

# Econometrics I (21134)

**Degree/study:** IBE

**Course:** 2

**Term:** third

**Number of ECTS credits:** 5.0 credits

**Hours of student's dedication:** 125 hours

**Language or languages of instruction:** English

**Professors:** Majid Al Sadoon

## 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 minimum 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.

July 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.

Students who cannot participate during the term because they are involved in an exchange program may attend the June or July examination sessions. Their course grade will be based 100% on the Final Exam. Students who fail the June exam may take the July exam and their grade will be based 100% on the final exam.

## 5. Bibliography and teaching resources

### 5.1. Basic bibliography

J.H. Stock and M.W. Watson, *Introduction to Econometrics* (second or third edition, US or international), Addison-Wesley. The second edition is fine as well but the third edition is recommended. The textbook is available at steep discounts from various online retailers, such as [www.abebooks.com](http://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. The third edition is also available in Spanish, for example on Amazon.

## 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

<u>Class #</u>	<u>Date</u>	<u>Day</u>	<u>Topic</u>	<u>Readings:</u>	<u>Problem Sets:</u>	
				<u>SW Ch. #</u>	<u>Posted</u>	<u>Due</u>
1	April 11	Thu	Introduction and review of statistics	2,3		
2	April 12	Fri	Review of statistics	2,3	PS#1	
	01/04/17	Wed	Practical sessions: Stata Tutorial			
3	April 18	Thu	Bivariate regression I: Estimation	4		
4	April 19	Fri	Bivariate regression II: Estimation	4	PS#2	PS#1
	April 24	Wed	Practical sessions: PS#1 Solutions			
5	April 25	Thu	Bivariate regression III: Inference	5		
6	April 26	Fri	Bivariate regression IV: Inference	5	PS#3	PS#2
	May 1	Wed	No practical session: holiday			

7	May 2	Thu	Multiple regression I: Estimation	6		
8	May 3	Fri	Multiple regression II: Estimation	6		
	May 8	Wed	Practical sessions: PS#2 Solutions			
9	May 9	Thu	Multiple regression I: Inference	7		
10	May 10	Fri	Multiple regression II: Inference	7	PS#4	PS#3
	May 15	Wed	Practical sessions: PS#3 Solutions			
11	May 16	Thu	Multiple regression III: Inference	7		
12	May 17	Fri	Multiple regression IV: Inference	7	PS#5	PS#4
	May 22	Wed	Practical sessions: PS#4 Solutions			
13	May 23	Thu	Nonlinear regression models I	8		
14	May 24	Fri	Nonlinear regression models II	8	PS#6	PS#5
	May 29	Wed	Practical sessions: PS#5 Solutions			
15	May 30	Thu	Assessing regression studies I	9		
16	May 31	Fri	Assessing regression studies II	9	PS#7	PS#6
	June 5	Wed	Practical sessions: PS#6 Solutions			
17	June 6	Thu	Autocorrelation I			
18	June 7	Fri	Autocorrelation II			PS#7
	June 12	Wed	Practical sessions: PS#7 Solutions			
19	June 13	Thu	Review			
20	June 14	Fri	Review			