

ECON 427 - Econometrics II - Prediction and Causality - Oral Focus - Fall 2023
FUTURE-PROOF YOUR CAREER BY BECOMING AN EXPERT DATA ANALYST!

Instructor: Peter Fuleky
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Office Hours: anytime by appointment
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Class Location: SAUND 541
Class Time: MWF 10:30-11:20
Final Exam: M 9:45-11:45

Prerequisites: ECON 425 Completed w/ B- grade or better.

Website: <http://www2.hawaii.edu/~fuleky/econ427/econ427.html>

Student Learning Outcomes:

Learn data analytic skills through real life examples. Explore and wrangle data, interpret regressions, and use machine learning for prediction. Carry out hands-on data analysis based on fully developed case studies. Demonstrate effective communication by presenting results to an educated audience.

Required Reading:

- Gábor Békés and Gábor Kézdi: Data Analysis for Business, Economics, and Policy. (<https://gabors-data-analysis.com>)
- We will cover the second half of the book: <https://gabors-data-analysis.com/chapters/>



Recommended Reading:

- Rob Hyndman and George Athanasopoulos: Forecasting: Principles and Practice. (<http://otexts.com/fpp3/>)
- Jennifer Castle, Michael Clements and David Hendry: Forecasting, An Essential Introduction
- Trevor Hastie and Rob Tibshirani: An Introduction to Statistical Learning with Applications in R. (<https://www.statlearning.com>)
- Nick Huntington-Klein: The Effect. (<https://theeffectbook.net>)
- <https://curriculum.openmlu.com/>

Course Requirements:

Grades for the course will be based on one midterm exam (20%), one comprehensive final exam (25%), problem sets (10%), a term project (30%), and participation (15%). Participation includes written quizzes (5%), oral recaps of previous class sessions, and contribution to class discussions (10%) (see next page). Due dates are firm!

Out-of-Class Communication:

Limit your private emails to teaching staff. I encourage you to post your questions on the discussion board so that your classmates can also respond. Find our class page at: <https://classroom.google.com/c/NTYzNTQwMDk3NDY5?cjc=elnqqpy>
Join the class using code: elnqqpy

Exams:

The midterm and final exams must be taken at the scheduled dates and times. Except for medical emergency, I will not schedule makeup exams.

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Problem Sets:

Problem sets will include analytical lecture material and coding applications. They will take a substantial amount of time, so plan ahead!

Project:

Get inspired by the case studies at: <https://gabors-data-analysis.com/casestudies/>. You will follow a data analytic workflow from data exploration to prediction and present your work to the class.

Class Participation:

Active participation helps to deepen understanding of course material. To facilitate this, the class will follow an informal lecture / discussion format, and I expect you to participate. You will be evaluated on your contribution to class discussions. Prepare for class by reading ahead in the textbook. Do not miss class. At the beginning of each class there will be a short oral quiz on the topics covered in the previous class session, and we will discuss assigned reading material (this will include presentations by you). You will also provide constructive critique of your classmates' projects.

Academic Integrity:

Academic dishonesty includes cheating and plagiarism, and may result in suspension or expulsion from the University.

Students with Disabilities:

If you feel you need accommodations because of the impact of a disability, please (1) contact the KOKUA Program (V/T) at 956-7511 or 956-7612 in room 013 of the QLCSS, and (2) speak with me privately to discuss your specific needs.

Software:

We will use *R*, a leading statistical environment with powerful analytical capabilities. **Note, *R* is not point-and-click software - it is a programming language.**

Useful Resources for Learning R:

- <https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf>
- <https://jiamingmao.github.io/data-analysis/Resources/>
- <https://rstudio.com/resources/cheatsheets/>
- <https://r4ds.had.co.nz>
- <https://github.com/rstudio-education>
- <https://github.com/nuitrcs/rworkshops>
- <https://intro2r.library.duke.edu/>
- <https://rafalab.github.io/dsbook/>
- https://jules32.github.io/2016-07-12-Oxford/R_RStudio/
- <https://bookdown.org/yihui/rmarkdown/>
- <https://rkabacoff.github.io/datavis/>
- <https://r-graphics.org>
- <https://ggplot2-book.org>
- https://b-rodrigues.github.io/modern_R/
- <https://rc2e.com>
- <http://adv-r.had.co.nz>
- <https://otexts.com/fpp3/>
- <http://uc-r.github.io/descriptive>
- <https://bookdown.org/rdpeng/rprogdatascience/>
- <https://uclssp.github.io/PUBLG088/>
- <https://bookdown.org/ccolonescu/RPoE4/>
- <https://hbctraining.github.io/Training-modules/>
- <http://varianceexplained.org/RData/>
- <https://joeystanley.com/pages/r-workshops>
- <http://www.feart.engineering/>
- <https://mlr3book.mlr-org.com>
- <https://combine-australia.github.io/r-pkg-dev/>