

DEPARTMENT OF KINESIOLOGY AND HEALTH SCIENCES

COURSE OUTLINE – FALL 2025

PE2000 (A2/L1/L2): 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

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OFFICE HOURS: upon student request

Lectures: Tuesdays and Thursdays from 14:30 to 15:50

Labs: Monday L1 - 8:00-9:50; L2- 10:00-11:50

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 USE OF ARTIFICIAL INTELLIGENCE (AI): The use of Artificial Intelligence (AI), including Large Language Models (LLMs) and other related technologies, has grown significantly in recent years and is now part of everyday reality. The intent of this policy is not to prohibit their use entirely, but to ensure it is applied appropriately and transparently in accordance with established course guidelines. This policy applies only to this course; other instructors may have different policies, and students should not assume these rules apply elsewhere. When no specific rules are established for a given task, the following defaults will apply: **i. For Assignments, Reports, and Presentations** –AI tools may be used to assist in drafting but may not be used to generate the complete work from a single prompt; AI may be used to refine language, and all prompts must be disclosed. For greater transparency, students may be asked to submit their prompt history and AI outputs as an appendix or additional file. If references are required, students must read and verify them to ensure accuracy and existence; any information generated by AI must be independently verified using credible sources; and students must fully understand the material they submit. The instructor may interview students to assess their understanding, and a demonstrated lack of knowledge will be treated as probable academic misconduct. **ii. For Tests, Exams, and Quizzes** – the use of AI tools, search engines, communication devices, or any feature enabling communication with external entities is strictly prohibited. Once specific rules are set for a task, those rules override these defaults, which will no longer apply. Any breach of the applicable rules will be addressed under the institution's academic misconduct procedures.

**Note: AI-generated content may contain errors or biases. Students are responsible for verifying information and may consult their instructor for guidance on its accuracy, appropriateness, or permitted use.*

POLICY ON THE RECORDING OF TEACHING ACTIVITIES: Students may not record classroom activities (such as lectures, group activities, 3rd party presentations, etc.) without the 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.*

POLICY ON ATTENDANCE: Attendance in this course is MANDATORY. Students are strongly recommended to attend all classes and labs; however, they must attend at least 75% of the lectures and labs. This translates to 21 lectures and 9 labs. **If a student misses more than 25% of the course (7 lectures or 3 labs), he or she will be debarred from the Final exam, see Final Examination Policy.** In exceptional circumstances, the instructor may allow a student to miss more classes than the minimum, but these issues will be addressed case-by-case.

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 Kluwer.

ANCILLARY 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 (2022): Wolters Kluwer/Lippincott Williams & Wilkins Health, 11th 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.

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:

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

PE2000 EXERCISE PHYSIOLOGY FALL 2025 SCHEDULE					
IN CLASS LECTURES				LABORATORY	
Tuesdays	TOPIC	Thursdays	TOPIC	Mondays	TOPIC
2-Sep-25	No Classes	4-Sep-25	Intro to the course	1-Sep-25	No Labs
9-Sep-25	Intro to Exercise Physiology (Ch01)	11-Sep-25	Macro and Micronutrients (Ch02)	8-Sep-25	Basic Ergometry
16-Sep-25	Food and Energy (Ch03)	18-Sep-25	Intro to Energy Transfer (Ch05)	15-Sep-25	Anaerobic Tests
23-Sep-25	Human Energy Transfer (Ch06)	25-Sep-25	Measuring and Evaluating (Ch07)	22-Sep-25	Wingate (Lab Report)
30-Sep-25	<i>Holiday</i>	2-Oct-25	Energy Expenditure (Ch08)	29-Sep-25	<i>Working on Wingate</i>
7-Oct-25	Respiratory System (Ch09)	9-Oct-25	Cardiovascular System (Ch 10)	6-Oct-25	<i>Working on Wingate</i>
14-Oct-25	Review / Seminar	16-Oct-25	MIDTERM EXAM	13-Oct-25	<i>Holiday</i>
21-Oct-25	Review / Seminar	23-Oct-25	LAB EXAM I	20-Oct-25	Force-Velocity (Lab Report)
28-Oct-25	Neuromuscular System (Ch11)	30-Oct-25	Hormonal Response (Ch12)	27-Oct-25	<i>Working on Force Velocity</i>
4-Nov-25	Endurance Training (Ch13)	6-Nov-25	Endurance Training (Ch13)	3-Nov-25	CPET (Lab report) p.1
11-Nov-25	Fall Break	13-Nov-25	Fall Break	10-Nov-25	Fall Break
18-Nov-25	Resistance Training (Ch14)	20-Nov-25	Resistance Training (Ch14)	17-Nov-25	CPET (Lab report) p.2
25-Nov-25	Exercise and Aging (Ch17)	27-Nov-25	Exercise in Diff conditions (Ch15)	24-Nov-25	Critical Power
2-Dec-25	Review / Seminar	4-Dec-25	LAB EXAM II	1-Dec-25	TBA
9-Dec-25	General Review	11-Dec-25	General Review	8-Dec-25	TBA
16-Dec-25	EXAM PERIOD	18-Dec-25	EXAM PERIOD	15-Dec-25	EXAM PERIOD

EVALUATIONS:

Lab Reports	15%	45%
Lab Exam I	15%	
Lab Exam II	15%	
Midterm Exam	20%	55%
Final Exam	35%	
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.*

INFORMED CONSENT FOR PARTICIPATION IN PHYSICAL ACTIVITY: This course includes physical activity, exercise, and/or fitness assessments as part of its learning and evaluation components. By enrolling in this course, you acknowledge and accept the following:

- You may be asked to participate in physical activity sessions, which include aerobics and/or musculoskeletal training.
- While the risk is minimal, physical activity may involve potential adverse effects such as episodes of transient lightheadedness, loss of consciousness, abnormal heart rate and/or blood pressure, chest discomfort, leg cramps, nausea). You voluntarily assume these risks.
- You are responsible for promptly informing your instructor(s) of any pain, discomfort, fatigue, or other symptoms experienced during or within 48 hours of the course session.
- You must disclose any health conditions that could be affected by physical activity. The instructor(s) will make reasonable modifications, where appropriate, and may request documentation from a qualified health professional.