COURSE DETAILS
Course: ECON 6295 Applied Microeconometrics
Section: 10
CRN: 77839
Semester: Spring 2020
Time: Tuesdays, 6:10 – 8:40PM
Location: Smith 120

INSTRUCTOR
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GRADUATE ASSISTANTS
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COURSE DESCRIPTION
This course covers empirical techniques commonly used in applied microeconomic research and analysis. With an emphasis on causal inference and application, this course will broaden students’ research design skills with new/extended coverage of econometric methods like regression discontinuity design, instrumental variables, panel methods, duration models, selection models, and error clustering techniques, among other topics.

PREREQUISITES
Probability and Statistics for Economics (Econ 6374); Mathematical Methods for Economics (Econ 6300); Applied Econometrics (ECON 6375) is recommended as a prerequisite, but may be taken as a corequisite.
REQUIRED TEXTS


Note: Econometrics textbooks are often used by applied economists (as researchers, analysts, consultants, etc.) for years. They are excellent references. Hold onto these!

STATISTICAL SOFTWARE

We will use Stata, which is available at the campus computing centers. You may purchase a student copy at a discounted price (recommended). See the information here: [http://www.stata.com/order/new/edu/gradplans/student-pricing/](http://www.stata.com/order/new/edu/gradplans/student-pricing/).

COURSE OBJECTIVES

The course is designed to prepare students for independent research and analysis using empirical methods commonly employed by economists in the applied microeconomic academic literature and in government/industry. Because the emphasis of this course is on application, students will be exposed to both textbook exposition of these methods and novel applications of each method using papers (and data) from the academic literature.

LEARNING OUTCOMES

Students will build proficiency in statistical software and empirical microeconomic research design. After the successful completion of this course, students will be able to:

- Independently formulate a coherent research design that uses observational data and microeconometric methods to test empirical questions
- Demonstrate proficiency using statistical software (e.g., Stata) to conduct microeconomic empirical analysis, applying the techniques learned in this course
- Demonstrate an understanding of (and limits to) causal inference methods commonly used in the applied microeconomics literature

AVERAGE MINIMUM AMOUNT OF INDEPENDENT, OUT-OF-CLASS, LEARNING EXPECTED PER WEEK

In a 15-week semester, including exam week, you should expect to spend a minimum of 4 hours a week for each hour of instruction. For a 2½ hour course, you should expect to study a minimum of 10 hours outside of class each week.

GRADING

- Midterm Examination 25%
- Final Examination 30%
- 3 Problem Sets 15%
- Assignments 20%
- Class Attendance/Participation 10%
CLASS POLICIES

Exams
The midterm exam will be administered in-class and will include all relevant cumulative course material. Concepts in this course often build on each other, so for this reason the final exam will also be cumulative in nature, although questions will be more heavily focused on the second half of the course. The midterm exam will contribute 25% and the final exam will contribute 30% of the total course grade.

Problem Sets
There will be 3 problem sets. Problem sets will be distributed one week prior to their due date. The purpose of the problem sets is to provide you with the opportunity to practice and apply what you learned in classes and to prepare for the midterm and final exam. You can work with other classmates on the problem sets, however, you should write up your answers independently from other classmates. Verbatim answers will be detected and will be penalized. The problem sets will contribute 15% of the total course grade.

Attendance and Participation
Each class will be centered on a discussion of the week’s assigned readings. Students are expected to complete the readings before coming to class and should plan to participate actively in class discussion. Attendance and participation in class discussions will contribute 10% of the total course grade.

Make Up Exam Policy
There will be no make-up assignments given. If you have a foreseeable absence, then please notify your instructor as potential arrangements can be made. The lowest assignment grade will be dropped. This should buffer against the occasional unusual circumstance that may cause an unforeseen situation, or just a bad day.

UNIVERSITY POLICY ON OBSERVANCE OF RELIGIOUS HOLIDAYS
In accordance with University policy, should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance. For details and policy, see: students.gwu.edu/accommodations-religious-holidays.

ACADEMIC INTEGRITY CODE
Academic dishonesty is defined as cheating of any kind, including misrepresenting one’s own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For details and the complete code, see: studentconduct.gwu.edu/code-academic-integrity
SUPPORT FOR STUDENTS OUTSIDE THE CLASSROOM

Disability Support Services (DSS) 202-994-8250
Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office in Rome Hall, 801 22nd St., NW, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information, see https://disabilitysupport.gwu.edu/

Students must arrange with the DSS office well in advance of needing the service.

Counseling and Psychological Services 202-994-5300
GW’s Colonial Health Center offers counseling and psychological services, supporting mental health and personal development by collaborating directly with students to overcome challenges and difficulties that may interfere with academic, emotional, and personal success. For additional information, see healthcenter.gwu.edu/counseling-and-psychological-services.

SAFETY AND SECURITY
- In an emergency: call GWPD 202-994-6111 or 911
- For situation-specific actions: review the Emergency Response Handbook: safety.gwu.edu/emergency-response-handbook
- In an active violence situation: Get Out, Hide Out or Take Out: go.gwu.edu/shooterprep
- Stay informed: https://safety.gwu.edu/stay-informed
# Tentative Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Deadlines</th>
<th>Topics Covered</th>
<th>Readings</th>
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| 1 (Jan. 14) |                | Course Introduction  
- Introduction to econometrics, causality, research design in applied microeconomics | Required Readings:  
Wooldridge Ch. 1  
Angrist/Pischke Ch. 1 & 2  
Optional Readings:  
| 2 (Jan. 21) |                | Introduction to applied microeconomic research  
- How to carry out empirical research  
- Causal inference in practice  
- Overview of applied micro methods | Required Readings:  
Wooldridge Ch. 19  
| 3 (Jan. 28) |                | Regression (OLS) review, Econometric interpretation, and Stata review, Part 1 | Required Readings:  
Wooldridge Ch. 2 & 3  
Cameron & Trivedi Ch. 3 |
| 4 (Feb. 4) |                | Regression (OLS) review, Econometric interpretation, and Stata review, Part 2 | Required Readings:  
Angrist & Pischke Ch. 3  
Wooldridge Ch. 4 & 7  
Optional:  
| 5 (Feb. 11) | 1st Problem Set Due | Panel Data Methods, Part 1  
- Data basics  
- Why panel data?  
- Interpretation | Required Readings:  
Wooldridge Ch. 13  
Cameron & Trivedi Ch. 8 |
| 6 (Feb. 18) |                | Panel Data Methods, Part 2  
- Fixed Effects Models  
- Random Effects Models | Required Readings:  
Wooldridge Ch. 14  
| Week 7 (Feb. 25) | Panel Data Methods, Part 3  
- Angrist & Pischke Ch. 5  
| Week 8 (Mar. 3) | Midterm Exam |  |
| Week 9 (Mar. 10) | Regression Discontinuity Design, Part 1 | Required Readings:  
- Angrist & Pischke Ch. 6  
| Spring Break – No Classes Mar. 17 |  |  |
| Week 10 (Mar. 24) | Regression Discontinuity Design, Part 2 | Required Readings:  
| Week 11 (Mar. 31) | 2nd Problem Set Due | Instrumental Variables, Part 1 | Required Readings:  
| | | Angrist & Pischke Ch. 6  
| | | Cameron & Trivedi Ch. 6  
| | | Wooldridge Ch. 15  

| Week 12 (Apr. 7) | Instrumental Variables, Part 2 | Required Readings:  

| Week 13 (Apr. 14) | Robustness, Clustering, Standard Error Issues | Required Readings:  
| | | Angrist & Pischke Ch. 8  
| | | Cameron & Trivedi Ch. 13  
| | | Optional:  

| Week 14 (Apr. 21) | Duration/Hazard Models and Survival Analysis | Optional Readings:  
<table>
<thead>
<tr>
<th>Week 15 (Apr. 28)</th>
<th>3rd Problem Set Due</th>
<th>Additional Methods</th>
<th>Required Readings:</th>
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<td>Quantile regression</td>
<td>Angrist &amp; Pischke Ch. 7</td>
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<td>Final Exam – Tues. May 5</td>
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