

Spring 2019 Stat 428/528: **Advanced Data Analysis II**

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

<http://www.math.unm.edu/~luyan/ADA219/ADA219.html>

Teaching Assistant: Xinmin Chu, xchu@unm.edu

Time and Location:

9:30am-10:45am TR, DSH 227

Office hours:

Yan Lu, SMLC 316, TTr 11:00am-12:00pm or by appointment

Xinmin Chu, SMLC 319, MW 2:30pm-3:30pm

Textbook: Lecture notes for Advanced Data Analysis 2, by Erik B. Erhardt, Edward J. Bedrick, and Ronald M. Schrader. Electronic version will be provided.

Reference: Dr. Erik Erhardt's and Dr. James Degnan's lecture notes.

Prerequisites: Stat 427.

Topics: ADA2 is a continuation of 427/527. Topics includes multiple linear regression, analysis of variance, analysis of covariance, logistic regression, Multivariate analysis of variance, principal components, cluster analysis, discriminant analysis, classification and data cleaning.

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

- Use statistical software, such as R or Rstudio, 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, Rstudio, and Rmarkdown will be used in this class. You can bring a laptop for use in the first two weeks.

R:

<http://cran.r-project.org>

Rstudio:

<https://www.rstudio.com/products/rstudio/download>

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=GFImMj11MRI>

R Markdown:

<http://rmarkdown.rstudio.com>

Grading: Homework Assignments will be given about every two weeks to make for about a total of about 8 to 9 assignments. Homework 30%, Midterm Exam, 40%; Final Project, 30%. 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%