

Spring 2022

Meeting days: Mon/Wed/Fri	Instructor title and name: Dr. Heidi Lynch, PhD, RDN
Meeting times: 8:30-9:25	Office phone: 619-849-3306
Meeting location: KIN 2	E-mail: hlynch@pointloma.edu
Final Exam: Take home final due by Friday, May 6 th 11:59 pm	Office location and hours: Kinesiology office 7 Mondays & Wednesdays 10:00-11:00 am or by appointment

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

COURSE DESCRIPTION

A study of the effects of vigorous physical activity upon the systems of the body; development of an understanding of factors which constitute training of the human body for high levels of health and physical performance.

COURSE LEARNING OUTCOMES

After completing this course, you will be able to:

1. Demonstrate a working knowledge of the structure, function, and physiological concepts surrounding exercising skeletal muscle.
2. Demonstrate a working knowledge of the essentials of human metabolism and bioenergetics with a special focus on how they relate to physical activity.
3. Demonstrate the skills necessary to measure and compute energy expenditure.
4. Demonstrate a working knowledge of physical fatigue.
5. Demonstrate a working knowledge of the physiology of the cardiovascular system with special emphasis on how it works under conditions of vigorous physical activity.
6. Demonstrate a working knowledge of the physiology of the respiratory system with special emphasis on how it works under conditions of vigorous physical activity.
7. Demonstrate a working knowledge of the muscular, cardiovascular, and respiratory acute and chronic responses to physical activity.

8. Demonstrate a working knowledge of the general principles of endurance and resistance exercise training.
9. Describe the adaptations to resistance and endurance exercise training.
10. Manipulate a resistance training program to invoke different physiological responses.
11. Demonstrate a working knowledge of the effects of exercise in heat and altitude extremes.
12. Demonstrate a working knowledge of the immense health benefits of physical activity.
13. Describe the pathogenesis of type 2 diabetes and cardiovascular disease.
14. Describe the physiological effects of exercise on the pathogenesis of cardiovascular disease and type 2 diabetes.

Core Competencies Assessed in this course:

1. Quantitative Literacy is assessed with the "VO2max lab worksheet" (see assignments below).
2. Critical Thinking is assessed with the "Final Concept Map Paper" (see assignments below).
3. Information Literacy is assessed with the "Final Concept Map Paper" (see assignments below).
4. Writing Communication is assessed with the "Final Concept Map Paper" (see assignments below).

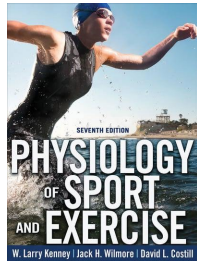
COURSE SCHEDULE AND ASSIGNMENTS

Week	DATE PRESENTED	CLASS CONTENT OR ASSIGNMENT	ASSIGNMENT DUE DATE	REQUIRED READING
1	Tues 1/11	Introduction/Skeletal Muscle		Chapter 1
	Wed 1/12	Skeletal muscle	Quiz 1	Chapter 1
	Fri 1/14	Nervous system		Chapter 3
2	Mon 1/17	NO CLASS: MLK DAY!		
	Wed 1/19	Metabolism	Quiz 2	Chapter 2
	Fri 1/21	Metabolism		Chapter 2
3	Mon 1/24	TBL: Endocrine system	iRAT/tRAT #1	Chapter 3
	Wed 1/26	Cardiovascular system	Quiz 3	Chapter 6
	Fri 1/28	Cardiovascular & Respiratory systems		Chapters 6 & 7
4	Mon 1/31	Respiratory system	Quiz 4 Concept Map #1	Chapter 7
	Wed 2/2	TBL: Gallery Walk Review #1		Chapter 4
	Fri 2/4	Exam 1		
5	Mon 2/7	Energy expenditure (EE)/fatigue	Quiz 5	Chapter 5
	Wed 2/9	EE/EPOC lab		Chapter 5
	Fri 2/11	EE/fatigue		Chapter 5
6	Mon 2/14	Cardiopulmonary responses to exercise	Quiz 6	Chapter 8
	Wed 2/16	Cardiopulmonary responses to exercise	Lab report #1	Chapter 8

	Fri 2/18	TBL: Cardiopulmonary responses to exercise	iRAT/tRAT #2	Chapter 8
7	Mon 2/21	TBL activity 1: Cardiopulmonary response to exercise		Chapter 8
	Wed 2/23	VO2max test lab		Chapter 8
	Fri 2/25	TBL activity 2: Cardiopulmonary response to exercise		Chapter 8
8	Mon 2/28	Cardiovascular disease (CVD)	Quiz 7 Concept Map #2	Dr. Gaesser article, Chapter 21
	Wed 3/2	CVD & Type 2 Diabetes (T2D)	Lab report #2	Chapter 21
	Fri 3/4	CVD & T2D		Chapter 21
	Mon 3/7-Fri 3/11	SPRING BREAK: NO CLASSES		
9	Mon 3/14	TBL: Gallery Walk Review #2		
	Wed 3/16	Exam 2		
	Fri 3/18	Training principles		Chapters 9 & 10
10	Mon 3/21	Adaptations to resistance training	Quiz 8	Chapter 10
	Wed 3/23	Adaptations to resistance training		Chapter 10
	Fri 3/25	Adaptations to resistance training		Chapter 10
11	Mon 3/28	Adaptations to endurance training	Quiz 9	Chapter 11
	Wed 3/30	Adaptations to endurance training		Chapter 11
	Fri 4/1	Adaptations to endurance training	Final concept map DRAFT	Chapter 11
12	Mon 4/4	Exercise in the heat	Quiz 10	Chapter 12
	Wed 4/6	TBL: heat & altitude	iRAT/tRAT #3	Chapter 12
	Fri 4/8	TBL Activity 3: altitude		Chapter 12
13	Mon 4/11	TBL Activity 4: heat		Chapter 13
	Wed 4/13	TBL: Gallery Walk Review #3		
	Fri 4/15	NO CLASS: EASTER BREAK		
14	Mon 4/18	NO CLASS: EASTER BREAK		
	Wed 4/20	Exam #3		
	Fri 4/22	Obesity	Quiz 11	Chapter 22
15	Mon 4/25	Obesity	Final concept map & paper	Chapter 22
	Wed 4/27	Obesity		
	Fri 4/29	Catch up, review for final exam	TBL peer eval due by 11:59 via survey link sent through email	
16		Take home final exam	Due by Friday, May 6 th 11:59 pm	

REQUIRED TEXT

Textbook: Kenney WL, Wilmore JH, and Costill DL. Physiology of Sport and Exercise. Human Kinetics Publishing Co., Champaign, IL, **7th Edition**, 2015. ISBN: 9781492572299



ASSESSMENT AND GRADING

Grade scale:

A=93-100	C=73-76
A-=92-90	C-=70-72
B+=87-89	D+=67-69
B=83-86	D=63-66
B-=80-82	D-=60-62
C+=77-79	F=0-59

COURSE POINTS AND GRADING

Item	Points	Total Points
1. Quizzes	11 @ 10 points each	100 (drop lowest)
2. Exams	3 @ 75 points each	225
3. Concept Maps	2 @ 25 points each	50
1&2		
4. iRATs/tRATs	3 @ 20 points each	60
5. Gallery Walks	3 @ 10 points each	30
6. TBL Peer Eval	1 @ 20 points	20
7. TBL Activities	4 @ 5 points	20
8. Lab Reports	2 @ 25 points	50
9. Final Concept Map	1 @ 100 points	100
10. Final Exam	1 @ 80 Points	80
11. Honorlock Practice	1 @ 3 points	3

LEARNING OPPORTUNITIES AND ASSIGNMENTS

1. **Quizzes:** Quizzes will be administered via Canvas. The quiz will be on the required reading for the day. Quizzes will be available on Canvas before the quiz. Students are to complete the quiz at home while reading and record their answers on a sheet of paper or document they can access on their computer. Students will have the first 5 minutes of class to “turn in” their quizzes via Canvas on the day of the quiz (there will not be sufficient time to read and think through the answers at the start of class; there will just be enough time to enter the answers you already selected). There will be 11 quizzes given over the course of the semester and the lowest quiz score will be dropped. **If you are late you get a 0 on the quiz.**
2. **Team Based Learning (TBL):** TBL is an innovative teaching method that has been shown in studies to improve learning. You will all be placed into teams at the beginning of the semester. We will have 2 TBL days for which you will study on your own before class, take a short quiz by yourself (iRAT) on that material when you arrive to class, and then take the same quiz with your team (tRAT). We will follow up for the rest of the class and the following class session with some exercises based on the material you learned. The gallery walk days will also be part of the team based learning.
3. **Concept Maps 1 & 2:** Information from class notes and the textbook will be used to create flow diagrams explaining the formation of ATP (#1) and the control of heart rate during exercise (#2). Students will use the free concept map website bubbl.us. For each account made on bubbl.us you can make 3 mind maps. The maps must be exported as an image and uploaded to Canvas before the due date and time.
4. **Final Concept Map:** This will be a more detailed concept map explaining in detail the effects of prolonged (i.e. ≥ 3 months) endurance exercise training on one of the following: atherosclerosis or type 2 diabetes. The map will be accompanied with a research paper. See assignment instructions for more details.
5. **Lab Reports:** There will be a short lab report due 1 week after each laboratory experience in the class. Each lab will consist of a volunteer from class participating in the exercise testing then each student individually completing the lab report.
6. **Lecture Exams:** The exams will be designed to test the students’ comprehension of the material presented via lectures and independent studying of the textbook. Questions will be all short answer format.
7. **Final Exam:** The final exam will be worth 80 points. The cumulative portion will be in a “Major Concepts” format. Information from the entire semester will be tested. The Major Concepts format means that student will only be tested on the large and most important concepts of the course.

INCOMPLETES AND LATE ASSIGNMENTS

Assignments and quizzes not turned in by the **day and time** they are due will immediately lose 50% (this includes assignments turned in minutes after the 11:59pm deadline). Technology difficulties are NOT a valid excuse for turning in work late. Please plan ahead and do not wait until the last minute to turn in your work!

QUIZZES

Quizzes will be completed in class on Canvas during the first minutes of class; hence, punctuality is essential to avoid missing the quiz and its points. The quiz questions and the material covered are posted on Canvas. Please be sure to complete the reading and the quiz *before* class so that you may quickly enter your quiz answers on Canvas when it becomes available at the start of class.

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination **on its scheduled day**. The final examination schedule is posted on the [Class Schedules](#) site.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See [Academic Policies](#) for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the

Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See [Academic Policies](#) in the Undergraduate Academic Catalog.