Econ 629
Econometrics II
Professor Tim Halliday
Office Hours: By Appointment

Course Description:

This is the second part of the first-year graduate econometrics sequence at UH-Manoa. The course will cover four main topics: linear systems of equations, general M-estimation theory, specific examples of non-linear estimation (e.g. discrete choice, tobit, and selection models), and econometric issues in survey data. There will be 4 to 5 problem sets, one of which will be empirical. There will be one midterm exam sometime in October and a final.

Student Learning Objectives:

At the end of this course, students will:

- Be able to read technical econometrics articles in published in top journals
- Be able to derive the properties of simple estimators
- Understand why “pre-canned” programs in Stata actually work
- Write simple code in Stata

Texts:


Lecture notes are also available on Laulima.

Course Requirements:

The requirements of this course are 4-5 problem sets, a midterm exam and a final exam. Your grade will be determined by the following formula:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Problem Sets</td>
<td>1/3</td>
</tr>
<tr>
<td>Midterm + Final</td>
<td>2/3</td>
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The highest score among the midterm and final will be weighted 2/3 and the lowest will be weighted 1/3.
Outline (Tentative):

NOTE ALL TOPICS ARE CONTAINED IN MY LECTURE NOTES

Review of Gauss-Markov and Aitken’s Theorem (Lecture Notes)

Panel Data (Lecture Notes)

  Fixed Effects Estimation; Generalized Least Squares; Maximum Likelihood

Linear Systems of Equations (Wooldridge: Ch 7-9, Amemiya: Ch 6-7)

  System Ordinary Least Squares; Generalized Least Squares; Seemingly Unrelated Regression; Generalized Method of Moments; Three-Stage Least Squares; Overidentification Tests; Simultaneous Equations

MLE and GMM (Wooldridge: Ch 14, Lecture Notes)

  Identification; Consistency; Asymptotic Normality; Variance Estimation; Testing; Two-Step Estimators

Non-linear Models (Wooldridge: Ch 15-16, Amemiya: Ch 9-10)

  Linear Probability Models; Probits, Logits; Dynamic Binary Choice Models; Multinomial Choice Models; Ordered Choice Models; Censored Regression Models; Selection Models

Treatment Effects (W: Ch 18, Lecture Notes)

  Average Treatment Effects, Propensity Scores, Balancing Scores, Selection on Observables, Local Average Treatment Effects

Issues in Survey Data (Deaton: Ch 1-2 – if time permits)

  Descriptive Statistics; Weighting; Stratification; Clustering; Bootstrapping; Heteroskedasticity; Quantile Regression; Panel Data; Instrumental Variables and Natural Experiments; Repeated Cross Sections; Sample Size and Hypothesis Testing