



Course Title: An Introduction to Data Science in R

Course Code: CS 76 W

Instructor: Mohammad Shokoohi-Yekta

Course Summary

This course presents a high-level overview of three main topics in applied data science: basic analysis and visualization of data, introductory machine learning concepts, and basic programming in R (a programming language that is widely used for data analysis). The course will include lectures and hands-on, interactive problem-solving. Examples will come from real-world problems in real estate, weather, marketing, biology, stocks, neuroscience, medicine, and other disciplines. By the end of the course, students will be able to apply data science techniques to real-world applications in order to draw meaningful conclusions.

Grade Options and Requirements

- No Grade Requested (NGR)
 - This is the default option. No work will be required; no credit will be received; no proof of attendance can be provided.
- Credit/No Credit (CR/NC)
 - Students must participate in at least 70% of weekly discussions.
- Letter Grade (A, B, C, D, No Pass)
 - Students must participate in at least 70% of weekly discussions, and complete the final project (details to be provided in class).

**Please Note: If you require proof that you completed a Continuing Studies course for any reason (for example, employer reimbursement), you must choose either the Letter Grade or Credit/No Credit option. Courses taken for NGR will not appear on official transcripts or grade reports.*

Tentative Zoom Schedule*

Mondays from 7:00 pm to 8:00 pm Pacific Time.

**Please note that the Zoom schedule is subject to change. Attendance at Zoom sessions is optional. Zoom sessions will be recorded and made available to enrolled students who are unable to attend.*

Tentative Weekly Outline

Week	Main Topic	Real World Applications
1	What is Data Science, Getting Started with R	Malaria Detection
2	Data Visualization, Basics in Programming with R	Mice Project
3	Interactive Visualization, Compare Distributions	-
4	Data Science and Statistical Analysis	Data Science in Healthcare
5	Predictive Modeling, Regression Analysis	Time Series Prediction
6	Predictive Modeling, Classification	Internet of Things
7	Feature Selection and Finding the Best Predictive Model	Improving Accessibility
8	Clustering and Association Rule Mining	Mining Health Insurance Data
9	Advanced Topics in R: RSelenium and Shiny	Automatically monitoring campsite availabilities
10	Advanced Machine Learning, Deep Learning	Automatic Optical Inspection