Syllabus

![Point Loma Nazarene University logo] 19 02 **POINT LOMA** NAZARENE UNIVERSITY	**Mathematical, Information and Computer Sciences** **CSC3031 Data Visualization and Communication in R** **1 Unit** **Tuesday: 2:55-3:50 RS295**
Spring 2023	

Instructor: Maria Zack, Ph.D.
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Office hours: On Zoom - **Click here for appointment** **(https://calendar.google.com/calendar/selfsched? sstoken=UUphMmZJc2tlVTFKfGRIZmF1bHR8YTE5OTI3YWQxZDFhZDc4MDExZWQ5ZjU3MDRhNmNkNTI**) These are the times that I work to hold open for appointments. If none of them work you can email me to see if we can find another time. Please note that some sessions are Zoom only and are shown with the statement "Zoom only" after the time. The others can be Zoom or In-Person. Monday 11:00 AM -12:00 PM and 2:30-3:00 PM (Zoom only) Tuesday 7:30-8:30 AM and 4:30-5:30 PM (Zoom only) Wednesday 11:30 AM - 12:00 PM and 5:00-6:00 PM (Zoom only) Thursday 8:30-9:30 AM (Zoom only) and 4:00-5:30 PM Friday 10:30 AM - 12:00 PM (Zoom only)

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

CSC 3031 Data Visualization and Communication with R (1 Unit)
Students will learn to create effective static and dynamic graphics for representing complex data sets. Students will learn to apply the principles of effective storytelling with data, and best practices in data design and communication.

Prerequisite(s): CSC 1043 or EGR 1043 with a grade of C- or better.

COURSE LEARNING OUTCOMES

- Students will be able to apply their mathematical knowledge to solve problems.
- Students will be able to use technology to solve problems.
- Students will be able to write correct and robust software.
- Students will be able to apply their technical knowledge to solve problems.

COURSE GOALS

- Students will be able to construct a dataset, explore the data using basic numerical and visual summaries.
- Students will be able to identify and implement the correct R tool for data analysis
- Students will be able to find new packages and learn to implement new tools in R using the documentation.

REQUIRED TEXTS AND RECOMMENDED STUDY RESOURCES

R in Action, 2nd ed. Kabacoff, Robert I. 2015. ISBN: 9781935182399

R from R-project.org

R studio from Rstudio.com

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 1 unit class delivered over fifteen 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.)

ASSESSMENT AND GRADING

Graded Components

- **R in the News Discussion**: One of the best ways to learn what can be done in R is to follow R in the media, you may want to subscribe to some community groups in LinkedIn or follow relevant R # in social media. I would suggest finding some that are relevant to your discipline. You should post a short summary of an interesting tool or project you have seen using R. The post should only be about a paragraph long. URLs where you found the original information is helpful.
- **Homework/Labs**: Learning a programming language requires hands on experience, so the primary component of your grade will be from weekly labs and homework assignments.
- **Final Project:** You will have a final project that you will present at the final (May 3rd at 1:30). There will be steps for leading up to the project during the semester and the last few weeks will be dedicated to working on the project.
- **No late work will not be accepted** without prior consent or a well-documented emergency. 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. Homework assignments that are submitted late without prior consent will be recorded with a score of zero. If more than half of the homework assignments are submitted on time, then the lowest homework score will be dropped from the calculations of the homework grade.

Point Distribution

Grading Distribution	Percent
R in the News	15

Homework/Labs	60
Final Project Preparation	5
Final Project	25
Total	100

Grading Scale

Grades are based on the number of points accumulated throughout the course. Approximate minimal percentages required to obtain a given grade are:

Grad Distribution

Standard Grade Scale Based on Percentages				
	A	B	C	D	F
+		87.5- 90	77.5-80	67.5-70	
	92.5 -100	82.5-87.5	72.5-77.5	62.5 -67.5	0-60
_	90-92.5	80-82.5	70-72.5	60-62.5	

INCOMPLETES AND LATE ASSIGNMENTS

All assignments are to be submitted/turned in when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

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.

SPIRITUAL CARE

PLNU strives to be a place where students grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith.

If you have questions, a desire to meet with the chaplain, or if you have prayer requests, you can contact the **Office of Student Life and Formation** **(https://www.pointloma.edu/offices/student-life-formation)** .

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** **(https://www.pointloma.edu/offices/office-institutional-effectiveness-research/disclosures)** 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 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** **(https://catalog.pointloma.edu/content.php?**

catoid=52&navoid=2919#Academic_Honesty) 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 (mailto: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 assure 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 (http://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 (mailto:counselingservices@pointloma.edu)** or find a list of campus pastors at **pointloma.edu/title-ix (http://pointloma.edu/title-ix)**

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 drop date or, after that date, receive the appropriate grade for their work and participation.

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 (https://help.pointloma.edu/TDClient/1808/Portal/KB/ArticleDet?ID=108349)_** 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 require 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.

Monday	Tuesday	Wednesday	Thursday	Friday
9-Jan **BUSINESS DAY**	10-Jan	11-Jan	12-Jan Stats Labs 1, 2, and 3	13-Jan
16-Jan **MLK DAY**	17-Jan	18-Jan	19-Jan Stats Labs 4 and 5	20-Jan
23-Jan	24-Jan	25-Jan	26-Jan Stats Labs 6 and 7	27-Jan
30-Jan	31-Jan	1-Feb	2-Feb R Book Lab 1	3-Feb
6-Feb	7-Feb	8-Feb	9-Feb R Book Lab 2	10-Feb
13-Feb	14-Feb	15-Feb	16-Feb R Book Lab 3	17-Feb
20-Feb	21-Feb	22-Feb	23-Feb R Book Lab 4	24-Feb
27-Feb	28-Feb	1-Mar	2-Mar No Meeting R Book Lab 5	3-Mar
6-Mar **SPRING BREAK**	7-Mar **SPRING BREAK**	8-Mar **SPRING BREAK**	7-Mar **SPRING BREAK**	8-Mar **SPRING BREAK**
13-Mar	14-Mar	15-Mar	16-Mar R Book Lab 6	17-Mar
20-Mar	21-Mar	22-Mar	23-Mar R Book Lab 7	24-Mar
27-Mar	28-Mar	29-Mar	30-Mar R Book Lab 8	31-Mar
3-Apr	4-Apr Project Meeting #1	5-Apr	6-Apr **EASTER BREAK**	7-Apr **EASTER BREAK**
10-Apr **EASTER BREAK**	11-Apr Project Meeting #1	12-Apr	13-Apr Project Meeting #1	14-Apr
17-Apr	18-Apr Project Meeting #2	19-Apr	20-Apr Project Meeting #2	21-Apr
24-Apr	25-Apr Project Meeting #2	26-Apr	27-Apr **FINAL PROJECT PRESENTATIONS**	28-Apr
1-May	2-May	3-May	4-May **4:30 R CODE DUE**	5-May