

**URPL 6225: Urban Policy Analytics**
(DRAFT)

Department of Urban and Regional Planning
College of Architecture and Planning
University of Colorado Denver

Instructors

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Course Logistics

Name: (URPL 6225) Urban Policy Analytics
Website: TBD
Term: Spring 2021
Class Meeting Days: Tuesday
Class Meeting Hours: 9:30AM - 12:15PM
Class Location: Zoom

COURSE OVERVIEW**1. Welcome!**

We live in a world overflowing with data. These data can be qualitative (images, text, spoken words, etc.) or quantitative (numbers). Some debate exists around what is considered robust. Are the spoken words of a few individuals during a focus group more accurate than the survey data of hundreds? As you move forward in your careers, you will be required to make judgments about the quality of data, how it can be (or was) collected, how representative is it, and what can data tell you. This course will help you identify various publicly available datasets and teach you methods to analyze numerical data.

2. University Course Catalog Description

This course teaches quantitative analysis techniques to answer questions about Planning. Topics include population/economic forecasting, analysis of census data, research design, and survey design. Relying on the software R, students learn how to manage datasets and run bivariate/multivariate statistical analysis. Prereq: URPL 5010 - Planning Methods or instructor's permission. Max Hours: 3 Credits.

3. Course overview

This lab-based course will teach the statistical skills required to examine urban policy issues. Please see page 3 for a full list of topics. We will work with cross-sectional data and rely on R-Studio software. No prior experience with R-Studio is required. To succeed, you are required to keep up with the labs and homework, attend all lectures, and actively work with the instructor to develop your term paper.

4. Course Goals and Learning Objectives

Goals: The overall goal of this course is to make you data literate. You will build skills including advanced spreadsheet analysis and rigorous statistical testing. You will become familiar with publicly available datasets and learn how to operate preliminary statistical tools.

Learning Objectives: At the end of this course students will:

- Become familiar with multiple databases related to Planning
- Learn how to compute changes in the population and the economy
- Learn about survey/research design and sampling
- Conduct appropriate statistical tests
- Learn basic regression analysis
- Learn how to operate an open-source software (R-studio)
- Evolve a policy question that can be answered using publicly available data in a time-constrained setting

5. Course Prerequisites

Based on URPL 5010, you are expected to understand the basics of data, such as levels of measurement, database structures, etc.

6. Course Credits

3 Units

7. Required Texts and Materials

Ewing, Reid H., and Keunhyun Park, eds. 2020. *Basic Quantitative Research Methods for Urban Planners*. APA Planning Essentials. New York, NY ; Abingdon, Oxon: Routledge.
<http://skyline.ucdenver.edu/record=b4021584~S0>

8. Supplementary (Optional) Texts and Materials

- Wheelan, C. J. (2013). *Naked statistics: Stripping the dread from the data* (1st Edition). W.W. Norton.
- Best, J. (2008). *Stat-spotting: A field guide to identifying dubious data*. University of California Press.
- Lane, D. et al. (2019). *Online Statistics Education: An Interactive Multimedia Course of Study* (available free at <http://onlinestatbook.com/2/>)
- Venables, W., Smith, D., and R Core Team (2018). *An Introduction to R* (available free at <https://cran.r-project.org/doc/manuals/r-release/R-intro.pdf>)

9. Course Schedule

Week	Date	Topic
1	19-Jan	Course introduction + Why study quantitative reasoned policy analysis?
2	26-Jan	Introduction to R-Studio + Measures of central tendency and dispersion
3	2-Feb	Chi Square and Correlation
4	9-Feb	t-Tests and ANOVA
5	16-Feb	Regression analysis for continuous outcome variables (e.g., building heights)
6	23-Feb	Regression analysis for binary outcome variables (e.g., Travel mode is bus versus rail)
7	2-Mar	An introduction to censuses
8	9-Mar	Research design and methods
9	16-Mar	Survey design
10	23-Mar	Spring break (no class)
11	30-Mar	Causal inference and sampling
12	6-Apr	Population forecasting
13	13-Apr	Computing economic change
14	20-Apr	Comparing places using publicly available data
15	27-Apr	Data representation
16	4-May	Working session for term paper
17	11-May	Term paper due by 12:15PM