(s) have agreed to be recorded before the instructor will grant permission.

POLICY ON INSTRUCTIONAL RESOURCES AND MATERIALS: Any course resource/material should be properly used: the content created by your instructor is his/her intellectual property and is provided to you based upon your registration for this class; as such, the material is for your private use only. It is not to be distributed, publicly exhibited, or sold without the permission of the instructor. Third party materials (such as assigned readings, videos, et cetera) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law.
**Note: posting instructional personal notes or slides before or after classes is at the discretion of your instructor.*

PREREQUISITE: PE1015

REQUIRED TEXT/RESOURCE MATERIALS:

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

ANXILIARY 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.

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.

COURSE SCHEDULE TENTATIVE TIMELINE:

PE2000 EXERCISE PHYSIOLOGY WINTER 2024 SCHEDULE						
IN CLASS LECTURES				LABORATORY		
Mondays	**TOPIC**	**Fridays**	**TOPIC**	**L1 (Thu)**	**L2 (Tue)**	**TOPIC**
8-Jan-24	Intro to the course	12-Jan-24	Intro to the course	11-Jan-24	9-Jan-24	Intro to Labs
15-Jan-24	Intro to Exercise Physiology (Ch01)	19-Jan-24	Macro and Micronutrients (Ch02)	18-Jan-24	16-Jan-24	Basic Ergometry
22-Jan-24	Food and Energy (Ch03)	26-Jan-24	Intro to Energy Transfer (Ch05)	25-Jan-24	23-Jan-24	Anaerobic Tests
29-Jan-24	Human Energy Transfer (Ch06)	2-Feb-24	Measuring and Evaluating (Ch07)	1-Feb-24	30-Jan-24	**Wingate (Lab Report)**
5-Feb-24	Lecture on how to write a lab report	9-Feb-24	Energy Expenditure (Ch08)	8-Feb-24	6-Feb-24	Intermittent vs Continuous
12-Feb-24	Respiratory System (Ch09)	16-Feb-24	Cardiovascular System (Ch 10)	15-Feb-24	13-Feb-24	Response to Submax PO
19-Feb-24	***Winter Break***	**23-Feb-24**	***Winter Break***	**22-Feb-24**	**20-Feb-24**	***Winter Break***
26-Feb-24	**Review / Seminar**	1-Mar-24	**MIDTERM EXAM**	29-Feb-24	27-Feb-24	**Force-Velocity (Lab Report)**
4-Mar-24	**Review / Seminar**	8-Mar-24	**LAB EXAM I**	8-Mar-24	6-Mar-24	Energy Exp and Efficiency
11-Mar-24	Neuromuscular System (Ch11)	15-Mar-24	Hormonal Response (Ch12)	15-Mar-24	13-Mar-24	CPET and Threshold
18-Mar-24	Endurance Training (Ch13)	22-Mar-24	Endurance Training (Ch13)	22-Mar-24	20-Mar-24	**CPET and Threshold (Lab report)**
25-Mar-24	Resistance Training (Ch14)	29-Mar-24	Easter (no Classes)	29-Mar-24	27-Mar-24	Critcal Power
1-Apr-24	Exercise and Aging (Ch17)	5-Apr-24	Exercise in Diff conditions (Ch15)	5-Apr-24	3-Apr-24	Lab content review
8-Apr-24	**Review / Seminar**	12-Apr-24	**LAB EXAM II**	12-Apr-24	10-Apr-24	No Labs
15-Apr-24	**General Review**	19-Apr-24	**EXAM PERIOD**	19-Apr-24	17-Apr-24	**EXAM PERIOD**
22-Apr-24	**EXAM PERIOD**	26-Apr-24	**EXAM PERIOD**	26-Apr-24	24-Apr-24	**EXAM PERIOD**

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

EVALUATION:

Lab Participation	5%	45%
Lab Reports	10%	
Lab Exam I	15%	
Lab Exam II	15%	
Midterm Exam	25%	55%
Final Exam	30%	
	100%	**100%**

**Note: 45% of your final grade will be based only on the lab component (attendance is mandatory). The remaining 55% will be based on the entire content, in which labs are also included.*

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

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	95-100		C+	2.3	67-69
A	4.0	85-94		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:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.ca.

** 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:

Refer to the Polytechnic Policy on Student Rights and Responsibilities on the NWP website.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at https://www.nwpolytech.ca/about/administration/policies/index.html.

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