Syllabus
Applied Statistics and Econometrics II
Econ-GA 1102.01, NYU Economics
Spring 2018

Instructor	: **Ercan Karadas**
Lectures	: R 6:20 - 8:20 PM, Silver 414
Lab	: R 8:25 - 10:25 PM, Silver 414
Office Hours	: By appointment
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Course Description: This course is the second part of a two semester sequence designed to teach applied statistics and econometric techniques for quantitative research and analysis. The course is structures in three units. In the first unit, the course covers the main estimation methods in econometrics, including Instrumental Variables, Generalized Regression Model, General Methods of Moments and Maximum Likelihood Estimation. In the second and third units, we will discuss selected topics in macroeconometrics and microeconometrics, respectively.

Readings:

- **[DM]** *Econometric Theory and Methods* by R. Davidson and J.G. MacKinnon, Oxford University Press, 2003
- **[G]** *Econometric Analysis* by W. Greene, 7th ed., Prentice Hall
- **[P]** *Time Series and Panel Data Econometrics* by M. Hashem Pesaran, Oxford University Press, 2015
- **[LN]** *Lecture Notes*
- Papers: occasionally I will post the original references that the lecture notes or applications are based on.

Students are expected to have completed the Readings ahead of class to facilitate class participation and discussion. You need to take this seriously to be able to make the most out of this class as we will cover a lot of advanced material.

Programming: The course will make heavy use of the statistical software R. Software related issues and questions should be resolved in the lab sessions.

Attendance: Class and Lab attendance and participation are expected and required. If you anticipate to be unable to attend either the Class or the Lab you need to notify me ASAP. Use of laptops and cellphone during class is strictly prohibited.

Project: You are going to submit an applied econometric research project that relates to the material covered in the course. You will work on the project in groups of 2 students and present the findings of your research to the class at the final lecture(s) of the semester. Further information regarding the project will be provided after the spring break.

Problem Sets: There will be weekly problem sets during the semester.

Course Page: NYU Classes is a major tool for this course. Folders for each topic listed on the schedule with slides and readings will be posted as well as announcements and any supplementary reading. You are expected to login to NYU Classes between classes.

Evaluation

Test 1	20%	Project	20%
Test 2	20%	Problem Sets	20%
Test 3	20%		

Weekly Course Schedule

Week	Topics	Readings
1/25	Course Introduction	
2/1	Large Sample Theory	**[LN]** **[G]** Appx. D
2/8	Int. to R: Basics	**[LN]**
2/15	Int. to R: Loops and Functions	**[LN]**
2/22	Instrumental Variables	**[LN]** **[G]** Ch. 8.1-8.4
3/1	Generalized Method of Moments	**[LN]** **[G]** Ch. 13
3/8	**Test 1**	
3/15	No Class (Spring Recess)	
3/22	Maximum Likelihood Estimation	**[LN]** **[G]** Ch. 14.1-14.7
3/29	Univariate Time Series Models: ARMA Models	**[LN]** **[G]** Ch. 20
4/5	Univariate Time Series Models: ARCH and GARCH	**[LN]** **[G]** Ch. 20
4/12	Multivariate Time Series Models: Cointegration and VAR	**[LN]** **[G]** Ch. 21
4/19	**Test 2**	
4/26	Models with Limited Dependent Variables: Binary, Multiresponse Models, Tobit	**[LN]** **[G]** Ch 17.1-17.3, Ch 19
5/3	Panel Data Models: Fixed and Random Effects Models	**[LN]** **[G]** Ch. 11.1-11.5
5/10	**Test 3**	