

Applied Econometrics

ECG 563

North Carolina State University

Fall 2020

Instructors: Harrison Fell and Roger H. von Haefen

Contact information (Office/Phone/Email):

Fell – NH 4312/919-515-4676/hfell@ncsu.edu

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Office hours:

Fell – M/W 1:30-3:30 & by appointment

von Haefen – M/W 1:00-3:00 & by appointment

Teaching Assistant: Daniyar Zhumadilov (dzhumad@ncsu.edu)

Class meeting days/times: M/W 10:15 – 11:30 in NH 2402

Website: <https://moodle-courses2021.wolfware.ncsu.edu/course/view.php?id=1703>

Zoom Address:

<https://ncsu.zoom.us/j/94370469621?pwd=ak02YzR0R1JvV0pVRXVmRHBvSDZodz09>

Meeting ID: 943 7046 9621 Passcode: 763320

Textbook and/or other requirement materials:

Suggested texts:

Wooldridge, J.M. 2016. “Introductory Econometrics: A Modern Approach, 6th Edition”, South-Western Cengage Learning. (Note: older editions will be fine)

Angrist, J.D. and J-S Pischke. 2009. “Mostly Harmless Econometrics: An Empiricist’s Companion”, Princeton University Press.

Train, Kenneth, 2009. Discrete Choice Methods with Simulation, 2nd Edition. Cambridge University Press. (Note: all chapters are downloadable at <https://eml.berkeley.edu/books/choice2.html>)

Student learning outcomes:

Students will learn/ gain experience with:

1. STATA programming language.
2. panel data analysis techniques.
3. modern approaches to project analysis.

4. maximum likelihood estimation techniques.
5. censored and truncated linear regression models.
6. discrete choice and count data techniques.

Academic Integrity: Cheating will be prosecuted to the maximum extent possible within the University's Code of Student Conduct: <http://policies.ncsu.edu/policy/pol-11-35-01>

Brief list of topics covered:

1. Introduction to panel data analysis.
2. Introduction to the hypothetical outcome framework.
3. Matching estimators.
4. Difference-in-Differences estimators.
5. Regression discontinuity estimators.
6. Theory of Maximum Likelihood
7. Censored / Truncated regression models
8. Logit / Probits
9. Conditional Logit
10. Count Data Models

Grading Procedures: *(Note: all courses must have a published, transparent grading policy that students can use to gauge their performance and progress in the class through the course of the semester.)*

Coursework Return Policy:

The weighting of the final grade will be determined as follows:

Exam 1 –	35%
Exam 2 –	35%
Homework –	25%
Participation –	5%

Exam 1 will cover the material covered by Dr. Fell. Exam 2 will cover topics covered by Dr. von Haefen. There will be homeworks given throughout the semester as well. These are intended to be done as individual assignments and will typically involve some applied data analysis. The homeworks will be due at the beginning of class on the assigned due dates. Homework turned in late will not be accepted without prior approval. Participation grades will be assigned based on student attendance and student participation in the general discussions.

Absence Policy (e.g., Sports/Activities Policy): Attendance and participation are mandatory. Please notify the instructor of any planned absences.

Detailed Course Schedule:

Below is a tentative outline for the class with an expected reading list. I stress that this is a tentative list. Topics, readings, and listed order are all subject to change based on class progress and professor preferences. Please consult the webpage for this class frequently for updates on topics covered and required readings.

Week 1 - Introduction	
Week 2 - OLS Review	Wooldridge: ch 2 - 6
Week 3 - Panel Data 1	Wooldridge: ch 13-14 Angrist & Pischke: ch 5
Week 4 - Panel Data 2	Wooldridge: ch 13-14 Angrist & Pischke: ch 5
Week 5 - Hypothetical Outcome Framework	Angrist & Pischke: ch 3
Week 6 - IV and Matching Estimators	Angrist & Pischke: ch 4
Week 7 - Diff-in-Diff Estimators	Wooldridge: ch 13 Angrist & Pischke: ch 5
Week 8 - Regression Discontinuity	Angrist & Pischke: ch 6
Week 9 - Theory of Maximum Likelihood	Chapter 1 from <i>Maximum Likelihood Estimation with Stata</i> (posted on Moodle)
Week 10 - Censored & Truncated Regression Models	Wooldridge: ch 17 (Sections 2, 4 & 5)
Week 11 - Logits and Probits	Wooldridge: ch 17 (Section 1)
Week 12 - Conditional Logit	Train: ch 1-4
Week 13 - Conditional Logit (cont.)	Train ch 1-4
Week 14 - Conditional Logit (cont.)	Train: ch 6
Week 15 - Count Data Models	Wooldridge: ch 17 (Section 3) Cameron & Trivedi (posted on Moodle)
Week 16 - Count Data Models	Cameron & Trivedi (posted on Moodle)