

Fermanian School of Business Point Loma Nazarene University BUS/ LDR 6025: Applied Data Analysis and Visualization

Number of Units: 3

Fall 2024 - Quad 1

Meeting days: Online	Instructor title and name: Diane Law
Meeting times: N/A	Phone/Text: 408-472-7085
Meeting location: Online	E-mail: dlaw@pointloma.edu
Final Exam: N/A	Office location and hours: by appointment and Zoom
Additional info:	

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.

Fermanian School of Business Mission

Character – Professionalism – Excellence – Relationships – Commitment - Innovation As members of a vital Christian community, we strive to provide high quality business programs that equip students to make a positive impact in their workplace and community by connecting purpose to practice.

COURSE DESCRIPTION

This course explores methods of applied data analysis, including capturing, identifying and analyzing data to inform decision making. Topics include an overview of statistical concepts, guidelines for effective data analysis, data visualization principles, and presenting and evaluating alternative solutions. Emphasis will be placed on designing and creating data visualizations to communicate with various stakeholders.

COURSE OBJECTIVES & LEARNING OUTCOMES

This course is designed to enable students to:

- 1. Identify the processes and issues associated with research problem definition, research design, question, scale and survey design, sample design, data collection, data analysis, and writing and presenting research methodology (PLO 1 & 6).
- 2. Determine an appropriate research methodology to achieve specific research objectives that includes quantitative and qualitative data collection/analysis techniques (PLO 3).
- 3. Analyze research projects to determine the appropriateness of methods (PLO 2).
- 4. Interpret the appropriate use of emerging business research methods (PLO 3).
- 5. Collaborate with a team to present current topics (PLO 6 & 7).

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 8 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 114 total hours meeting the course learning outcomes. The time estimations are provided in the Canvas modules.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

- 1. *Introduction to Business Analytics* by Vernon J. Richardson and Marcia Weidenmier Watson ISBN 978-1-265-4534-0 (Website Here)
- 2. Visual Analytics with Tableau. ISBN: 9781119560203
 - a. The text can be purchased from the publisher if you desire but is available for free from Ryan Library at <u>https://pointloma.on.worldcat.org/oclc/1096435960</u>. *This site requires your PLNU login.*
- 3. Tableau Desktop is available for free as a student.
 - a. You can acquire Tableau at <u>https://www.tableau.com/academic/students</u>.
 - b. You will need Tableau as both the software and the eLearning suite. Check the <u>technical requirements</u> to ensure you have a laptop capable of Tableau.
- 4. Microsoft Excel (is available through PLNU through <u>https://view.pointloma.edu/</u>)
- 5. Laptops are essential for each class, along with access to the texts either electronically or physically. Unfortunately, if you are using a Chromebook, Tableau has very limited application.
- 6. Feeds/Blog Subscriptions that are useful and to be aware of:
 - a. <u>Viz of the Day</u> by Tableau Software
 - b. <u>The Functional Art</u> by Alberto Cairo
 - c. <u>Perceptual Edge</u> by Stephen Few
 - d. <u>Flowing Data</u> by Nathan Yau
 - e. <u>Storytelling with Data</u> by Cole Nussbaumer

ASSESSMENT AND GRADING

ASSIGNMENTS	POINTS	GRADE SCALE
Weekly Discussions (15)	400	A=93-100%
Weekly Assignments	600	A- = 92-90% B+ = 87-89%
TOTAL	1,000	B = 83-86%
	1,000	$\begin{array}{c} B-=80-82\%\\ C+=77-79\% \end{array}$
		C = 73-76%
		$\begin{array}{c} \hline \\ C- = 70-72\% \\ D+ = 67-69\% \end{array}$
		D = 63-66%
		D = 60-62%
		F = 0-59%

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. No late work is accepted after the due date and time. Incompletes will only be assigned under extremely unusual circumstances.

SPIRITUAL CARE

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 Mission Valley (MV) campus we have an onsite chaplain, Rev. Gordon Wong, who is available during class break times across the week. If you have questions, desire to meet, or share a prayer request with Rev. Wong you can contact him directly

at <u>mvchaplain@pointloma.edu</u> or <u>gordonwong@pointloma.edu</u>. Rev. Wong's cell number is 808-429-1129 if you need a more immediate response.

In addition, on the MV campus there is a prayer chapel on the third floor which is open for use as a space set apart for quiet reflection and prayer.

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 <u>State Authorization</u> to view which states allow online (distance education) outside of 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 the <u>Academic Honesty Policy</u> in the Graduate and Professional Studies Catalog 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 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 ensure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC.

SEXUAL MISCONDUCT AND DISCRIMINATION

Point Loma Nazarene University faculty are committed to helping create a safe learning environment for all students. 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 help and support 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, it is 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 pointloma.edu/title-ix

PLNU ATTENDANCE AND PARTICIPATION POLICY

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in 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. See <u>Academic Policies</u> in the Graduate and Professional Studies Catalog for additional details.

USE OF TECHNOLOGY

In order to be successful in your course, you'll need to meet the minimum technology and system requirements; please refer to the <u>Technology and System Requirements</u> information. Additionally, students are required to have headphone speakers, microphone, or webcams compatible with their computer available to use for any online or hybrid classes. 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.

ASYNCHRONOUS ATTENDANCE/PARTICIPATION DEFINITION

A day of attendance in asynchronous content is determined as contributing a substantive note, assignment, discussion, or submission by the posted due date. Failure to meet these standards will result in an absence for that day. Instructors will determine how many asynchronous attendance days are required each week.

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.

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.

FINAL EXAMINATION POLICY

Successful completion of this class requires taking the final examination **on its scheduled day**. No requests for early examinations or alternative days will be approved.

COURSE SCHEDULE AND ASSIGNMENTS

Readings and elearning are expected to be complete by the following class, meaning we'll work through the material with a guided reading in a class, then you'll be accountable for knowledge in the next class.

Week 1 - Statistics Module Introduction

Week 1 introduces key probability concepts that underpin most statistical and analytical methods. Without a strong foundation in the ideas of probability, randomness, and uncertainty, it is very difficult to truly understand and correctly apply most statistical inference methods. The normal distribution is the lynchpin to most statistics through the central limit theorem, which underlies much of classical statistical methodology. When making decisions in an inherently uncertain world, the rules and laws of probability help provide support for addressing issues that arise from uncertainty.

You are required to take the Quantitative Research Techniques and Statistics course leveling module. The time to complete the module is estimated at 6 to 9 hours, depending on your previous exposure to the subject.

To access the Quantitative Research Techniques and Statistics module, follow the on-screen instructions found at the following URL: <u>https://micro.peregrineacademics.com/pointloma</u>

The password for the module is: PLNU-1001. If you have any problems with the registration process, please visit Peregrine's technical support page at: http://www.peregrineacademics.com/support

To successfully complete the module, you must earn a minimum score of 80% on the module posttest. You are allowed to attempt the post-test twice. If you have not achieved a passing score (80%) after two attempts, you will be required to purchase a new module for \$39.00 and continue attempts until a passing score is achieved at the same URL:

The password for the <u>retake</u> module is: PLNUPAY-1001

If you take any modules that are not assigned to you for this course, you will be billed for each module at \$39. Modules should only be taken when assigned by the course and NOT earlier. This module is worth 5% of your total course grade. The percentage earned on the leveling module post-test will be translated into points earned in this course as follows:

Post-test Percentage	Points Earned in Course
95.00-100	50
90-94.99	45

85.00-89.99	40
80.00-84.99	35
<80.00	0

Follow the directions for the Quantitative Research Techniques and Statistics Module Pre-Test. Get a notebook and pen so you are ready to take notes during the Pre-Test.

As you take the Pre-Test and come across terms that you do not know, need further explanation about, or require additional information stop and write out the term before you answer the question. Try to create a study plan of information you need to get a 100 on the post-test.

Then work on the Module, which can take up to 9 hours. **But don't take the Post-Test yet.** See if you can answer the questions that you generated when you took the pre-text; if not, do a general web search and answer your questions.

The first week's assignment, the Pre-Test Write-Up, is worth 50 points, or 5% of your grade. For each question or term, you do not know research that term using the Module (without taking the post-test) or a general web search, write out what the term or concept means. The submission will be a Word document with your name on it listing the term, the research's results, and the source. Even if you got a 100 on the pre-test please list anything that required greater explanation.

Required Reading, Viewing, Study, and Tasks:

- Start the Quantitative Research Techniques and Statistics leveling module in Peregrin.
- Read Chapters 2 through 5 in the <u>Business Analytics Communicating with Numbers</u>

Assignment Week 1

• Take the Pre-Test in Peregrine and write a Pre-test Write-Up – Upload the Word document to Canvas.

Assignment Week 2

• Research Topic

Assignment Week 3

• Harps Grocery Store SOAR Analysis

Assignment Week 4

• Quantitative Research Module Post-Test

Assignment Week 5

• Excel or Tableau Exercise

Assignment Week 6

• Tableau or Excel Exercise

Assignment Week 7

• Research Report

Week 8

• Airbnb Dashboard