ECONOMETRICS
ECON 342
Syllabus
Spring 2014

Instructor. Dr. Keith S. Evans, Hepburn 204, 315-229-5436, kevans@stlawu.edu
Office hours. M 2:30 p.m. - 3:30 p.m., T 9:00 a.m. - 11:00 a.m., F 9:00 a.m. - 10:00 a.m.
Unavailable hours. Tuesdays after 1:00 p.m., Thursdays, weekends, and after 5:00 p.m.
Class Meeting. MW 12:50 p.m. - 02:20 p.m., Hepburn 20
Teaching Assistants. Kyle Benzing and Payton Stahler

Text. Assigned readings come from a combination of sources: textbooks, journals, newspapers, and magazines. I will maintain a list of these readings on Sakai.


Course Objective. Econometrics is based on the application of statistical methods for estimating economic relationships, testing economic theories, and the evaluation and implementation of policy. Econometrics is distinct from mathematical statistics in that the former is primarily concerned with evaluating observational, rather than experimental data. While econometrics is often used to make macroeconomic forecasts, research also use econometric methods to evaluate causal relationships such as the effect of technology on classroom performance, the impact of hydraulic fracturing (“hydro-fracking”) on housing prices, and the effects of incarceration rates on crime just to name a few. In fact, the vast majority of empirical research in economics utilizes econometrics.

Prerequisite Knowledge. No class is an island! Prerequisite courses for ECON 342 include ECON 200 (or MATH 113), ECON 251, and ECON 252. Knowledge acquired in these courses will be applied in this class. As such, reviewing your class notes and major concepts and themes from these course is recommended to ensure understanding of new material that builds upon these ideas.

Lab and STATA. Throughout the semester we will be applying the tools discussed in class through the use of the STATA statistical package. STATA is a complete, integrated statistical package that provides everything you need for data analysis, data management, and graphics. It is currently one of the mode widely use statistical packages among economist and many of the SLU faculty conduct their empirical work using STATA. Familiarity with STATA is a crucial element of this course and each of your problem sets will ask you to utilize STATA. Furthermore, you will also complete an empirical project in this course and will be asked to turn in your STATA programs and output with your paper.

The path to access STATA through the SLU network is:

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\\saint\apps\netapps\depart\econ\Stata10
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Class Website. The class website is available through Sakai. When you are enrolled in Sakai, you are able to access announcements, handouts, assignments, answer keys, and your grades. I will tell you when I post new material buy you are responsible for checking it regularly.

There is also a textbook website.

http://www.palgrave.com/economics/gujarati/students/index.html

It would be a good idea to familiarize yourself with the website since it has some useful tool for students (such as chapter summaries and datasets).

Course Requirements, Exam Dates, and Grading. Grades for the course are based on 2 semester exams, a cumulative finals exam, 8-10 problem sets, a group empirical project, and in-class participation exercises. Your grade in the course is determined as follows:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Semester exams</td>
<td>40%</td>
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<tr>
<td>Problem sets</td>
<td>10%</td>
</tr>
<tr>
<td>Lab, quizzes, participation</td>
<td>10%</td>
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<tr>
<td>Empirical project</td>
<td>20%</td>
</tr>
<tr>
<td>Final exam</td>
<td>20%</td>
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<tr>
<td><strong>Total</strong></td>
<td>100%</td>
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Exams (60%). The semester test focuses on specific sections of the course, while the final is cumulative (covers all of the material in the course).

Make-up Exams/Late Policy. There are NO make-up exams. If you must miss one of the midterm exams, you must let me know in advance and your other exam will be given extra weight. Students who must miss an exam for an SLU sanctioned even may make arrangements with me in advance to take the test. Late assignments are marked down a letter grade for each day late. Grades on assignments turned in late on the the day they are due (e.g., more than an hour after the end of class) will be reduced one-third of a letter grade. Once the answer key is posted online, NO CREDIT will be given to the late assignment. No exceptions will be made.

Problem Sets (10%). Problem sets will be assigned often throughout the semester. It is a vital part of learning to use tools developed in class and each assignment will involve problem-solving and STATA programming.

Participation. Participation will be based on (1) 5+ in-class quizzes, (2) solving book problems on the blackboard, (3) in-class group exercise, and (4) work submitted during in-class lab sessions. Further details will be announced in class.
**Empirical Project (20%).** You and a partner will conduct an empirical project, write an 8-10 page paper, and give a brief presentation on one of several recommended topics. However, if you would prefer to come up with an idea or your own, I am available to assist in formalizing an idea or finding data. The paper should include separate sections for each of the following: Abstract, Introduction, Data Description, Conceptual Framework, Empirical Methods, Results, Conclusion, and References. Detailed instructions will be discussed in class.

**Grading.** Given your final percentage score, I will map this to the grade you will receive in the course (see Table 1). Exam scores may be adjusted to correct for any miscalculation (of the difficulty of the exam) on my part. As such, your final grade will be partially affected by the performance of your peers.

<table>
<thead>
<tr>
<th>Table 1: Grading Scheme</th>
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<tbody>
<tr>
<td>Grade</td>
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<tr>
<td>4.00</td>
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<tr>
<td>3.75</td>
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<td>2.75</td>
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<td>2.50</td>
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Student Learning Outcomes.

Develop the ability to explain core econometric concepts.

- Derive ordinary least squares (OLS) estimators.
- Discuss properties of OLS estimators in small and large sample size.
- Examine causes and consequences of relaxing the assumptions behind the OLS method. Know the limitations of models and the of data sources.

Demonstrate the ability to use the econometric methods.

- Calculate and interpret the mean and standard deviation of a variable. Define the difference between independent and dependent variables.
- Estimate and interpret the relationship between economic variables.
- Formulate empirically testable hypotheses.
- Describe and critically assess statistical analysis of other researchers.

Tentative Course Outline. The lecture schedule and other material are subject to change to accommodate the flow of the course.

1. Introduction and review
   - Introduction (G1.1-G1.2, W1)
   - Review of probability of statistics (G Appendix 2, W Appendices A, B, C)
2. Basic regression model
   - Simple regression model (G2, W2)
3. Multivariate regression analysis
   - Regression with multiple variables (W3)
4. Specification and functional form
   - Functional form (G2)
   - Qualitative variables (G3, W7)
5. Other issues: Diagnostics
   - Multicollinearity (G4)
   - Heteroskedasticity (G5, W8)
   - Omitted/Instrumental variables (G7, W15)
   - Endogeneity (G19)
6. Advanced topics
   - Limited dependent variable models (G8, W17)
   - Simple panel data methods (G17, W13)

This is a living course. That is, it is designed to be adaptive to the needs and interests of the students. As such, it is each student’s responsibility to actively engage in class and introduce new topics for the course.
All policies and material outlined in this syllabus are subject to change at my discretion. Tentative schedule for exams.

- Exam 1 – **Wednesday, February 26, at 7 p.m.**
- Exam 2 – **Wednesday, April 16, at 7 p.m.**
- Final (comprehensive) – **Wednesday, May 7, 08:30 - 11:30 a.m.**

**Electronics and texting.** You will be given a short (5-7 minute break) during class. This is your chance to use the restrooms and check your phone and text messages. Otherwise, please resist the urge to use any electronic devices in class (except for class work). It is my experience that laptops and other electronic devices provide more distraction that benefits for individual students and for the class as a whole. (There is also scholarly research that supports this conclusion. One study showed that students who spent class sessions multi-tasking had similar GPAs to those students who did not attend class at all! Other students in the class reported laptops and other electronic devises as the most significant impediment to their own learning.) For further reading on this, see the following paper.

**Classroom conduct.** Arriving late, leaving early, and talking during class can be disruptive to the instructor and to other students and should be minimized. Any form of behavior deemed to be inappropriate to the instructor will not be tolerated. A student will be advised by the instructor that his/her behavior is inappropriate and, if necessary, the matter will be turned over to the Dean of Students.

**Academic Honor Policy.** The academic honor policy outlined in the Constitution of the Academic Honor Council will be enforced in this class. An online copy of the constitution can be found at [http://www.stlawu.edu/sites/default/files/resource/AcademicHonorPolicy.pdf](http://www.stlawu.edu/sites/default/files/resource/AcademicHonorPolicy.pdf). If you have any questions, concerns, or require more information regarding this policy, contact the Dean’s office at 315-229-5993.

**Calculator.** For exams, you will need a **simple** calculator. Graphing calculators, programmable calculators, and cell phones are not allowed. Sharing calculators is prohibited during exams.

**Students with special needs.** Students with special needs who require specific examination-related or other course-related accommodations should contact the Office of Academic Services for Students with Special Needs at 315-229-5104/5537. This office will provide the students with a letter for the instructor that will specify any recommended accommodations.

**Quantitative Resource Center (QRC).** The QRC offers mentoring in all quantitative areas. The webpage for the QRC is [http://www.stlawu.edu/qrc](http://www.stlawu.edu/qrc). The QRC is located in Valentine 125 and will be open for students to drop-by.
The WORD Studio. You will be writing an original empirical research paper and presenting it to the class. The Munn Center for Rhetoric and Communication maintains The WORD studios in ODY Library – a place to get feedback from peers on assignments in Writing, Oral communications, Research, and Design of visual projects. You can come for a consolation to plan a paper or presentations; to find ways to improve the ideas, organizations, and style of a draft; to videotape and review a presentation rehearsal; to design and run through PowerPoint slides, and more. You may use The WORD Studio for consolations on assignments for any of your courses.

Last updated: January 20, 2014