



Special Topics: Course in Data Science for the Social Sciences
Summer Session I, June 2019
Professor Melissa Rogers
CGU Inequality and Policy Research Center

Contact Information

Course Instructor: Melissa Rogers

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Office Hours: By appointment

Course Schedule

Meeting day, time: Monday-Friday 2-5pm

Course Location: IPRC Offices

Course Description: The study of inequality in the social sciences demands sophisticated tools to analyze trends and patterns in income, wealth, and socio-political resources. In this course, we will use the Data Camp online courses to develop increased empirical sophistication with R, Python, and Git. The ultimate objective of the course is to improve our use of statistical and coding programs with application to the social sciences.

Course Requirements: This course is only open to graduate students developing their dissertation proposals or dissertations.

Class Readings and Assignments

Week 1: Working in R

Class 1: Introduction to R

Class 2: Cleaning Data in R

Class 3: Data Visualization with ggplot2 (Part 1)

Class 4: Data Visualization with ggplot2 (Part 1), continued. Data Visualization with ggplot2 (Part 2)

Class 5: Data Visualization with ggplot2 (Part 1), continued

Week 2: Version Control and Data Management

Class 6: Introduction to Git for Data Science

Class 7: Cleaning Data in R

Class 8: Reporting with R Markdown

Class 9: Working with RStudio IDE

Week 3: Advanced Topics in R

Choice of Tracks:

Spatial Statistics: Working with Geospatial Data in R, Spatial Statistics in R, Spatial Analysis in R with sf and Raster

Text Analysis: Introduction to Text Analysis in R, Text Mining: Bag of Words, Sentiment Analysis in R

Network Analysis: Network Analysis in R, Network Analysis in R: Case Studies

Public Policy: Using US Census Data in R, Working with Web Data in R

Final Class Meeting: Students will present preliminary data analysis for their dissertations to the class.

Assignments:

75%: Students will submit certificates of completion for each Data Camp course.

25%: Students will present preliminary data analysis for their dissertations at the final class meeting.