

ECON 581 A Wi 18: Econometrics II

Instructor and TA

Instructor: Eric Zivot, ezivot@uw.edu. Office hours: TuTh 5-5:30pm, or by appointment, Savery 348.

TA: Castiel Chen Zhuang, cczhuang@uw.edu. Office hours: MW 1:30-2:30pm, or by appointment, Savery 319B.

Course Description

Econ 581 is the second course in a three quarter sequence in graduate-level econometrics. The emphasis is on regression methods and basic asymptotic theory for inference. This is mainly a "tools and techniques" course that will provide a foundation for applied research in economics.

Course Prerequisites

Econ 580 or equivalent. Familiarity with probability and statistics with calculus and matrix algebra is assumed.

Course Requirements

Credit for this course is obtained by successfully completing

- Weekly homework assignments (mixture of analytic exercises and computer assignments using R and Stata): 20%
- Midterm exam: 40%
- Final exam: 40%

Textbooks

The required textbook is the online textbook *Econometrics* by Bruce Hansen. This book is available on Bruce's University of Wisconsin [webpage](#). The plan is to cover material in chapters 1-9 and 13. I will also give a short introduction to regression from a statistical learning perspective.

To supplement Hansen's book, I recommend *Econometrics* by Fumio Hayashi and *Econometric Analysis of Cross Section and Panel Data* by Jeffrey Wooldridge. For students with little background in econometrics, I recommend *Introductory Econometrics: A Modern Approach* by Jeffrey Wooldridge. Some interesting recent books on applied micro-econometric methodology are *Mostly Harmless Econometrics: An Empiricist's Companion*, by Joshua Angrist and Jorn-Steffen Pischke; *Mastering 'Metrics: The Path from*

Cause to Effect, by Joshua Angrist and Jorn-Steffen Pischke; *Causal Inference for Statistics, Social, and Biomedical Sciences: An Introduction*, by Guido Imbens and Donald Rubin. For applications, I recommend (and will use a bit in the HW assignments) *The Practice of Econometrics: Classic and Contemporary*, by Ernst Berndt. A very good introduction to regression from a statistical (machine) learning perspective is [Introduction to Statistical Learning with Applications in R](#), by Gareth James, Daniella Witten, Trevor Hastie, and Robert Tibshirani.

Week	Topic	Reading
1-2	Conditional Expectations, Projections	Hansen, chapters 1 and 2
3	Algebra of Least Squares, Normal Regression, Maximum Likelihood	Hansen, chapters 3 and 5
4	Least Squares Regression	Hansen, chapter 4
5	Introduction to Asymptotics	Hansen, chapter 6
6	Asymptotics for Least Squares	Hansen, chapters 6 and 7
7	Restricted Estimation	Hansen, chapter 8
8	Hypothesis Testing	Hansen, chapter 9
9	Regression Extensions	Hansen, chapter 13
10	Statistical Learning	

Course Summary:

Date	Details	Due
Tue Jan 16, 2018	Assignment Homework 1	due by 3:29pm
Tue Jan 23, 2018	Assignment Homework 2	due by 3:29pm
Tue Jan 30, 2018	Assignment Homework 3	due by 3:29pm
Thu Feb 8, 2018	Assignment Midterm	due by 3:30pm
Fri Feb 9, 2018	Assignment Homework 4	due by 2:29pm

Date	Details	Due
Tue Feb 20, 2018	Assignment Homework 5	due by 3:29pm
Tue Feb 27, 2018	Assignment Homework 6	due by 3:29pm
Thu Mar 8, 2018	Assignment Homework 7	due by 3:29pm
Thu Mar 15, 2018	Assignment Final Exam	due by 4:30pm