Course Syllabus:
INTRODUCTION TO ECONOMETRICS
UVM EC 200 A/SPRING 2011/RM: L309 LAFAYE/MWF: 3:00-3:50 PM

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Required Text:* 

Supplemental/Recommended Texts:** 
A Guide to Econometrics (MIT Press), Peter Kennedy; Econometric Models & Economic Forecasts (McGraw Hill), Robert S. Pindyck and Daniel L. Rudeinfeld; Introduction to Econometrics (Pearson), James H. Stock and Mark W. Watson; Essentials of Econometrics (Pearson), Damodar N. Gujarati and Dawn C. Porter

* The Studenmund text is available from third-party vendors but may not include software, matching page numbers and/or exercises as the edition available in UVM’s bookstore. The bundled edition (with a student copy of Eviews econometric software) should be available in UVM's bookstore by the start of classes. Eviews can be purchased separately, or you can use Gretl, an open source econometrics software solution, which is now available in L309 classroom computers and available for download to student laptops and desktops at no cost. This open-source software has versions available for Apple and Microsoft operating systems. Students are required to access either Gretl or Eviews in order to complete assignments and conduct research projects.

** There will be required readings from recommended texts as noted in the course content outline below. These readings will be made available at BlackBoard (BB), handed out in class, or placed on reserve in the library.
Course Objectives:

Econometric techniques and methods have a wide range of applications in today's world. The aim of this seminar course is to provide a solid foundation for applying econometric modeling in the area of business and economics. The course begins with an overview of regression analysis (and a definition of econometrics), with a look at the widely used regression technique known as Ordinary Least Squares (OLS) – both single and multivariate forms. Once key regression properties, coefficient estimation, and model specification are learned, the classical model assumptions are spelled out. This is followed by violations of classical model assumptions, and their implications and remedies. These include multicollinearity, serial correlation, and heteroscedasticity among others. The seminar course then moves into extensions of the basic model to time series models, followed by dummy dependent variable models and forecasting.

Learning Methodology:

Class lectures will follow closely the required text, Using Econometrics: A Practical Guide (5th edition), A.H. Studenmund. This edition provides all the essentials for an introduction to the key concepts and practical applications of econometrics. Gretl, an open source software solution, is available for free download, and is now installed on classroom computers. It will be utilized throughout the semester. As each chapter is completed, exercises will be assigned directly from the text and be available at BB. Datasets required for exercises will be provided by the instructor if not available from the author's website: http://www.aw-bc.com/studenmund. Supplemental readings from academic journals may be assigned along with readings from recommended/supplemental texts. Students will be required to present oral reports on simulated regression assignments at intervals specified by the instructor.

Course Outline: **

I. An Overview Regression Analysis: 1/18-1/28
   (Chap. 1) Studenmund, pp. 2-34; Also Gujarati (Chaps. 1 & 2) and Stock & Watson (Chap. 1.1-1.2); See BB for required exercise assignments and completion dates.

   A. What is econometrics and regression analysis?
   B. Using regression analysis to explain housing prices
   C. Economic questions and data structures
II. **Ordinary Least Squares (OLS): 1/31-2/11**  
(Chap. 2) Studenmund, pp. 35-65; Gujarati handout  
(Chaps. 3 & 4); Pindyck & Rubinfeld handout (Chap. 3); See BB for required exercise assignments and completion dates.

A. OLS Single independent variable models  
B. Multivariate OLS regression models  
C. Quality and overall fit of estimated models  
D. Beta-hats and standard errors of estimated coefficients

III. **Learning To Use Regression Analysis: 2/14-2/18**  
(Chap. 3) Studenmund, pp. 66-87; Additional supplemental readings TBA; See BB for required exercise assignments and completion dates.

A. Steps in applied regressions analysis  
B. Using regression analysis – Restaurant example

(Regression/research project topic selection deadline - 2/18)

IV. **The Classical Model: 2/21-2/25**  
(Chap. 4) Studenmund, pp. 88- 111; See BB for required exercise assignments and completion dates.

A. Classical assumptions in regression  
B. Sampling distribution of estimated coefficients  
C. OLS estimators and the Gauss-Markov Theorem

(Midterm exam – 3/2; Review Class 2/28)

V. **Hypothesis Testing: 3/4-3/16**  
(Chap. 5) Studenmund, pp. 112-160; Supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. What is hypothesis testing?  
B. t-tests and limitations of t-tests  
C. Examples of t-tests

VI. **Choosing an Independent Variable: 3/18-3/23**  
(Chap. 6) Studenmund, pp. 161-202; Supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Omitted and irrelevant variables  
B. Specification criteria and related issues  
C. Example: Choosing independent variables
VII. Choosing a Functional Form (Specification II): 3/25-3/30
(Chap. 7) Studenmund, pp. 203-244; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Constant term: use and interpretation
B. Alternative equation functional forms
C. Lagged and dummy variables (including slope dummies)

VIII. Multicollinearity: 4/1-4/4
(Chap. 8) Studenmund, pp. 245-312; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Types of multicollinearity
B. Detection of multicollinearity
C. Remedies for multicollinearity

IX. Serial Correlation: 4/6-4/11
(Chap. 9) Studenmund, pp. 313-345; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Pure vs. impure serial correlation
B. Consequences of serial correlation
C. Detection and remedies for serial correlation

X. Heteroscedasticity: 4/13-4/15
(Chap. 10) Studenmund, pp. 346-376; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Pure vs. impure heteroscedasticity
B. Testing for, and consequences of, heteroscedasticity
C. Remedies for heteroscedasticity

(Regression/research project data files and model specification deadline - 3/23)
(Chap. 12) Studenmund, pp. 420-446; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Dynamic models
B. Serial correlation and dynamic models
C. Granger causality and spurious correlation
D. Issues related to non-stationarity

XII. Dummy Dependent Variable Techniques: 4/22-4/25
(Chap. 13) Studenmund, pp. 447-464; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. Linear probability models
B. Binomial logit models
C. Additional dummy variable techniques

XIII. Forecasting 4/27/4/29
(Chap. 15) Studenmund, pp. 511-566; Additional excel files and supplemental reading handouts to be provided; See BB for required exercise assignments and completion dates.

A. What is forecasting?
B. Forecasting problems and issues
C. Conditional forecasting
D. Forecasting confidence intervals

(Final exam – See below for date/location; please note, project papers are due on the last day of classes, May 2, not during the final exam period.)

*** The instructor reserves the right to alter the course outline and course readings and requirements at any time.

Grading Policy: Grades will be based on a midterm exam (20%), a non-cumulative final exam (30%), exercise assignments (20%), and regression project and paper (30%). The instructor, without advance notice, may give an occasional quiz (short-answer type) based on assigned readings. It is the responsibility of the student to be prepared for each class in terms of readings.
Final Exam Date/Location: MON 05/09/2011 10:30-1:15 PM LAFAYE L309

Attendance Expectations: You are acquired to attend every class and will be held responsible for material presented in class. Exams will be based on readings/exercises and material presented in lectures, as well as any other content presented in class. If you miss a class, it is your responsibility to acquire the material presented and assigned in that class.

Email Policy: The instructor cannot guarantee a timely response to e-mail inquiries/communication in terms of any course requirement deadlines (inside of 48 hours), although the instructor does try to respond to e-mail inquiries as quickly as possible.

UVM Code of Academic Integrity:

Violations of the UVM's Code of Academic Integrity are any acts which would have the effect of unfairly promoting or enhancing one's academic standing within the entire community of learners. Such acts are serious offenses and will not be tolerated. Any suspected violations of the Code will be forwarded to the Center for Student Ethics & Standards.

Go to [http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf](http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf) to read the Code of Academic Integrity.

UVM Diversity Statement:

The University of Vermont holds that diversity and academic excellence are inseparable. An excellent university, particularly one that is a public land grant, needs to actively seek to provide access to all students who can excel at the institution, without respect to their backgrounds and circumstances, including, among other differences, those of race, color, gender, gender identity or expression, sexual orientation, national and ethnic origin, socio-economic status, cultural and/or geographic background, religious belief, age, and disability. There is, moreover, a compelling national interest in a higher education sector rich in diversity and opportunity, and a clear state interest in making the educational benefits of this diversity and opportunity accessible to all.