2017

ECON 307-01 Empirical Analysis in Economics

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Office Hours: TR 1:00pm - 2:00pm
(Subject to Change)

Office: 328 Smith Hall
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Course Description
Econometrics combines economic theory, mathematical economics, and probability & statistics to obtain quantitative estimates for economic relationships. In this course, we will study the simple and multiple “Linear Regression Model” under the classical assumption. We study the “Ordinary Least Squares” estimators for the underlying parameters. Based on the sampling properties of these estimators, we construct confidence interval estimators, tests for hypotheses concerning the parameters, forecasts, and prediction intervals. We discuss the consequences of departures from the classical assumptions, namely, multicollinearity, heteroskedasticity, and autocorrelation. Finally, Simultaneous Equation Models will be discussed. We use the statistical software SAS to illustrate the application of these techniques to specific economic examples.

Pre-requisites for this course include Econ 305 (Microeconomic Analysis) and/or Econ 306 (Macroeconomic Analysis) and Stat 211 (Statistics for Business II). Students should be familiar with the basic theoretical concepts of probability, random variables (discrete and continuous), probability distribution functions, expected value operator, the Central Limit Theorem, confidence interval estimation, and hypothesis testing. Familiarity with basic concepts of statistical estimation and hypothesis testing is assumed.

WCB Mission Statement
“We educate students of business enabling them to improve organizations and society, consistent with the Jesuit tradition.”
**Required Text**


**Grading Policy**

The final grade will be determined via a mid-term exam, a final exam, and numerous homework assignments. Homework assignments will collectively count for 30% of your final grade. Late homework assignments will **not** be accepted under any circumstances. The mid-term exam will count for 35% of your final grade, and the final exam will count for 35% of your final grade. Unexcused absences from exams will result in a grade of zero. Makeup exams will be offered only if pre-arranged with me or under extraordinary (verifiable) circumstances whereby alternative arrangements cannot be made in advance.

I have listed the chapters of the assigned text that I intend to cover during the course of the semester. We will use certain problems and exercises from the text to illustrate the key concepts discussed in class. We will also use the software package SAS to illustrate the application of the statistical techniques to specific economic examples. I will offer an introductory session to familiarize you with SAS. For specific examples, I will provide SAS programs with detailed notes that will help you to learn to read the SAS code and the corresponding output. We will conduct statistical analysis based on the SAS output. Homework assignments based on SAS will be assigned during the course of the semester.

Your final grade will be based on the following scale:

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>≥ 93%</td>
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<tr>
<td>A-</td>
<td>&gt; 90%</td>
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<tr>
<td>B+</td>
<td>&gt; 87%</td>
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<td>B</td>
<td>≥ 83%</td>
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<td>C</td>
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<tr>
<td>C-</td>
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<td>D+</td>
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<td>D</td>
<td>&gt; 60%</td>
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<tr>
<td>F</td>
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If you contact me via email (**sen@xavier.edu**), kindly include your full name, and course & section number in all correspondence. I would be happy to see you in person during the assigned office hours or by appointment. If you have difficulty or concerns with this course, you may contact Dr. David Yi (Phone: 745-2933, Email: **yid@xavier.edu**, Office: 329 Smith Hall), Chair, Department of Economics, Williams College of Business.
Reading Schedule

Chapter 1: An Introduction to Econometrics
  Appendix A: A Review of Math Essentials
  Appendix B: Review of Probability Concepts

Chapter 2: The Simple Linear Regression Model

Chapter 3: Interval Estimation and Hypothesis Testing
  Appendix C: Review of Statistical Inference

Chapter 4: Prediction, Goodness-of-Fit, and Modeling Issues

Chapter 5: The Multiple Regression Model

Chapter 6: Further Inference in the Multiple Regression Model

Chapter 7: Nonlinear Relationships

Chapter 8: Heteroskedasticity

Chapter 10: Random Regressors and Moment Based Estimation

Chapter 11: Simultaneous Equations Models

Chapter 15: Panel Data Models

Chapter 16: Qualitative and Limited Dependent Variable Models