

# POINT <sup>19</sup> <sup>02</sup> LOMA

## NAZARENE UNIVERSITY

**KIN 6005**

**Research Methods**

**Department of Kinesiology**

**Number of Units: 3**

**Fall 2024**

<b>Meeting days:</b> Thursday	<b>Instructor:</b> Arnel Aguinaldo, PhD, ATC ("Dr. A") <b>Co-Instructor:</b> Kristen Snyman, PhD, CSCS
<b>Meeting times:</b> 6:30 PM - 8:30 PM	<b>Phone:</b> 619-849-3007
<b>Meeting location:</b> OT Classroom	<b>Email:</b> <a href="mailto:aaguinal@pointloma.edu">aaguinal@pointloma.edu</a>
<b>Final Exam:</b> Take-Home Final Exam (Due 12/19/2024)	<a href="#">Virtual Office Hours</a>

### **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**

This course provides an introduction to analyzing data and designing research experiments in exercise and sport science. Topics will include: 1) selected techniques and designs used in research, with special

emphasis given to planning, conducting, and reporting of research; and 2) applied statistical analysis and interpretation of data from the field of exercise and sport science.

### **COURSE AIM**

This course will provide you with basic knowledge of descriptive and inferential statistics prior to enrolling in KIN 610: Evidence Based Practice and Decision Making in Kinesiology. Course meetings will consist of live meetings, online modules, and laboratory sessions for which you will collect, analyze, and interpret data as well as submit a scientific report on the results. You will also be required to conduct a pilot research project and present the findings in an oral format as part of a research proposal process. Specific attention will be given to Master's thesis or capstone project research and writing as you begin to identify and write your thesis/project.

**Note:** *KIN 6005, 6010 and 6050 are meant to be taken in sequence. KIN 6005 emphasizes basic theory and understanding of research methodology and statistical analyses; KIN 6010 integrates the application of evidence with clinical decision making; and KIN 6050 provides the opportunity for additional insight and understanding through seminar-style discussion, directed readings (KIN 6060), and practical experience related to Exercise Science.*

### **INSTITUTIONAL LEARNING OUTCOMES (ILO)**

- 1. Learning, Informed by our Faith in Christ**  
Students will acquire knowledge of human cultures and the physical and natural world while developing skills and habits of the mind that foster lifelong learning.
- 2. Growing, In a Christ-Centered Faith Community**  
Students will develop a deeper and more informed understanding of others as they negotiate complex professional, environmental and social contexts.
- 3. Serving, In a Context of Christian Faith**  
Students will serve locally and/or globally in vocational and social settings.

### **PROGRAM LEARNING OUTCOMES (PLO)**

The Point Loma Nazarene University MS-KIN graduate will be able to:

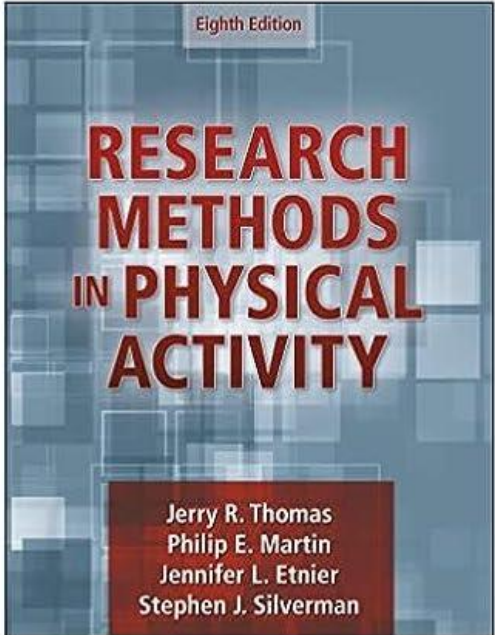
1. Appraise current research data in Kinesiology and integrate it into professional practice to solve relevant problems and make effective decisions .
2. Work independently and with a team to persuasively communicate essential information in their discipline.
3. Demonstrate appropriate breadth of knowledge of the background and principle research in their specialization in order to conduct an independent research project.
4. Serve various populations, integrating compassionate care and the Christian faith with their professional practice.
5. Pursue an active and growing involvement in their discipline by achieving advanced certification and/or membership in a related professional organization.

## COURSE LEARNING OUTCOMES (CLO)







At the end of this course, students should be able to:

1. Explain the value and importance of developing research ideas, conducting research and employing the scientific method within Kinesiology to solve relevant problems.
2. Explain the general principles of research design for experimental and non-experimental research, including literature review, sampling procedures, selection of subjects, ethical treatment of subjects, data collection, and IRB standards.
3. Understand basic measurement constructs such as validity, reliability, scales of measurement, field tests, and laboratory tests
4. Employ statistical analysis for the purpose of exploratory data analysis and hypothesis testing, including t-tests, ANOVAs with post hoc tests, factorial ANOVAs, correlation and regression, power analysis, and selected clinical measures of association.
5. Utilize procedures in R and interpret output for all statistical procedures.
6. Understand and apply qualitative analysis designs in kinesiology research.
7. Develop and present a thesis or capstone project proposal according to committee guidelines and including appropriate formatting (i.e., either journal manuscript or thesis as approved by academic advisor).

## REQUIRED RESOURCES

	<p>Thomas, J.R., Martin, P., Eitner, J.L., &amp; Silverman. S. (2022). <i>Research Methods in Physical Activity</i> (8th ed.). Champaign, IL: Human Kinetics. <a href="#">Purchase eBook here.</a></p>
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We will be using JASP and R for all statistical analyses that will be performed in this course (beginning with Module 5). You can use any of these statistical analysis tools of your choice depending on your comfort and/or coding skill level:

 <b>JASP</b>	<ul style="list-style-type: none"><li>• <b>JASP (Jeffery's Amazing Statistics Program)</b> JASP is an open-source (free) statistical analysis program developed in R by the University of Amsterdam. It offers classical, parametric analyses as well as a few advanced analyses in a intuitive user interface. <a href="#">Download JASP here</a></li></ul>	
	<ul style="list-style-type: none"><li>• <b>Posit Cloud</b> Posit Cloud (formerly RStudio Cloud) lets you access Posit's powerful set of data science tools right in your browser – no installation or complex configuration required. <a href="#">Set up a student account here</a> (\$5/month)</li></ul>	
	<ul style="list-style-type: none"><li>• <b>RStudio</b> RStudio is a set of integrated tools designed to help you be more productive with R. Download <a href="#">RStudio Desktop for Windows or Mac here</a> (not recommended if you are using a Chromebook)</li></ul>	

This course also utilizes the following online tools (free of charge for students) to facilitate student engagement and enhance your learning experience. Canvas Studio will be used for in-video quizzes and interactive video lectures/tutorials

*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. All supplemental materials posted on this course site (including articles, book excerpts, or other documents) are provided for your personal academic use. These materials may be protected by copyright law and should not be duplicated or distributed without permission of the copyright owner.*

### CREDIT HOUR INFORMATION

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 3 unit class delivered over 15 weeks. Specific details about how the class meets the credit hour requirement can be provided upon request. (Based on 37.5 hours of student engagement per credit hour.)

Category	Time Expectation in Hours
Online Participation in Discussions, Groups, etc.	20
Reading Assignments	25
Written Assignments	20
Other Assignments & Learning Activities	24
Quizzes, Surveys	24
<b>Total Hours</b>	<b>113</b>

### ASSESSMENT AND GRADING

Course Requirements: Assessment of Course Learning Outcomes

1. **Participation (12%):** Assesses Course Learning Outcomes #1, #2, #4, #6

We have supplemented the course text and lecture materials with current evidence-based medical literature. It is expected that course material will be read **beforehand** so that informed and lively discussion may be the primary focus of live class meetings and online discussions. After certain readings, you will respond to questions or prompts on the Live Session Agenda or

Discussion Board on Canvas the Thursday of the module in which the discussion is assigned followed by at least two replies to your peers by Sunday. At other times, you will be asked to summarize the key points of outside readings by outlining the major points of the article prior to class. Additionally, you are expected to participate in the Meet & Greet discussion in Week 1 (worth 5 points).

2. ***Syllabus and In-video quizzes (10%): Assesses Course Learning Outcomes #2-4***

The first quiz of the course is a simple syllabus quiz. In order to assess your preparation in course modules, you will complete in-video quizzes created in Canvas Studio to gauge your preparation for discussions. These will also allow the professor to ascertain “sticking points” for students so that class time can be spent in clarifying key concepts.

3. ***Protecting Human Research Participants Certification (2%): Assesses Course Learning Outcome #2***

All investigators engaging in clinical research where human participants are involved must undergo human subjects research training. This training, administered by the Collaborative Institutional Training Initiative (CITI), covers the ethical issues involving human participants in research. You will need to submit your certificate of completion by week 4, which is worth 10 points. You cannot participate in any of the course's assignments involving data collection and analysis (described in 4-6 below) without this certificate.

4. ***Assignments (8%): Assesses Course Learning Outcomes #3, #4, and #5***

Utilizing JASP and/or Posit Cloud (RStudio) statistical software, you will complete four statistical analyses. All output write ups need to be completed in APA format and submitted via Canvas before class on the due date (see course schedule).

5. ***Proposal presentation (20%): Assesses Course Learning Outcome #5***

During the last week of classes, you will be expected to present your thesis/capstone project topic in a formal proposal environment. This session is open to all faculty and your classmates. Your grade for this presentation will be based on the quality of your presentation and mastery of the material, your ability to respond to content questions from the audience, and your overall professionalism.

6. ***Proposal documents (20%): Assesses Course Learning Outcome #7***

The culmination of your semester's work will be a completed proposal document to be submitted via Canvas. This document will be graded based on quality of content, the degree to which you have addressed all the major aspects of your thesis/project topic, and your ability to meet department guidelines for completed thesis/capstone project. Your proposal document should include the following items and will be due in parts at various dates throughout the semester:

- Research Question(s): You will identify your question of interest for the Proposal Project.
- Literature Review
- Proposed Methods and Data Analysis (student must meet with their advisor prior to submitting this document)

- Rough Draft of Project Proposal with Introduction
  - Final Project Proposal (written)
7. **Mid-Term Examination (10%):** *Assesses Course Learning Outcomes #1-3*  
 A unit examination will be administered online on Canvas to formatively measure your mastery of key aspects of the course (i.e., experimental design and statistical analysis using RStudio) after Module 8 (see calendar for exact date).
7. **Final Exam (18%):** *Assesses Course Learning Outcomes #1-4, #6*  
 The final exam will be given at the end of the semester and will be summative over the course content covered in class with emphasis on material covered after the mid-term. This exam will be distributed via Canvas one week before the scheduled exam date to allow you adequate time to review the material and prepare your answers. You are free to work in groups or ask for help from the instructor. **However, the final written answers should be in your own words!**

### Grading

Course Assignments	Percent
Participation (Live Meetings and Discussions)	12
Syllabus and In-Video Quizzes	10
Assignments	10
• Statistical Assignments	8
• Human Subjects Protection Certification	2
Exams	28
• Mid-Term Exam	10
• Final Exam	18
Proposal	40
• Presentation	20
• Documents	20
<b>Total: 100</b>	

**NOTE:** *It is your responsibility to maintain your class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), you have the responsibility to first contact the professor.*

*Then if no accommodations can be made, you are responsible to follow through (provided the drop date meets the stated calendar deadline established by the university).*

### **Grade Scale**

<b>PERCENT</b>	<b>GRADE</b>	<b>POINTS</b>	<b>GRADE</b>
93-100	A	73-76	C
90-92	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	0-59	F

### **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 assigned in extremely unusual circumstances.

### **GRADE GRUBBING AND EXTRA CREDIT**

Your final grade at the end of the semester is what you earned and is non-negotiable. Any requests for "rounding up" grades will be ignored. However, I certainly will fix any clerical errors on my part that may have negatively impacted your grade. In addition, you will have opportunities to earn up to 5% above your total grade in extra credit over the course of the semester. Your extra credit contributions will be reflected in your final grade after the last day of the semester.

### **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.

### **ARTIFICIAL INTELLIGENCE (AI) POLICY**

You are allowed to use Artificial Intelligence (AI) tools (e.g. ChatGPT, iA Writer, Marmot, Botowski) to aid in coding and to generate ideas, but you are not allowed to use AI tools to generate content (text, video, audio, images) that will end up in any work submitted to be graded for this course. If you have any doubts about using AI, please gain permission from the instructor.

### **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**

#### **Hybrid Format**

At Point Loma Nazarene University, attendance is required at all scheduled classes. Adult Degree Completion courses are taught in the hybrid format, which means some class meetings will be face-to-face and some will be online.

Attendance in the face-to-face classes is to be for the entire time of the class. Arriving late or leaving early will be considered a partial absence. A day of attendance in an online class is determined as contributing a substantive note, assignment, discussion, or submission that adds value to the course as determined by the instructor. Three days of attendance are required each week. (It may be any three days during the week.)

### **Face-to-face Portion of the Hybrid course**

In blended or hybrid courses, if a student misses one face-to-face class then the faculty member will send an email to the student and the Director of Student Success warning of attendance jeopardy. There are no exceptions to this policy.

If a student misses two face-to-face classes, the faculty member or Vice Provost for Academic Administration (VPAA) will initiate the student's de-enrollment from the course without further advanced notice to the student. If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of "F" and there will be no refund of tuition for that course.

### **Online Portion of the Hybrid Course**

If a student misses two online classes (fails to contribute to a discussion board) during the course, then the faculty member will send an email to the student and the Director of Student Success warning of attendance jeopardy. There are no exceptions to this policy.

If a student misses three online classes (fails to contribute to a discussion board by the due date) during the course, then the faculty member or Vice Provost for Academic Administration (VPAA) will initiate the student's de-enrollment from the course without further advanced notice to the student. If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of "F" and there will be no refund of tuition for that course.

1 missed F2F class = warning

2 missed F2F classes = de-enrollment

2 missed online classes = warning

3 missed online classes = de-enrollment

### **Online Format**

Students taking online courses are expected to attend each week of the course. Attendance is defined as participating in an academic activity within the online classroom which includes posting in a graded activity in the course. (Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.)

Students who do not attend at least once in any 3 consecutive days will be issued an attendance warning. Students who do not attend at least once in any 7 consecutive days will be dropped from the course retroactive to the last date of recorded attendance.

### **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](#)

## **DIVERSITY AND INCLUSION STATEMENT**

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. It is my intent that students from all diverse backgrounds and perspectives be well-served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that the students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diversity: disability, age, socioeconomic status, ethnicity, race, nationality, religion, gender, sex, sexual orientation, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally, or for other students or student groups. To help accomplish this:

- If you have a name and/or set of pronouns that differ from those that appear in your official PLNU records, please let me know!
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to come and talk with me. I want to be a resource for you.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that made you feel uncomfortable, please talk to me about it.

Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality.

You may also report an incident(s) using the [Bias Incident Reporting Form](#).

## **SEXUAL MISCONDUCT AND DISCRIMINATION**

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at [pointloma.edu/Title-IX](http://pointloma.edu/Title-IX). Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are required to disclose information about such misconduct to the Title IX Office.

If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at [counselingservices@pointloma.edu](mailto:counselingservices@pointloma.edu) or find a list of campus pastors at [pointloma.edu/title-ix](http://pointloma.edu/title-ix).

## **USE OF TECHNOLOGY**

In order to be successful in the online environment, you'll need to meet the minimum technology and system requirements; please refer to the [\*Technology and System Requirements\*](#) information.

Problems with technology do not relieve you of the responsibility of participating, turning in your assignments, or completing your class work.