

**YCU Spring 2023 “Advanced Topics in Economics”**

**Subtitle: “Doing Data Science and Econometrics in R”**

**Room #201**

**3<sup>rd</sup> period**

This course will teach students the basics of data handling, statistics and econometrics at an introductory level using the free software R. We will apply the basic principles of correlation, causation and inference to several problems in political science, economics, and international economics.

Each week, the professor will discuss the basic theory behind a key statistical concept. Next, we will learn the topic in more detail by applying those statistical methods to actual data in the classroom using R.

**Grading System**

Weekly attendance (40%)

Periodic in-class quizzes using R. (20% in total)

Take-home Midterm using R (20%)

Final, in-class Exam using R (20%)

The main text will be:

**Data Analysis for Social Science: A Friendly and Practical Introduction**

by Elena Llaudet and Kosuke Imai

Princeton University Press

As this book is new and hard to get in Japan, the instructor will make select chapters available for the students (photocopies). The entire class will be conducted in English. The student needs to have a PC and install R on their PC at the beginning of the semester.

## **Weekly Class Schedule**

Subject to change, in part depending on the students who register.

Week 1: Intro to R, Intro to the Course, Finding quality data

Week 2: Getting started in R.

Week 3: Chapter 1 in Text (Llaudet and Imai)

Week 4: Chapter 2

Week 5: Chapter 3

Week 6: Chapter 4

Week 7: Chapter 5

Week 8: Chapter 6 (may skip and do another topic)

Week 9: Chapter 7 (may skip and do another topic)

Week 10: Inflation is always a Monetary Phenomenon (proving Friedman is right)

Week 11: Exchange Rate Pass-Through

Week 12: Exchange Rate Pass-Through

Week 13: Endogeneity and Instrumental Variables

Week 14: Endogeneity and Instrumental Variables

Week 15: Final, in-class exam. Bring your PC.