STATISTICS FOR ECONOMICS AND FINANCE (L1022)

COURSE HANDBOOK

AUTUMN TERM 2010

Course Lecturer: Dr. Ana Fernandes,

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Office Hours: Tuesday 1300-1400

Lectures: Tuesdays 1000-1100, A002.

Classes: Students will be allocated to a seminar class. See your teaching schedule on Sussex Direct to check your group. Please do not change groups without permission from the Economics Programme Co-ordinators in the BMEc School Office Mantell 2B4.

Workshops: There are three Excel computing workshops in weeks 2, 5 and 7 in room PEV1-1B5. See your teaching schedule on Sussex Direct to check your group. Please attend the corresponding group you are assigned to.

COURSE AIMS

The aim of the course is to familiarise students with basic statistical techniques and their application to the field of Economics. Part of this objective is achieved through the use of the EXCEL spreadsheet package. Topics include summarising and plotting data, basic probability theory, testing hypotheses, correlation analysis and regression.

Intended Learning Outcomes of the Course

On completion of this course students will:

- be able to demonstrate a knowledge of quantitative techniques appropriate to the study of applied economics
- be able to demonstrate a knowledge of how to conduct and evaluate empirical work
- be able to carry out empirical work using appropriate techniques
- be able to use appropriate computer software for statistical analysis of economic data.

COURSE ORGANISATION

The course consists of nine one-hour lectures and nine one-hour classes. Lectures begin on Tuesday of week 1 and continue through to week 9 inclusive, with a revision session in week 10. Classes begin in week

2 and continue through to week 10 inclusive. There are three Excel workshops on weeks 2, 5 and 7. Outline lecture notes, class exercises and other material are available via StudyDirect.

COURSE ATTENDANCE

Attendance at classes and workshops is compulsory and a register will be taken each week. Attendance and participation in classes are recorded on the termly course report forms, which will be consulted by any tutor who is asked to provide a reference for you.

CLASS EXERCISES

Each class will focus on exercises covering material from the week's lecture. All students are expected to prepare work relating to the exercise sheets in advance of the classes. Students will be asked to present their work in class. Outline solutions will be available on-line.

ASSESSMENT

The Statistics for Economists course is formally assessed via an unseen exam paper and coursework. Please note that these marks contribute to your Final degree classification.

The unseen examination takes place in the Summer term and forms 70% of the assessment for this course. Previous examination papers are available in the Main Library or can be downloaded from the University web-site (http://www.sussex.ac.uk/USIS/pastexams/pastexam.cfm) but students are reminded that the course syllabus has evolved relative to previous years.

The coursework element has a weight of 30% in the overall assessment for this course. The coursework is a 2000 word project report, applying techniques learned in the course to a small dataset, using Excel. More details are provided at the end of the document.

The deadline for submission of the coursework is:

4.00 pm – Thursday Week 1 – Spring Term .

Hand in location TBA - this will be advised well before this deadline.

Please note that two copies must be submitted together with a Coursework submission sheet.

Students are advised to consult the *Handbook for Candidates* http://www.sussex.ac.uk/studenthandbook/index.php in regard to providing evidence for late or non-submission of coursework. **Students are also reminded that all work must be their own – penalties for collusion can be severe. See the handbook for details.**

COURSE EVALUATION

Students are encouraged to provide feedback to me anytime during the course but all students will be asked to complete student evaluation questionnaires at the end of the course in the Autumn Term.

READING LIST AND COURSE OUTLINE

Barrow, M. (2005) *Statistics for Economics, Accounting and Business Studies*, 4th edition (Longman).

COURSE SCHEDULE				
Week	**Topic**	**Readings**	**Class Exercise**	**Workshop**
One	**Introduction: what *is* statistics?** Summarising data	MB – Ch 1	No seminar this week, but read through Ch1 and check you follow it!	
Two	**Probability 1** The Normal distribution	MB – Ch 2 and 3	Class Ex 1. (Room PEV1-1B5 this week)	W1. Summarising data using graphical and numerical methods.
Three	**Confidence intervals** Using estimates for inference	MB – Ch 4	Class Ex 2.	
Four	**Hypothesis testing 1** Testing claims about a statistic from a single sample	MB – Ch 5	Class Ex 3.	
Five	**Correlation Analysis** Testing for association between variables	MB – Ch 7	Class Ex 4. (Room PEV1-1B5 this week)	W2. Probability: using the normal distribution to calculate probabilities
Six	**Simple Linear Regression** Looking for relationships	MB – Ch 7	Class Ex 5	
Seven	**Extensions to regression:** Inference and multiple regression	MB – Ch 7 and 8	Class Ex 6 (Room PEV1-1B5 this week)	W3. Scatter plots, correlation and regression.
Eight	**Hypothesis testing 2** Testing claims about differences between samples	MB – Ch 5	Class Ex 7	
Nine	**Probability 2** The F and Chi-squared distributions	MB – Ch 6	Class Ex 8	
Ten	**Revision session**		Class Ex 9	

ASSESSED COURSEWORK PROJECT

Aims and Objectives

The statistics project is undertaken by all students on this course and forms part of your assessment. A major objective of the project is to provide you with the quantitative skills and technical knowledge necessary to access empirical literature that will be covered in Economics courses in Years Two and Three. **The word limit for the project is 2000 words.**

Project Topics

Each student can choose a project from a set of three topics which have been chosen to ensure that a key component of the statistical analysis in the project relates to correlation and regression analysis. The list of project titles is as follows:

Project 1: The Relationship between Criminal Activity, Deterrence and the Unemployment Rate in England and Wales - 1981.

Project 2: The Determinants of Female Labour Force Participation in the USA - 1980

Project 3: The Determinants of Household Poverty in the USA – 1980

Documents and data for each project are on Study Direct.

Each project has its own document file labelled proj##.doc (where ## denotes 01 to 03). You should browse through the projects and then download your choice. There is very little difference in difficulty between the projects: each project asks you to plot the variables, calculate correlation coefficients, estimate a regression model. Your choice should therefore be guided by your interests.

Problems experienced in downloading project files from SD should be reported to me immediately. You are advised to download your project file early so as to allow for potential computing problems.

Doing the Project

Each project document file contains some data and a brief description of the topic and work to be undertaken with some suggestions on how to proceed. You will need to plan your work carefully and keep your results very organised. Remember to save your work regularly! Once you have downloaded your project file, you will need to load the data into EXCEL [copy and paste it in rather than re-type so as to avoid typo mistakes; you may need to use the "Data, Text to Columns" on the Excel main toolbar to make sure everything is in the right column] and use the commands and functions in Excel to undertake the statistical analysis.

Follow the instructions in your project document, providing full and clear answers. Try to interpret your answers – which means giving the statistical and, where appropriate, the economic interpretation. If a question asks you to test for statistical significance or to construct a confidence interval but does not give the specify the significance level etc, choose one: conventional levels are 5% and 1% for significance levels and 95% and 99% for confidence intervals.

Writing up the project report

Your work should be written up in a report style, with an introduction explaining what the project is about and what data you are using. You need to introduce first what you plan to do, then do it, and then at the end summarise what you have done.

Examiners will reward projects that contain a careful description - using definitions and summary statistics - of the data used, a sound and judicious application of statistical techniques, a clear and accurate interpretation of the results provided, and a relevant conclusion and summary.

Other tips for a good report.

- Use numbered headings and sub-headings with titles that mean something and help the reader follow what you are doing
- Number all tables and graphs, and refer to them in the text, with a discussion of each table and graph.
- Read through your work at least once. Do you think it is easy to read? Would another student be able to follow and understand what you are doing?
- A few spelling mistakes are forgivable – we all make typos now and again but don't overdo it. Use the spell-checker on your pc, and check that the corrections that Word has made are the right ones– three is nothin wurse than tiring to reed soemthing with speeding mistakes!!