DESCRIPTION OF INDIVIDUAL COURSE UNIT

Statistical Methods in Economics and Business

1. GENERAL DESCRIPTION

Course Title	**Statistical Methods in Economics and Business**
Faculty	Facultad de Ciencias Económicas y Empresariales
General Classification	Diploma in European Business and Economics
Course code	5602
Type of course (Core/Compulsory/Elective)	Optional
Number of credits expressed as student workload (ECTS)	5
Year of Course / Semester	2010/2011 · Second semester
Web	
Language of Instruction	English
Teaching Methods	At the beginning of each week, participants receive the relevant material in addition to answers to exercises from the previous session. During the week, participants are expected to go over the course material and work through exercises. Discussion among participants is encouraged. Also, lectures and mainly active form of learning via the composition of a term paper or a group project under the close supervision of the lecturer will be required.

Department	10	Economics
Area of Knowledge		Statistical Methods
Teaching Group		Statistics
Course coordinator	Dr. José María Sarabia	
Other teaching professors	Dra. Marta Pascual	

2. PRE-REQUISITES AND ADVICE

This course is recommended for students of Social Sciences and Applied Mathematics and Statistics who want a wide background in statistical methodology. Some previous experience with statistics is recommended but not required.

3. COURSE OBJECTIVES

Technical Competence:
Statistical methods in Business and Economics introduce the student to statistical theory and methods. In particular, it equips the student with a wide range of statistical techniques and reinforces the student's ability to solve statistical problems related with business and economics.

Methodological Competence:
The objective of this module is to broaden student's knowledge on statistical measurements of economic phenomena and statistical methods. This undergraduate course includes the following aspects: Probability and Statistical Inference. Point and Interval Estimation. The Maximum Likelihood Method. Hypothesis Testing. Likelihood-ratio Tests and Bayesian methods. Nonparametric methods. Analysis of variance, regression analysis and correlation. Chi-square goodness of fit tests.

Social Competence:
Students are expected to attend tutorials, seminars and write a term paper or a group project.

Personal Skills:
Students are introduced to and gain experience in a variety of computational tools that are useful for economic analysis.

4. TEACHING METHODS	
ACTIVITIES	**HOURS (PER SEMESTER)**
ACTIVITIES IN PRESENCE	
ATTENDANCE	
• Theoretical Lessons (TE)	10
• Practical Lessons (PA)	10
• Seminar Attendance (PL)	15
Subtotal	35
SCHEDULED TIME WITH THE LECTURER	
• Tutorials (TU)	6
• Examinations (EV)	4
Subtotal	10
Total activities in presence (A+B)	**45**
GUIDED ACTIVITIES	
• Group Work (TG)	20
• Tasks and Assignments (TA)	60
Total Guided Activities	**80**
TOTAL AMOUNT OF WORK MEASURED IN HOURS	**125**

5. COURSE CONTENTS							
THEORETICAL AND PRACTICAL COURSE CONTENTS	**TE**	**PA**	**PL**	**TU**	**EV**	**TG**	**TA**
MODULE 1: Estimation Methods	**4**	**4**	**5**	**2**	**1,5**	**7**	**27**
1.- Introduction to statistical inference	1	1	1	0,5	0,5	1	9
2.- Point estimation of parameters	2	2	2	1	0,5	3	9
3.- Interval estimation	1	1	2	0,5	0,5	3	9
MODULE 2: Hypothesis Testing	**4**	**4**	**5**	**2**	**1,5**	**7**	**18**
1.- Introduction to Hypothesis testing	2	2	2	1	0,5	3	9
2.- Chi-square goodness of fit tests	2	2	3	1	1	4	9
MODULE 3: Statistical Methods applied to Economics and Business	**2**	**2**	**5**	**2**	**1**	**6**	**14**
1.- The classical linear regression model	1	1	3	1	0,5	3	7
2.- Analysis of variance	1	1	2	1	0,5	3	7
TOTAL AMOUNT OF WORK MEASURED IN HOURS	**10**	**10**	**15**	**6**	**4**	**20**	**60**

6. ASSESSMENT METHODS

PERCENTAGE IN THE FINAL MARKS	%
Continuous Evaluation	
Tests and practical exercises done during the study period.	40
Final essay demonstrating the student's ability to analyse a problem related to Economics and Business Studies using statistical methods. Students choose among a list of given topics. They can also propose their own topic, which has to be agreed on by the professor. The essay should include an economic-based background of the problem, data-process and interpretation of statistical analysis results.	40
Subtotal	**80**
Final Exam	
Final Exam.	**20**
TOTAL	**100**

FINAL OBSERVATIONS

Class Attendance (80% minimum) is compulsory for those students who wish to be assessed by means of the continuous evaluation option.

There will only be a final exam for those students who do NOT make use of the continuous evaluation option.

7. RECOMMENDED READING

CORE TEXTS

- Mendenhall, William; Sincich, T. (1996). *A Second Course in Statistics: Regression Analysis*. Upper Saddle River, New Jersey: Prentice Hall.

- Mendenhall, William; Wackerly, D.D., Scheaffer, R.L. (1990). *Mathematical Statistics with Applications.* Boston: PWS-Kent Pub. Co., 4th edition.

- Mendenhall, William; Reinmuth, J.W.; Beaver, R. (1982). *Statistics for Management and Economics.* Boston: PWS-Kent Pub. Co., 6th edition.

ADDITIONAL READING

Articles from newspapers and the Internet. Students will also have access to software that can perform basic statistical analysis. Thus, computers are used throughout the course.

8. SOFTWARE

PROGRAM NAME	FACULTY/ROOM/FLOOR/TIMETABLE
Excel	**Facultad de CCEE y EE. Room 9. Floor 0. Monday: From 10.00 a.m. to 12.00 a.m. Tuesday: From 8.00 a.m. to 10.00 a.m.**