MTH 362 Sec 1 (2 units) Quad 1 Calculus Based Statistics
MWF 10:55-12:05 in RLC 106

Instructor: Ryan Botts, Ph.D.   **Office**: Rohr Science 228
Office Hours: MWF 12:30-2:30   **Phone**: 619.849.2968
                 T 8:30-9:30, 3:30-5,   **Email**: rbotts@pointloma.edu
                 Th 8:30-9:30, Others by arrangement   **Mascot:** Armadillo

Point Loma Nazarene University Mission:	MICS Department Mission:
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 becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.	*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
A first course in descriptive and inferential statistics for general students who have taken calculus. Topics include experimental design, sampling and sampling distributions, point estimation and hypothesis testing supported by the use of statistical software.

Learning Outcomes
- Students will be able to compute measures of central tendency for data.
- Students will be able to compute measures of dispersion for data.
- Students will be able to use statistical methods to make inferences from data.

Required Materials
- Calculator: A scientific calculator is recommended
- Textbook: Baldi and Moore, *The Practice of Statistics in the Life Sciences*. ISBN: **1429272724**
- 2 goats and a spoon

Homework
The homework will consist of doing the assigned checkpoints in the online modules along with written problems assigned as we go. Problems will always be due the next class meeting after being covered in class.

Examinations
There will be a midterm exam and a comprehensive Final exam. No examination shall be missed without an official excuse. A score of zero will be assigned for an exam that is missed without an official excuse. The exam schedule is included in the daily schedule. I will not accept excuses such as poor communication with parents and/or travel agents.

Project
There will be a group research project to be described in class. Portions of the project will be due throughout the semester. This will give you experience applying the skills we have learned.

Grading Policies
Grades will be weighted in the following manner:
Midterm Exam (30%)   Final Exam (40%)   Homework(20%)   Project (10%)

Approximate minimal percentages required to obtain a given grade are:

Grading Scale in percentages	A	B	C	D
+		(87.5, 90)	(77.5, 80)	(67.5, 70)
	[92.5, 100]	[82.5, 87.5)	[72.5, 77.5)	[62.5, 67.5)
-	[90, 92.5)	[80, 82.5)	[70, 72.5)	[60, 62.5)

Other factors that affect grades are
- **Late work**. A written assignment or computer assignment is late if it is not received at the beginning of class on the due date. Late work need not be accepted. Work accepted late may be assessed a penalty. Make-up tests (or the exam) will be given only by arrangement with the instructor for reasons of documented emergency.
- **Questions on written assignments and exams:** Written assignments and test/exam questions and problems must be formulated carefully in terms of words and symbols used in the course. Credit is determined by the degree to which answers and solutions respond to the specific question or problem stated. Maximize your credit by learning the language and symbols of the course.
- **Format for Written Assignments**. Assignments collected must be prepared in a style suitable for grading. The following guidelines are used to determine credit:
  - the organization must be easy to follow
  - the work must be legible
  - complete solutions must be written for problems (not just answers); solutions must be clearly marked
  - use complete sentences to answer questions
- **Exams and Final Examination**. The Mid-Quad Exam and the Final Exam will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class.   The Final Exam is comprehensive.

Attendance:

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes in which a student is registered is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements to be met. There are no allowed or excused absences except as approved in writing by the Provost for specific students participating in certain university-sanctioned activities. Excused absences still count toward the 10%-20% limits, but allow students to make up work, quizzes, or tests missed as a result of a university-sanctioned activity. Activities of a unique nature, such as labs or other activities identified clearly on the syllabus, cannot be made up except in rare instances when

instructors have given advanced, written approval for doing so. Whenever the number of accumulated absences in a class, for any cause, exceeds ten (10) percent of the total number of class meetings, the faculty member should send an e-mail to the student and the Vice Provost for Academic Administration (VPAA) warning of attendance jeopardy. If more than twenty (20) percent of the total number of class meetings is reported as missed, the faculty member or VPAA may 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 W or WF consistent with university policy in the Grading section of the catalog. There are no refunds for courses where a de-enrollment was processed. For more details see the PLNU catalog: http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Class_Attendance

Class Enrollment:
It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

Academic Accommodations:
While all students are expected to meet the minimum academic standards for completion of their courses as established by the instructors, students with special needs may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Students can also reach the Disability Resource Center by phone at 619-849-2486 or by e-mail at DRC@pointloma.edu. Once the student files documentation, the Disability Resource Center contacts the student's instructors and provides written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with special needs and guarantees all qualified students equal access to the benefits of PLNU programs and activities. For more details see the PLNU catalog: http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Accommodations

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

Academic Honesty:
The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose. Violations of academic honesty include cheating, plagiarism, falsification, aiding academic dishonesty, and malicious interference. The details of PLNU's

meaning   of   each   of   these   words   can   be   found   in   the   PLNU   catalog   at:
http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty

A student remains responsible for the academic honesty of work submitted in PLNU courses and the consequences of academic dishonesty beyond receipt of the final grade in the class and beyond the awarding of the diploma. Ignorance of these catalog policies will not be considered a valid excuse or defense. Students may not withdraw from a course as a response to a consequence.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic   dishonesty (http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty).

Final Exam: Feb 29 During our typical class time
The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. Only in the case that a student is required to take three exams during the same day of finals week is an instructor authorized to change the exam date and time for that particular student.

Copyright Protected Materials:
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.

Credit Hour:
In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for an 2 unit class delivered over 7 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

12-Jan (Tues)	13-Jan	15-Jan
Introduction Chapters 1 Picturing Distributions	Chapter 2 Describing Distributions with Numbers	Chapter 3 Scatterplots and Correlation
18-Jan **MLK Day**	**20-Jan** Chapters 3 and 4 Scatterplots and Correlation Regression	**22-Jan** Chapters 4 and 5 Regression Two-Way Tables
25-Jan Chapter 7 Samples and Observational Studies	**27-Jan** Chapter 8 Designing Experiments	**29-Jan** Chapter 9 Introducing Probability
1-Feb Chapter 10 General Rules of Probability	**3-Feb** Review	**5-Feb** **Midterm Exam**
8-Feb Chapter 11 The Normal Distributions	**10-Feb** Chapter 14 Introduction to Inference	**12-Feb** Chapters 14 and 15 Introduction to Inference
15-Feb Chapter 15 Inference in Practice	**17-Feb** Chapter 17 Inference about a Population Mean	**19-Feb** Chapter 18 Two-Sample Problems
22-Feb Chapter 24 One-Way Analysis of variance	**24-Feb** Chapter 19 and 20 Inference about a Population Proportion	**26-Feb** Chapter 21 Chi-Squared
29-Feb **Final**		