COURSE SYLLABUS

Academic year 2011-2012

1. COURSE DESCRIPTION

Degree:	
Double Degree:	**Derecho y Finanzas y Contabilidad** **(English teaching)**
Course:	**STATISTICS FOR FINANCE I** **(Estadística para Finanzas I - English teaching)**
Module:	**Basic Training in Business and Economic Sciences**
Department:	**Economics, Quantitative Methods and Economic History**
Academic Year:	**2011-2012**
Term:	**Second term**
Total Credits:	**6**
Year:	**2nd**
Type of Course:	**Basic**
Course Language:	**English**

Teaching model:	**C1**	
a. **General/background:**		**50%**
b. **Theory-into-practice/developmental knowledge-building**		**50%**
c. **Guided Academic Activities:**		

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2. TEACHING TEAM INFORMATION

2.1. Course coordinator

D. Alfredo García Hernández-Díaz (agarher@upo.es, 954 34 8379)

D. José Manuel Ramírez Hurtado (jmramhur@upo.es, 954 34 9171)

2.2. Teachers

Name:	Antonio Félix de Amores Hernández
Faculty:	Faculty of Business Administration
Departament:	Economics, Quantitative Methods and Economic History
Academic Area:	Quantitative Methods
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3. ACADEMIC CONTEXT

3.1. Course Description and Objectives

This subject intends to initiate students into basic notions about Descriptive Statistics, Probability Calculus and Statistical Inference. The first will include: the development of statistical analysis of real business and economic data, the knowledge of the most popular index numbers (consumer price index, industrial production index, etc.), the introduction to the classic analysis of time series. The latter will include: probability calculus, which intends to obtain a sufficient theoretical basis to develop probabilistic models and inferential methods in the future. Finally, some considerations about main statistical sources of economic data, as its location and searching are studied complementarily. Basic objectives of the subject are to teach students theoretical and practical foundations of statistical analysis and to teach the usage of modern computer techniques (SPSS, Excel) applied in Statistics. During the subjects constant reference to real business and economic problems will be made, with the objective of assimilating easy and intuitively studied concepts. Another aspect that will be looked at will be the organization and sources of public statistics.

3.2. Contribution to the Training Plan
This module intends to provide the student with the tools for data analisys that let them assess and forecast the behaviour of economic, social and business events. Such learning is completed with suitable IT tools.

3.3. Recommendations or Prerequisites
Basic knowledge of first year Mathematics is needed.

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4. SKILLS

4.1 Degree Skills Developed during this Course

Systematic Skills:
- Self-learning
- Creativity
- Ability to adapt to new environments
- Initiative and entrepreneurship
- Motivation for quality

Personal Skills:
- Team work
- Ability for personal relations
- Critical and logic reasoning
- Ethical compromise in work
- Working under pressure

Instrumental Skills:
- Analysis and synthesis
- Organization and planning
- Usage of Information Technology
- Searching for statistical information
- Defining and solving specific problems about business and economic topics
- Decision Making

4.2. Module Skills Developed during this Course

Systematic Skills:
- Self-learning
- Creativity
- Ability to adapt to new environments
- Initiative and entrepreneurship
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Personal Skills:
- Team work
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Instrumental Skills:
• Analysis and synthesis
• Organization and planning
• Usage of Information Technology
• Searching for statistical information
• Defining and solving specific problems about business and economic topics
• Decision Making

4.3. Course-specific Skills
• Knowing and applying basic statistical concepts to real finance and accounting data

5. COURSE CONTENT (COURSE TOPICS)

Unit 1: ONE-DIMENSIONAL FREQUENCY DISTRIBUTIONS.
1.   Statistics: Definition & Objectives. Basic Concepts. Tasks in any statistical research.
2.   Frequency Distribution for a characteristic. Graphic Representations
3.   Measures of Central & non-Central.
4.   Measures of Tendency, Dispersion and Shape.
5.   Concentration Measurements: the Gini's Index & the Lorentz's Curve.

Unit 2: JOINT FREQUENCY DISTRIBUTIONS. REGRESSION.
1.   Joint Frequency Distributions for two characteristics: Correlation and Contingency Tables.
2.   Functional and Statistical Dependence.
3.   Linear Simple Regression and Correlation. Introduction to Linear Multiple Regression.
4.   Non linear fitting.
5.   Study of the association of qualitative variables.

Unit 3: RATES AND INDEX NUMBERS AND TIME SERIES CLASSICAL ANALYSIS IN FINANCE AND ACCOUNTING.
1.   Computation of variations, rates and cumulative average rates.
2.   Index numbers: simple and aggregate. Properties.
3.   Price Indexes. Quantity Indexes. Properties.
4.   Base Change: Renovation and enlace of series of index numbers.
5.   Value Indexes and deflation.
6.   Consumer Price Index (CPI). Base Change 2001.
7.   Time Series: concept and definition of components.
8.   Trend analysis and cyclical behaviour.
9.   Official Sources of Economic Surveys: IEA, INE, EUROSTAT and other organisms.

Unit 4: RANDOM EXPERIMENTS AND EVENTS. PROBABILITY.
1.   Random phenomena and events.
2.   Counting Tools: Combinatory.
3.   Probability.
4.   Conditional Probability. Bayes' Theorem.

Unit 5: RANDOM VARIABLES. PROBABILITY MODELS.
1.   Probability Distributions of one-dimensional discrete and continuous. Measures of position, dispersion and shape. Change in scale and in origin. Standardization of a

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random.

2.   Two-dimensional Random Variable. Marginal and conditional distributions. Expectation and covariance. Linear Correlation Coefficient. Independence of Random Variables.

3.   Probabilistic models of discrete variables: Bernouilli, Binomial, Geometric, Negative Binomial, Hipergeometric and Posisson.

6.   METHODOLOGY AND RESOURCES

For the application of the European Credit Transfer System (ECTS), it will be adopted an organization of teaching-learninig based in two types:

1.   General Teaching (group of at most 60 students): Showing the basic concepts of the subjectin lectures, conferences, A/V display and other in class activities suitable for large groups. This part accounts for 50% fo the sessions.

2.   Practical Teaching (groups of at most 20 students): Theoretical-practical sessions. It will constitute a complement for GT sessions where concepts will be further studied and exercises will be solved to reinforce them. Students presentations and assesments will also take place. It includes 3 computer labs to learn the usage of specific software (SPSS/PAWS y MS Excel). This part accounts for the 50% of the subject.

Material resources to be used will be:

- Materials produced by lecturers of the course: Theory notes , lists of problems, lists of problems to be solved with the computer, computer labs guides, etc.
- Room for 60 students
- Room for 20 students
- Computer lab for 20 workstations

In all the previously metioned rooms should be avaliable a blackboard, video projector and screen and a computer with internet conection.

Computer resources to be used will be:

- Software: PowerPoint; MS Excel; SPSS.

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7. ASSESSMENT

The assessment for this subject will be based on a set of activities on a continuous, formative assessment basis. Each activity will have a different weighting on the final mark, set according to complexity, effort needed and time devoted by the student.

All teaching activities (GT and PT) will be assessed in the following way:

General Teaching Assessment (final exam):
The final exam will take place at the end of the term. It will consist of a set of theoretical questions, theoretical practical exercises and problems related to subject contents. Students must show the acquisition of worked competences. The weighting of this part of the assessment on the final mark is 50%.

Practical Teaching Assessment (continuous assessment):
There will be periodical tests to evaluate the progress of the student as well as individual or group projects. Attendance will be taken into account. This part is exclusively under a continuous assessment scheme and the weighting of it on the final mark is 30%. It can not be retaken.

Three assessed computer sessions will take place. This part will account for the 20% of the final mark (5% during the sessions and 15% in a final exam).The objective is showing the usage of common statistical software packages (SPSS, MS Excel).

Minimum scores:
General Teaching Assessment: 1,5 points out of 5
Computer Labs Assessment: 1 point out of 2

To pass the subject the student must obtain at least 5 points out of 10, between scores in General Teaching (50%) and Practical Teaching (50%).

Resit exam (July):
The resit exam will take place in July. General Teaching (50%) will be assessed again and a retake of computer labs (20%) will be allowed for those who fail at the continuous assessment and at the retake. The final mark will be the mark in the resit exam plus the mark in the continuous assessment (30%) that can not be retaken.

Mobility students:
The students attending any official student-mobility program (Sócrates-Erasmus, SICUE-Séneca, Atlanticus...) and that are enrolled in the module outside their mobility contracts, can retake, for the final mark, the share related to the continuous assessment by a taking a specific additional exam. Such students must communicate this by writing

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to the lecturers of the module before November 30th. Students not fulfilling this deadline can only apply with the support of the academic coordinator of their mobility contract.

8. BIBLIOGRAPHY

GENERAL:
GROEBNER, DF. SHANNON, PW. FRY, PC. SMITH KD. Business Statistics. Pearson-PrenticeHall, 6th edition, 2004.
ACZEL, AD. SOUNDERPANDIAN, J. Complete Bussiness Statistics. McGraww-Hill Irwin, 7th edition, 2009
CASAS SÁNCHEZ, J.M.; SANTOS PEÑAS, J.: Introducción a la Estadística para Economía y Administración y Dirección de Empresas. Ed. Centro de Estudios Ramón Areces, S.A., 2002.
CASAS SÁNCHEZ, J.M. y COLS.: Problemas de estadística : descriptiva, probabilidad e inferencia. Ed. Pirámide, 1998.

SPECÍFIC:
Statistics For Business And Economics: Student Solutions Manual, 2006
Statistics for Managers Using Excel and Student CD Package, Prentice Hall, 2008
Statistics for Business and Economics and Student CD, Prentice Hall, 2006
Statistics for Business & Economics, Prentice Hall, 2008
Business Statistics by Example, Prentice Hall, 1996
Basic Business Statistics, Prentice Hall, 2009
ActivStats, Addison-Wesley
ActivStats for Business Statistics, Addison-Wesley, 2010
Business Statistics, Addison-Wesley, 2010
Flash Review: Introduction to Statistics, Addison-Wesley, 2002
How to Lie With Statistics, W. W. Norton & Company, 1993
The Complete Idiot's Guide to Statistics, Alpha, 2007
The Cambridge Dictionary of Statistics, Cambridge University press,
Applied Statistics in Business and Economics with CDRom, , 2007
Basic Statistics Using Excel and MegaStat w Student CD, , 2008
Statistical Techniques in Business and Economics, McGraw-Hill Irwin, 2008
Statistical Techniques in Business and Economics with Student CD, McGraw-Hill Irwin, 2008
Introduction to Statistics for Executives, McGraw-Hill Irwin,
Statistical Techniques in Business and Economics with Student CD-Rom, McGraw-Hill Irwin, 2005
Business and Financial Statistics using Minitab 12 and Microsoft Excel 97, World Scientific Publishing Co, 2000
Against all odds: Inside Statistics (DVD), W.H. Freeman and Company, 2006
Introduction to the Practice of Statistics (textbook), W.H. Freeman and Company, 2006

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Introduction to the Practice of Statistics (study guide), W.H. Freeman and Company, 1992
Statistical Reasoning for Everyday Life, Addison Wesley, 2008
The Cartoon Guide to Statistics, Collins Reference, 1993
Statistics in a Nutshell: A Desktop Quick Reference, O'Reilly Media, Inc., , 2008

Statistical sources:
1. Instituto de Estadística de Andalucía: www.juntadeandalucia.es/institutodeestadistica
2. Instituto Nacional de Estadística: www.ine.es
3. Oficina Estadística de la Unión Europea: www.europa.es.int/comm/eurostat

Databases:
1. ABI/Informa Global Ed.
2. Business Source Premier.
3. Econ-Lit.
4. International Statistical Yearbook.