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ECNS 560.01: Advanced Econometrics

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Syllabus

Advanced Econometrics
Economics 560
LA 401

Instructor: Amanda Dawsey
amanda.dawsey@umontana.edu

Office: LA 408A, 243-2926
Office hours: MWF 10 – 11 AM

Course Description:

The purpose of this course is to provide students with the tools required for the analysis of economic data. This course begins with the underlying assumptions of the OLS model, and we will analyze the conditions that determine whether the OLS model does or does not perform well. We will cover alternative statistical techniques for testing economic theories when using panels, or data with limited dependent variables, endogeneity issues, or is subject to sample selection. These alternatives include probit and tobit models, fixed- and random-effect models, and instrumental variable models.

Learning Objectives:

Students who successfully complete this course will understand

- When and when not to use an OLS model, and why
- How to use OLS and methods for instrumental variables, panel data, and limited dependent variables to estimate causal effects and make predictions
- How to use Stata to estimate economic models and to create comprehensible output
- What makes a good research question, what economic data is available, and how to write and talk about economic analysis

Materials:

- **Required Textbook:** *Introductory Econometrics* by Jeffrey Wooldridge, 6th edition (earlier editions are fine)
- **Software:** Stata, which is available in LA 401 and FA 210. You may purchase Stata for home use, but it is not a requirement. A USB flash drive can be helpful for transferring work, but UM Box or other online storage solutions can be just as convenient.
- **Course Website:** You will need to check Moodle regularly: <http://umonline.umn.edu/>
- **Prerequisites:** ECNS 403 or the consent of the instructor. Undergraduates must have senior standing, a GPA of 3.00 or better, and the consent of the instructor.

Grading:

Homework	15%
Participation	10%
Exams (March 6, April 29)	30%
Lab work	15%
Empirical project and presentation	30%

Class Policies:

Remember that your learning experience and the quality of each class will depend on your level of preparation. This means doing the assigned readings and reviewing your notes before each class. The exams will cover both the assigned readings and what we talk about, so it is crucial that you do the readings and come to class consistently. If you miss a class, it is your responsibility to get notes, announcements, assignments, etc from your classmates.

Homework:

Problem sets will be distributed at least one week before they are due, and they will not be accepted after the assigned date. They will include some questions on theory, some mathematical exercises, and some practice using Stata and data work. All assignments should be typed, and graphs and tables appended when necessary. I will drop your lowest score.

Labs:

During our weekly lab meetings, you will work through exercises using Stata, with help and guidance from me and your fellow students. You must complete the day's exercise and show me the results in order to get full credit for that day's lab meeting.

Participation:

Your participation grade is based on your class attendance and your participation in class discussions. Some of these discussions will focus on reading assignments, which will be posted on Moodle.

Exams:

Make sure you have no conflicts with the exam dates. Examinations must be taken at the assigned time or a zero will be recorded. Exceptions to this policy will only be granted for serious circumstances that are **beyond your control**. Arrangements for an exception must be made as soon as possible and in advance if at all possible. You should be prepared to provide evidence that the situation is indeed beyond your control.

Accessibility:

This course is accessible to and usable by otherwise qualified students with disabilities. To request reasonable program modifications, please come and talk to me, and make sure that you're in touch with Disability Services (243-2243) in Lommasson Center 154.

Academic Integrity:

I expect you to know and abide by the Honor Code in all matters pertaining to this course. Violations of this code will be pursued in accordance with the code.

Course Schedule: A tentative outline of when we will cover which subjects.

	Date	Assignment	Topic	Textbook
Week 1	Jan 11		Overview, Notation, Matrices	Chapter 1
Week 2	Jan 14		Multiple Regression	Chapter 3
	Jan 16			
	Jan 18	Stata Resources		
Week 3	Jan 21	MLK Day	No Class	
	Jan 23	Homework 1 Due		
	Jan 25	Almond (2011)		
Week 4	Jan 28		Inference	Chapter 4
	Jan 30	Homework 2 Due		
	Feb 1	Wooldridge, Ch. 19		
Week 5	Feb 4		Further issues	Chapter 6 & 7
	Feb 6	Homework 3 Due		
	Feb 8	Article 2		
Week 6	Feb 11		Specification	Chapter 8 & 9
	Feb 13	Homework 4 Due		
	Feb 15	Article 3, Topic & data		
Week 7	Feb 18	Presidents' Day	No Class	
	Feb 20	Homework 5 Due	Panels: Pooled OLS	Chapter 13
	Feb 22	Article 4		
Week 8	Feb 25		Panels: Fixed and Random Effects	Chapter 14
	Feb 27	Homework 6 Due		
	Mar 1	Article 5		
Week 9	Mar 4		Catch up and review	
	Mar 6	Midterm		
	Mar 8	Article 6		
Week 10	Mar 11		Instrumental Variables	Chapter 15
	Mar 13	Homework 7 Due		
	Mar 15	Article 7		
Week 11	Mar 18		Limited Dependent Variables	Chapter 17
	Mar 20	Homework 8 Due		
	Mar 22	Article 8, Project Proposal		
Week 12		Spring Break	No Class	
Week 14	Apr 1			
	Apr 3	Homework 9 Due		
	Apr 5	Article 9		
Week 15	Apr 8		Program Evaluation	
	Apr 10	Homework 10 Due		
	Apr 12	Article 10		
Week 16	Apr 15	Presentations		
	Apr 17	Presentations		
	Apr 19			
Week 17	Apr 22		Catch up and review	
	Apr 24	Final Project Due		
	Apr 26			
Monday, April 29 Final Exam 3:20 – 5:20 PM				