POINT 1902 LOMA
NAZARENE UNIVERSITY

Biology Department

BIO 6043, Research Design

3 Units

Fall 2025

Every other Tuesday 6:00 pm - 7:30 pm

Meeting location: Zoom

Final Exam: Assigned Dec 7, Due Dec 16 by 11:59 pm

Information	Specifics for the Course
Instructor title and name:	Dr. Lauren Emery
Phone:	619-660-3629
Email:	lemery@pointloma.edu (preferred)
Office location and hours:	Via Zoom by appointment as needed. Email me anytime.

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 promotes understanding of both qualitative and quantitative research design with a focus on current trends in the field. The course will promote understanding of both traditional science research as well as science education research and will also prepare students to design and conduct a pilot study.

Program and Course Learning Outcomes

By the end of the course, students will be able to...

- Identify the components of quantitative and qualitative methods, similarities and differences, and some of the arguments for the use of each form of research
- Describe mixed methods approaches to research
- Interpret various statistical techniques, including descriptive (mean, median, mode) and inferential (e.g. t-test, correlation) statistics

- Carry out and communicate various types of data analysis (quantitative and qualitative)
- Develop research questions that are based on and build upon a critical appraisal of existing research
- Design a study to address a research problem

Required Texts and Recommended Study Resources

NOTE: Students are responsible to have the required course textbook prior to the first day of class. Students are also encouraged to begin reading the book in preparation for the class as soon as possible.

1. Salkind, N.J. (2012). Statistics for People Who Think They Hate Statistics: Excel 2010 Edition [Paperback]. Los Angeles: Sage Publications.
    a. Paste this ISBN # 978-1452225234 into Google (or Amazon) and you can purchase a used copy pretty cheap (~$10-$15 with Shipping).
    b. There are at least 10 editions of this book and I will use the Excel 2010 version. This means that my homework assignments will come from this version.
2. Excel: If you don't have Excel, you can download a free version from here: https://products.office.com/en-us/student/office-in-education
3. Supplemental articles from other sources will be used as well.

Course 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.

Assessment and Grading

Sample Assignment Distribution by Percentage:

Discussion Boards	25%
Writing Assignments	45%
Final Exam	30%

Grading Scale:

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

Incompletes and Late Assignments

All assignments are to be turned in by the date and time indicated on Canvas. Assignments turned in past the deadline will be considered, but will be subject to a 10% point deduction for each day the assignment is late (weekends and holidays included). After ten days, an assignment will not be considered for credit. Incompletes will only be assigned in extremely unusual circumstances.

PLNU Spiritual Care

Balboa Campus:

PLNU strives to be a place where you grow as a whole person. To this end we provide resources for our graduate students to encounter God and grow in their Christian faith. At the Balboa campus we have an onsite chaplain, Rev. Kevin Portillo who is available during class break times across the week. If you have questions, desire to meet with Rev. Portillo or prayer requests you can contact him directly at KevinPortillo@pointloma.edu.

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 distance education outside California.

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 Recording Notification

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel.

Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

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 Graduate Academic and General Policies for definitions of kinds of academic dishonesty and for further policy information.

During the first week of class, you will be asked to submit an Academic Honesty Verification Statement. Submitting the statement is a requirement of this course. By submitting the Academic Honesty Verification Statement, you will be verifying all assignments completed in this course were completed by you. Carefully review the Academic Honesty Statement below.

Statement: "In submitting this form, I am verifying all the assignments in this course will be completed by me and will be my own work."

Artificial Intelligence (AI) Policy

The use of Artificial Intelligence (AI) tools (e.g., ChatGPT, iA Writer, Marmot, Botowski, GrammarlyGo, Perplexity, etc.) is prohibited in this course for any aspect of your work, including idea generation, drafting, editing, or final submissions. This course is designed to assess your independent critical thinking, writing, and research skills without the assistance of AI technologies. Violations of this policy will be treated as breaches of academic integrity.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2533). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. Professors are able to view a student's approved accommodations through Accommodate.

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. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

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. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any accommodations.

Language and Belonging

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. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities

such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. 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.

If you (or someone you know) have experienced other forms of discrimination, you can find more information on reporting and resources at www.pointloma.edu/nondiscrimination.

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. 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 or find a list of campus pastors at http://pointloma.edu/Title-IX or as shown in the PLNU Spiritual Care section of this syllabus.

If you (or someone you know) have experienced other forms of discrimination or bias, you can find more information on reporting and resources at www.pointloma.edu/bias

PLNU Course Modality Definitions

1. Online Courses: These are courses with class meetings where all instruction and interaction is fully online.
    a. Synchronous Courses: At least one class meeting takes place at a designated time.
    b. Asynchronous Courses: All class meetings are asynchronous.
2. Hybrid Courses: These are courses with class meetings that take place both in the classroom and online synchronously and/or asynchronously.
3. In-Person Courses: These are courses that meet in person with the instructor and students in a physical classroom setting. With approval by the area dean, this may include up to 25% of qualified class interactions through a Learning Management System (such as Canvas).

PLNU Attendance and Participation Policy

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements.

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 withdrawal date or, after that date, receive an "F" grade.

Students who anticipate being absent for an entire week of a course should contact the instructor in advance for approval and make arrangements to complete the required coursework and/or alternative assignments assigned at the discretion of the instructor. Acceptance of late work is at the discretion of the instructor and does not waive attendance requirements.

Refer to Academic Policies for additional detail.

Synchronous Attendance/Participation Definition

For synchronous courses that have specific scheduled meeting times (including in-person, hybrid, and synchronous online courses), absences are counted from the first official meeting of the class regardless of the date of the student's enrollment. For courses with specific attendance requirements, those requirements are outlined in the course syllabus.

Online Asynchronous Attendance/Participation Definition

Students taking online courses with no specific scheduled meeting times are expected to actively engage throughout each week of the course. Attendance is defined as participating in an academic activity within the online classroom which includes, but is not limited to:

- Engaging in an online discussion
- Submitting an assignment
- Taking an exam
- Participating in online labs
- Initiating contact with faculty member within the learning management system to discuss course content

Note: Logging into the course does not qualify as participation and will not be counted as meeting the attendance requirement.

Use of Technology

In order to be successful in the online or hybrid environment, you'll need to meet the minimum technology and system requirements; please refer to the *Technology and System Requirements* information. Additionally, students are required to have headphone speakers, microphone, or webcams compatible with their computer available to use. Please note that any course with online proctored exams requires a computer with a camera (tablets are not compatible) to complete exams online.

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

GPS Academic Resources

PLNU offers the following free academic resources virtually for Graduate Professional Studies (GPS) Students. Visit myPLNU through the links below for more information.

- **The GPS Writing Center offers:**
  - **Zoom Writers Workshops** offered each quad on a variety of helpful topics
  - **One-to-one appointments** with the Writing Coach
  - **Microlearning YouTube Video Library** for helpful tips anytime
  - **Research Help Guide** to help you start your research
  - The physical office is located on the third floor of the **Mission Valley Regional Center** off the student lounge
- **Academic Writing Resources Course:** Found on your Canvas Dashboard, this course is non-credit with 24/7 access, no time limits, and self-paced content. **Watch a quick video run-through** and take time now to explore!
- **Grammarly**: Students have unlimited FREE access to Grammarly for Education, a trusted tool designed to help enhance writing skills by providing real-time feedback, identifying areas for improvement, and providing suggestions. Grammarly's Generative AI is NOT available with our student accounts.
- **Tutoring**: Students have access to 24/7 live or scheduled subject tutoring through Tutor.com, including a Paper Drop-Off Service with feedback within 12 hours.

We are here to support you! Contact us anytime: **GPSWritingCenter@pointloma.edu**

Schedule

The course will include seven synchronous Zoom meetings during the semester; students are expected to attend all seven sessions. During other weeks, students will have assigned readings and will be expected to participate in threaded discussions online. Substantial writing assignments will be due throughout the semester, and a take home final will be due near the last day of the semester. Since this is a 3-unit course, it is expected that students will spend approximately 9 hours each week doing the reading, participating in discussions, and completing assignments.

Assignments At-A-Glance

The course summary below lists our assignments and their due dates.

Week	Date	Topic
1	Sept 2	Introduction to mixed methods research
2	Sept 9	Quantitative methods – Descriptive statistics **(Meet on Zoom)**
3	Sept 16	Quantitative methods – *t-tests*
4	Sept 23	Quantitative methods – ANOVA & chi-square **(Meet on Zoom)**

5	Sept 30	Quantitative methods – Correlation & linear regression
6	Oct 7	Mixed methods revisited **(Meet on Zoom)**
7	Oct 14	Qualitative methods – Intro to interviews
8	Oct 21	Qualitative methods – Prep for interview protocol **(Meet on Zoom)**
9	Oct 28	Qualitative methods – Creating an interview protocol
10	Nov 4	Qualitative methods – Conduct interviews **(Meet on Zoom)**
11	Nov 11	Qualitative methods – Analyzing interview data
12	Nov 18	Action research & analysis of research papers **(Meet on Zoom)**
13	Nov 25	Preparation for pilot study – Problem & purpose
14	Dec 2	Analysis of research papers & Research question **(Meet on Zoom)**
15	Dec 9	Assignment of final exam (due Dec. 16 by midnight)

**This schedule is subject to change.*