POINT 1902 LOMA
NAZARENE UNIVERSITY

Mathematics, Information, and Computer Sciences – School of STEM

MTH3063—Calculus Based Statistics With R

3 Units

Fall 2026

MW 11:00-1:55 am

Rohr Science 295

Final Exam: Friday, 18-Dec-2026, 10:30 am–1:00 pm

Instructor: Dr. Greg Crow, Professor of Mathematics
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Office hours: Location: Rohr Science 252 (times posted in Canvas)

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.

DEPARTMENT MISSION

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

Course Description

MTH 3036 Calculus Based Statistics with R

A first course in descriptive and inferential statistics for general students who have taken calculus. Topics include experimental design, sampling and sampling distributions, estimation and hypothesis testing. This course also provides a basic introduction to statistical analysis in the statistical software package R. Not applicable toward a major in Mathematics.

Prerequisite(s): MTH 1044 with a grade of C- or higher or MTH 1064 with a grade of C- or higher or equivalent.

GE Course Tag(s): Diverse Perspectives

Program and Course Learning Outcomes

1. Students will be able to compute measures of central tendency for data.
2. Students will be able to compute measures of dispersion for data.
3. Students will be able to use statistical methods to make inferences from data.
4. Students will be able to apply their technical knowledge to solve problems.

Required Texts and Recommended Study Resources
Students are responsible for having the required course textbooks prior to the first day of class.

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.

1. *The Practice of Statistics in the Life Sciences*, 4th Edition by Baldi and Moore
2. A cheap calculator other than your phone, tablet, or computer (with at least a square root key).
3. A calculator (TI-30XIIS) will be provided for you to use on exams. You may not use your own calculator on exams.
4. Laptop or access to a computer with Java enabled in the web browser
5. R and RStudio (see Lab 1 for download and installation instructions)

LomaBooks Instructions for Students
This course is part of our course material delivery program, LomaBooks. The bookstore will provide each student with a convenient package containing all required physical materials; all digitally delivered materials will be integrated into Canvas.

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. It is anticipated that students will spend a minimum of 37.5 participation hours per credit hour on their coursework. For this course, students will spend an estimated 123 total hours meeting the course learning outcomes.

Assessment and Grading
Grading distribution:

- Weekly Participation 5%
- Written Homework: 15%
- Labs: 10%
- Exams (2 at 17.5% each): 35%
- Lab Final Exam: 5%
- Final Exam: 30%

Grades will be based on the following:

- **Weekly Classwork:** Attendance at each class is required. In these class meetings, we will have lectures, work on activities, problems, and labs. Some classwork will be graded, and for some you will get full credit just for attempting.
- **Written Homework:** Homework problems will be assigned regularly and posted on Canvas. A homework assignment is late if it is not submitted at the beginning of class on the due date. Please check regularly to ensure that you are keeping up with the homework. Late homework will not be accepted with the following exception: up to a maximum of one homework assignment will be accepted up to 3 days late provided that consent is received from the professor before it is due.

- **Labs:** The labs are due at the scheduled dates and times and are submitted ONLY in Word or PDF format in Canvas. Late lab assignments will not be accepted with the following exception: up to a maximum of one Lab assignment will be accepted up to 3 days late provided that consent is received from the professor before it is due. Lab assignments that are submitted late without prior consent will be recorded with a score of zero. Your lowest lab assignment score will be dropped.
- **Examinations and the Final Examination:** Examinations and the Final Examination will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class. No examination shall be missed without a well-documented emergency beyond your control. A score of zero will be assigned for an examination that is missed without a well-documented emergency beyond your control.
- **Late work will not be accepted.** Homework and lab assignments that are submitted late will be recorded with a score of zero. During the course, you may find that you are unable to submit homework on time due to a personal situation (for example, a personal or family illness, accident, business trip, etc.). This is why your lowest assignments will be dropped, as described above. Beyond the single use 3-day extensions described above, there are no exceptions to this policy so please use your dropped assignments wisely. Make-up tests will be given only by prior arrangement with the instructor for reasons of documented emergency. All Make-up tests will be offered on the Saturday between classes and Final Exams at 8:30 AM.

Grades are based on the number of points accumulated throughout the course with the following exception. A student must pass at least one of Examination 1, Examination 2, or the Final Examination in order to pass the class. That is, a score of 60% must be achieved on one of the Examinations, or else the final grade will be an F regardless of all other point totals. Approximate minimal percentages required to obtain a given grade are:

Standard Grade Scale Based on Percentages

A	B	C	D	F
A [92.5-100]	B+ [87.5-90)	C+ [77.5-80)	D+ [67.5-70)	F [0-60)
A- [90-92.5)	B [82.5-87.5)	C [72.5-77.5)	D [62.5-67.5)	
	B- [80-82.5)	C- [70-72.5)	D- [60-62.5)	

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 Traditional Undergraduate Records: Final Exam Schedules site. If you find yourself scheduled for three (3) or more final examinations on the same day, you are authorized to contact each professor to arrange a different time for one of those exams. However, unless you have three (3) or more exams on the same day, no requests for alternative final examinations will be granted.

Incompletes and Late Assignments

All assignments are to be submitted/turned in by the beginning of the class session when they are due (labs are due on Saturday)—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

Artificial Intelligence (AI) Policy

You are allowed to use Artificial Intelligence (AI) tools (e.g., ChatGPT, Gemini Pro 1.5, GrammarlyGo, Perplexity, etc) 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 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 withdrawal date or, after that date, receive an "F" grade.

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, by email or phone at 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 approved 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 approved accommodations in that particular course. Accommodations are not retroactive; as such, 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-related need should contact the EAC as early as possible (i.e., ideally before the beginning of the semester) to assure appropriate accommodations can be provided. In accordance with ADA, accommodations cannot constitute a fundamental alteration to course outcomes; therefore, planning ahead is vital in establishing appropriate accommodations for equal access to this course. 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 eligibility 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.

Additional Course Information

Additional PLNU policies and practices that apply to this course can be found at the following link: https://docs.google.com/document/d/1SoL5YMfCv_5cobhBwrDjbcZJzNKKTCfM/edit?usp=sharing&ouid=104297418648613020764&rtpof=true&sd=true

Fall 2026 Calendar MTH 3063

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Aug	30	31 Introduction Ch. 1: Picturing Distributions with Graphs	1	2 Ch. 2: Describing Distributions with Numbers	3	4 *Lab 1: Loading Data (Laptop or Notebook)*	5
September	6	7 **Labor Day**	8	9 Ch 3: Scatterplots & Correlation	10	11 *Department Chapel* Ch 3: Scatterplots & Correlation *Lab 1: Open Lab*	12
	13	14 Ch. 4: Regression	15	16 Ch. 4: Regression Ch. 5: Two-Way Tables	17	18 Ch. 6: Samples & Observational Studies *Lab 2: Summarizing Data*	19
	20	21 Ch. 6: Samples & Observational Studies Ch. 7: Designing Experiments	22	23 Ch. 7: Designing Experiments	24	25 Ch. 9: Essential Probability *Lab 2: Open Lab*	26
	27	28 Ch. 9: Essential Probability Ch. 10: Independence & Conditional Probability	29	30 Ch. 10: Independence & Conditional Probability	1	2 Ch. 11: The Normal Distributions *Lab 3: Another Approach to Graphics*	3
October	4	5 Ch. 11: The Normal Distributions	6	7 Ch. 11: The Normal Distributions Ch. 13: Sampling Distributions	8	9 Ch. 13: Sampling Distributions *Lab 3: Open Lab*	10
	11	12 *Advising Chapel* **Review for Exam I**	13	14 **Exam I**	15	16 Ch. 14: Introduction to Inference *Lab 4: Is this data Normal?*	17
	18	19 Ch. 14: Introduction to Inference	20	21 Ch. 15: Inference in Practice	22	23 **Fall Break**	24
	25	26 Ch. 15: Inference in Practice	27	28 Ch. 17: Inference about a Population Mean	29	30 Ch. 17: Inference about a Population Mean *Lab 4: Open Lab*	31
November	1	2 **Spiritual** Ch. 17: Inference about a Population Mean	3	4 **Renewal** Ch. 18: Comparing Two Means	5	6 **Week** Ch. 18: Comparing Two Means Lab 5: Hypothesis Tests & Confidence Int. for Means	7
	8	9 Ch. 24: One-Way Analysis of Variance (ANOVA)	10	11 Ch. 24: One-Way Analysis of Variance (ANOVA)	12	13 Ch. 25: Review of Inference for Means Lab 5: *Open Lab*	14
	15	16 Ch.19: Inference about a Population Proportion	17	18 Ch.19: Inference about a Population Proportion *Lab 6: Hypothesis Tests & Conf. Int. for Proportions*	19	20 **Review for Exam II**	21
	22	23 **Exam II**	24	25 **Thanksgiving Recess**	26	27	28
	29	30 Ch: 20: Comparing Two Proportions	1	2 *Lab 7: The Central Limit Theorem* *Lab 6: Open Lab*	3	4 Ch: 20: Comparing Two Proportions	5
December	6	7 Ch: 22: Chi-Square Test ($\chi 2$)	8	9 **Lab Final Exam**	10	11 **Review for the Final Exam** *Lab 7: Open Lab*	12
	13	14	15	16	17	18 **10:30 AM – 1:00 PM** **Final Exam**	19