

	<b>Department of Kinesiology</b>  <b>KIN 3040L Physiology of Exercise Lab</b>  <b>1 Unit</b>
	Spring 2023

<b>Meeting days:</b> Mondays	<b>Instructor title and name:</b> Dr. Heidi Lynch, PhD, RDN
<b>Meeting times:</b> 1:30-3:20 pm	<b>Phone:</b> 619-806-0822
<b>Meeting location:</b> Rohr Science building room 195	<b>Email:</b> <a href="mailto:hlynch@pointloma.edu">hlynch@pointloma.edu</a>
<b>Final Exam:</b> 4/24/2023 (during normal lab time the week before finals; no lab the week of final exams)	<b>Office location and hours:</b> Mondays & Wednesdays 9:30 am – 12:00 pm or by appointment  Location: main Kinesiology office area (space between K1 & K2 in building between gym & tennis courts)

### 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.

Specifically, this course will provide students the opportunity to learn how to use equipment in the laboratory, such as the metabolic cart; to collect, analyze, and interpret data from submaximal and maximal exercise tests; and to become proficient using Excel to analyze and visually display data.

### COURSE LEARNING OUTCOMES

1. Demonstrate an understanding of muscle physiology by testing the basic principles (and analyzing the results) including active and passive length-tension relationships and types of contractions (eccentric, concentric, isometric).
2. Measure and interpret the results of the following tests: resting energy expenditure, submaximal exercise test, and maximal exercise test.
3. Measure and interpret the results of both anaerobic power and capacity testing.
4. Measure and interpret the results of an anaerobic/lactate threshold test.

5. Apply the results of maximal oxygen uptake and anaerobic threshold testing to the prescription of continuous vigorous exercise as well as high-intensity interval training.
6. Be able to convert between various units of measure commonly used in exercise physiology.
7. Demonstrate mastery of graphing data in Microsoft Excel.

## REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

Materials posted on Canvas

## ASSESSMENT AND GRADING

### Educational Opportunities

*Hands on Laboratory Experiences:* Each week in lab you will either be exercising in some way or conducting physiological measurements on a lab partner while he/she is exercising. This will be your primary means of learning in the course. Take advantage of the wonderful equipment available to you and the laboratory experiences designed by your instructor.

*Lab Worksheets and Integration Questions:* After completion of the laboratory activities, you will have some questions to answer that will guide you in analyzing and interpreting the data that you collected during lab. The questions are designed to invite you to apply your individual data collected in the lab and the interpretations that you arrived at to a broader scale that may be applicable to your future careers in an exercise and sports science or allied health field. **Lab worksheets are due on Canvas by the specified day/time (usually one week after completing the lab, before the next class session).**

*Lab Practical:* There will be one lab practical in this course. Students will sign up for individual time slots and be asked to conduct laboratory measures that were learned in lab. Students will be graded on their ability to autonomously conduct the lab procedures as taught by the lab instructor.

Grades will be based on the following percentages:

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

**Attendance:** Students are required to attend class every class session unless they receive permission from the professor in advance, or due to extenuating circumstances. Since class only meets once per week, missing class will put you behind severely. Please make all efforts to come to every lab. If you miss a lab and are therefore unable to complete the worksheet, you will receive a 0 on that lab.

## STATE AUTHORIZATION

State authorization is a formal determination by a state that Point Loma Nazarene University is approved to conduct activities regulated by that state. In certain states outside California, Point Loma Nazarene University is not authorized to enroll online (distance education) students. If a student moves to another state after admission to the program and/or enrollment in an online

course, continuation within the program and/or course will depend on whether Point Loma Nazarene University is authorized to offer distance education courses in that state. It is the student's responsibility to notify the institution of any change in his or her physical location. Refer to the map on [State Authorization](#) to view which states allow online (distance education) outside of California.

## **INCOMPLETES AND LATE ASSIGNMENTS**

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be accepted in extremely unusual circumstances. Late assignments incur a 50% deduction in earned grade on that assignment.

**Corrected work:** You will have **one chance** to correct a lab report potentially to still receive full credit. Assignments turned in late will *not* be eligible for this correction opportunity.

## **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**

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities. Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center ([EAC@pointloma.edu](mailto:EAC@pointloma.edu) or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will issue an academic accommodation plan ("AP") to all faculty who teach courses in which the student is enrolled each semester.

PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course and/or if they do not wish to utilize some or all of the elements of their AP in that course.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

## **PLNU ATTENDANCE AND PARTICIPATION POLICY**

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of 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.

## **SPIRITUAL CARE**

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If students have questions, a desire to meet with the chaplain or have prayer requests you can contact the [Office of Spiritual Development](#).

## **TENTATIVE COURSE SCHEDULE**

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Assignment due</b>
1	Tues 1/10	NO CLASS	
2	Mon 1/16	NO CLASS: MLK day	
3	Mon 1/23	Lab 1: Instrumentation, calculations, and terminology	
4	Mon 1/30	Lab 2: Muscle length tension relationship	Lab 1
5	Mon 2/6	Lab 3: Wingate test	Lab 2
6	Mon 2/13	Lab 4: Exercise energy expenditure & EPOC	Lab 3
7	Mon 2/20	Lab 5: Maximal oxygen	Lab 4

		uptake	
8	Mon 2/27	Lab 5: Maximal oxygen uptake, continued	
SPRING BREAK			
9	Mon 3/13	Lab 6: 3-Minute All-Out & Critical Power Tests	Lab 5
10	Mon 3/20	Lab 7: Lactate Threshold & Ventilatory Threshold	Lab 6
11	Mon 3/27	Lab 8: Exercise Prescription Based on Exercise Tests	Lab 7
12	Mon 4/3	Lab 9: BP responses to body position & exercise	Lab 8
13	Mon 4/10	NO LAB: Happy Easter	
14	Mon 4/17	Review for lab practical	Lab 9
15	Mon 4/24	Lab practical (in lieu of final exam during finals week)	

Final exams: week of May 1-5 (we will not meet this week)