The purpose of this course is to develop basic econometric estimation and hypothesis testing tools necessary to analyze and interpret the empirical relevance of financial and other economic data. This requires developing statistical methods for estimation of population parameters and testing hypotheses about them using a sample of data drawn from the population distribution, under various assumptions regarding the true population relationship between the observable economic variables. The course will focus on the theoretical foundations of econometric analysis and strategies for applying these basic econometric methods in empirical finance and economics research. The course will cover estimation and hypothesis testing using the classic general linear regression model, combining sample and nonsample information, dummy variables, random coefficients, multicollinearity, and the basics of large sample theory, nonspherical disturbances, panel data, systems of equations, time-series, and their application.

There are a number of very good econometric software packages available. SAS (Rutgers has a site license) and LIMDEP (a student version comes with the Greene text referenced below) are two such packages that are widely used and will be briefly introduced in this course. While no specific software package is required for computations necessary to complete this course, the use of some computational software will be required to complete the requirements in this course.

The statistical methods covered in this course are a continuation and generalization of the material...
covered in *Linear Statistical Models* (26:960:577). The references will serve as your background material for the topics listed below. Students are encouraged to seek out whatever reference material facilitates their learning of each topic. For example, the topics in Griffiths, Hill, and Judge are also covered in Greene, but Greene presents a more concise and mathematical treatment. Related empirical articles from the economics and finance literature will also be assigned, as well as selected material from the books listed as references below.

**Course References**


* *Handbook of Econometrics* Volumes I-IV, North-Holland, various years.

* *Handbook of Applied Econometrics* Volumes I and II, Basil-Blackwell, various years.


* these books should be available in the bookstore. All of these books should be available in the library.

**Anticipated Schedule:**

<table>
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<tr>
<th>Date</th>
<th>Topics</th>
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<tr>
<td>Sept. 5</td>
<td>Introduction, Classical General Linear Regression Model</td>
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<tr>
<td>Sept. 12</td>
<td>Introduction to the GFMC and econometric software (SAS, LIMDEP)</td>
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<td>Classical General Linear Regression Model (continued)</td>
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<tr>
<td>Sept. 19</td>
<td>Inference &amp; Testing Hypotheses</td>
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<tr>
<td>Sept. 26</td>
<td>Combining Sample and Nonsample Information</td>
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<tr>
<td>Oct. 3</td>
<td>Dummy Variables and Random Coefficients</td>
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Oct. 10   Multicollinearity
Oct. 17   Large Sample Theory
Oct. 24   Nonspherical Disturbances
Oct. 31   Nonspherical Disturbances continued
Nov. 7    Introduction to Panel Data Models
Nov. 14   Introduction to Systems of Equations
Nov. 21   Introduction to Time Series
Dec. 5    Applications
Dec. 12   Course Review
          Final Exam

Other topics may be added as time permits.

**Evaluation of performance:** Students are responsible for all problems and problem sets assigned in class, which will be randomly collected and graded. Quizzes, graded problems and problem sets, and class participation will comprise 50% of your grade, and the final exam the other 50%. 