

AREC\ECON 735
Spring 2016

Econometric Theory II: Core Topics (details on the panel data module will follow)

TIME: 9:30-10:45 Tuesday-Thursday Natural Resources 106

Instructor: Marco Costanigro

Contact:

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Office Hours 1:30-3:00 Wed (Clark B-326) and by appointment (PM hours)

Texts: **Required:** Microeconometrics: Methods and Applications by A.C Cameron and P. K Trivedi Cambridge University Press. 2005. ISBN: 0521848059

Suggested: Econometrics Analysis (sixth edition) by William Greene. Prentice Hall. ISBN: 0135132452

Suggested: Microeconometrics Using Stata, Revised Edition. by A.C Cameron and P. K Trivedi ISBN: 1597180734

Objectives:

1. Expand students' fundamental knowledge of econometric core methods beyond the classical linear model. In addition to technical proficiency, students will gain an understanding of the implications of the assumptions inherent to alternative estimators and modeling approaches; and the ability to use theory, sample and out of sample information to make appropriate methodological decisions
2. Providing the foundation necessary to independently consult, comprehend and use advanced econometric models not explicitly treated in class.

Homework Exercises

I will assign 4-5 group homework exercises over the first 10 weeks of course. You may work in groups of *up to 3 people*. If you choose to work in a group, which is highly encouraged, please submit only one copy of each assignment with the names of the participants on the front.

Computer Software:

No specific econometric software is mandated, but homework assignments will imply the joint use of "canned" software (e.g. STATA) and a matrix environment software (e.g. Gauss or MATA). While I will provide some basic guidance, I expect students to use manuals and online help to self-teach the use of the chosen statistical software.

Course Evaluation:

As a default, the grades are as assigned as follows: A = $\geq 90\%$; B = 80-89%; C = 70-79%; D = 60-69%; F = $< 60\%$. Pluses and minuses will be used at the discretion of the instructor.

Core Topics (2 credits):

2/3 of the final score determined as follow

Group Homework Exercises	30%
Exam I	35%
Exam II	35%

Course Policies and Exceptions

1. **Homework exercises** are due on the stated due date. Beyond that, no assignments will be accepted.
2. If you have a **documented disability** that requires special arrangements, please let the instructor know immediately at the beginning of the course.
3. **Academic integrity** is expected. This course will adhere to the CSU Academic Integrity Policy as found on the Student' Responsibilities page of the [CSU General Catalog](#) and in the [Student Conduct Code](#). At a minimum, violations will result in a grading penalty in this course and a report to the Office of Conflict Resolution and Student Conduct Services.
4. Always show appropriate **respect** for your instructor and fellow students. This means, among other things, that **cell phones** should be muted prior to class.

Tentative course Timeline_(subject to change at the discretion of the instructor)

Course	Week	Date	Class	Topic	Notes	Homework
AREC/ECON735 Econometric II	1	1/19/16	1	Introduction and Properties of Estimators	1	Warmup hW
	1	1/21/16	2	Extremum estimator and NLS	2	
	2	1/26/16	3	Extremum estimator and NLS	2	HW1
	2	1/28/16	4	Maximum Likelihood Estimation	3	
	3	2/2/16	5	Maximum Likelihood Estimation	3	
	3	2/4/16	6	Maximum Likelihood Estimation	3	HW2
	4	2/9/16	7	Quasi-MLE and Sandwich Estimator	4	
	4	2/11/16	8	Quasi-MLE and Sandwich Estimator	4	
	5	2/16/16	9	Quasi-MLE and Sandwich Estimator	4	
	5	2/18/16	10	Numerical optimization	5	
	6	2/23/16	11	Exam 1		
	6	2/25/16	12	Numerical optimization	5	
	7	3/1/16	13	Methods of Moments	6	
	7	3/3/16	14	Methods of Moments	6	
	8	3/8/16	15	Methods of Moments	6	HW3
	8	3/10/16	16	Wald, LM, LR tests	7	
	9	3/15/16	-			
	9	3/17/16	-			
	10	3/22/16	17	Power, sample size , pitmann-drift (if time allows)	7	
	10	3/24/16	18	Nonparametrics	8	
11	3/29/16	19	Nonparametrics and concluding remarks	8	HW4	
11	3/31/16	20	Exam 2 (Final 735)			

Table of references

Topic	C&T	Micro with Stata	Greene
Estimation Frameworks in Econometrics			Chapter 14
Properties of Estimators (MJM E.2.1.4-5-6-7)			
Extremum Estimators	5.3 (124)		
Nonlinear Least Squares	5.8.1 (151)	10.3.5 (325)	
Maximum Likelihood	5.6		
Numerical Methods		11	
Testing	7		
GMM	6		
Nonparametrics	9		