Fall 2018 Stat 427/527: **Advanced Data Analysis I**

Instructor: Dr. Yan Lu, `yanlu@unm.edu`,

`http://www.math.unm.edu/~luyan/ADA118/ADA118.html`

Time and Location:

9:30am-10:45am (Section II), TR, DSH 225

12:30pm-13:45pm (Section I), TR, DSH 328

Teaching Assistant:

Xuan Xie, `xiex@unm.edu`

Office hours:

Yan Lu, SMLC 316, TTr 2:00pm-3:00pm or by appointment

Teaching assistant: Xuan Xie, SMLC 348, WF: 12:30pm-1:30pm

Textbook: Lecture notes for Advanced Data Analysis 1, by Erik B. Erhardt, Edward J. Bedrick, and Ronald M. Schrader. Electronic version will be provided.

Reference: Dr. Erik Erhardt's website for teaching ADA1 in the past semesters

https://statacumen.com/teaching/ada1/

Prerequisites: Stat 145 and Stat 345.

Topics: Topics covered through the semester are: Introduction to R and Rstudio, Summarizing and Displaying Data, Estimation in One-Sample and Two-sample Problems, One-Way Analysis of Variance, Nonparametric Methods, Categorical Data Analysis, Correlation and Regression, Introduction to the Bootstrap, and Data Cleaning. These topics are mainly included in chapters 0-11.

At the end of the course, you should be able to

- Use statistical software, such as R, to read and manage data, create informative plots, report numerical summaries;

- Understand from a data story the goals of the study and apply the correct statistical procedure to analyze data;

- Discover relationships and make predictions through model development and selection;

- Explain the scientific aspects of a problem to nonscientists in a fashion that enhances understanding and decision making.

Computing

R and Rstudio will be used in this class. You can bring a laptop for use in the first two weeks.

R package can be downloaded from website for free http://cran.r-project.org

To see how to install R and Rstudio in windows, visit

`https://www.youtube.com/watch?v=eD07NznguA4`

for Mac

`https://www.youtube.com/watch?v=GFImMj1lMRI`

Grading: Homework Assignments will be given about every week to make for about a total of about 14 assignments. Homework 30%, Midterm Exam, 30%; Final Exam, 40% (final is not comprehensive). Grading for graduate students and undergraduates will be separate.

	Stat 527	Stat 427
A	90%-100%	85%-100%
B	80%-89%	75%-84%
C	70%-79%	60%-74%
D	under 70%	under 60%