Econometrics I (20844) (21134)

Degree/study: AD/E Grau , IBE
Course: 2
Term: third
Number of ECTS credits: 5.0 credits
Hours of student's dedication: 100 hours
Language or languages of instruction: English and Spanish
Professors: Christian Fons-Rosen and Stephan Litschig

1. Presentation of the subject

Econometrics I teaches how to make quantitative inferences about causal effects using cross-sectional experimental and observational data. Most of the course focuses on multiple regression analysis as a way to mitigate bias, particularly in observational studies.

2. Competences to be attained

This first econometrics course will allow the student to be familiarised with the basic foundations of regression analysis and its principal problems. All this, combined with a rigorous analytical perspective and a wide array of practical examples, solved with the help of standard econometric packages.

3. Contents

Review of Statistics, Estimation and Inference for Bivariate Regression, Estimation and Inference for Multiple Regression, Non-linear Regression Models, Reverse Causality Bias, Measurement Error Bias, Sample Selection Bias, Correlated Errors.

4. Assessment

June examination: Attendance: 15%; Problem Sets: 15%; Final Exam: 70%.

The mínimum final grade in the June exam to pass the course is 50% of the points, i.e. 5 points over a total of 10 points.

September examination: Final Exam 100%.

There will be weekly problem sets involving at least one empirical exercise. The problem sets have a weight of 15% in the course grade. The data for the problem sets are available on the course website. You should hand in completed homework assignments on the due date at the beginning of the theory session. No electronic submissions are accepted. Assignments handed in after the deadline will receive no credit.

Students are encouraged to work with others in the class on their problem sets. **The maximum group size is 3**. **You will hand in 1 solution per group and the group will receive the same grade**. Please list the name(s) of those with whom you worked on your assignment. Also, please append your Stata "log" files to your assignments.

You will get full credit for making a "reasonable" attempt at solving the questions, even if your answers turn out to be incomplete or false. Homework grades will be available in Moodle at the end of the week in which you hand in your homework. Check your grades regularly to make sure they are reported correctly. The homework grades become final two weeks from the date they have come available online.

Your attendance at the practical sessions will be recorded and counts 15% towards the course grade. Solutions will be discussed during the practical sessions. At the beginning of the session we will hand back your homeworks so you can check whether your answers were correct. During the practical sessions you will also be given the opportunity to make "extra" points (or lose them) depending on the quality of your answers to homework-related questions.

5. Bibliography and teaching resources

5.1. Basic bibliography

J.H. Stock and M.W. Watson, *Introduction to Econometrics* (second edition, US or international), Addison-Wesley, 2007. The first edition is fine as well but the second edition is recommended. The textbook is available at steep discounts from various online retailers, such as www.abebooks.com. We strongly advise you to buy this textbook, not only for this course, but for Econometrics II and other courses and not least for future reference. There is no Spanish version of the textbook.

6. Methodology

Combination of lectures (theory classes) and practical sessions involving theoretical and data exercises.

The course statistical software is Stata, which is available on UPF computers. You should consult our Stata guide to familiarize yourself with this software.

7. Activities Planning

				Readings:	**Problem Sets:**	
Class #	**Date**	**Day**	**Topic**	**SW Ch. #**	**Posted**	**Due**
1			Introduction and review of statistics	2,3		
2			Review of statistics	2,3	PS#1	
			Introduction to Stata			
3			Bivariate regression I: Estimation	4		
4			Bivariate regression II: Estimation	4	PS#2	PS#1

	Practical session PS#1			
5	Bivariate regression III: Inference	5	PS#3	PS#2
	Practical session PS#2			
6	Bivariate regression IV: Inference	5		
7	Multiple regression I: Estimation	6	PS#4	PS#3
	Practical session PS#3			
8	Multiple regression II: Estimation	6		
9	Multiple regressions III: Inference	7	PS#5	PS#4
	Practical session PS#4			
10	Multiple regression IV: Inference	7		
11	Multiple regression V: Inference	7	PS#6	PS#5
	Practical session PS#5			
12	Nonlinear regression models I	8		
13	Nonlinear regression models II	8	PS#7	PS#6
	Practical session PS#6			
14	Assessing regression studies I	9		
15	Assessing regression studies II	9		PS#7
	Practical session PS#7			
16	Autocorrelation I			
17	Autocorrelation II			
18	Review/Optional topic			
	No practical sessions			