APPLIES TO ACADEMIC YEAR 2003/2004

EXC 2304 Statistics

Program
N/A

Responsible for the course
Fred Wenstøp

Department
Strategy and Logistics

Term
According to study plan

ECTS Credits
6

Objective
The objective of the course is to teach students:

- to collect and process quantitative information in an appropriate manner, including the use of computer-based tools.
- to relate cognitively to uncertainty in order to improve their ability to distinguish between randomness and systematic effects.
- the principles of statistical inference to enable them to understand and evaluate research and development work (reports, etc.) and to communicate with experts.
- to understand printouts of common tests with standard statistical software
- practice in independent problem-solving.
- practical and appropriate data analysis and presentation.
- to use standard statistical analysis to acquire knowledge.

In addition, the course in statistics provides the necessary foundation for other courses in the Business Candidate Program and the Bachelor of Business Administration Program.

Prerequisites
No particular prerequisites.

Compulsory literature
Newbold, Paul, W.L. Carlson and B.M. Thorne. 2003. *Statistics for business and economics* . 5th ed. Upper Saddle River, N.J.: Prentice Hall

Recommended literature

Course outline

1. Overview - Chapter 1
2. Describing data - Chapter 2
3. Descriptive relationships - Chapter 3
4. Probability - Chapter 4
5. Discrete random variables and probability distributions - Chapter 5, except 5.6
6. Continuous random variables and probability distributions - Chapter 6, except 6.5
7. Sampling and sampling distributions - Chapter 7, except 7.4
8. Estimation - Chapter 8, except 8.5
9. Hypothesis testing - Chapter 9, except 9.5 and 9.8
10. Simple regression - Chapter 10
11. Multiple regression - Chapter 11
12. Non-parametric statistics - Chapter 13
13. Contingency tables - Chapter 14, except 14.1 and 14.2
14. Additional topics in sampling - Chapter 18

Computer-based tools

The college will provide further details. Active use of software in the course will facilitate learning and save time in answering assignments. It will also enhance graphical presentations. Moreover, practice in the use of spreadsheet is an asset in itself. Consequently, students are recommended to use software both during the course and for the analysis of the case for the final examination.

Recommended Software: A user should be able to use several types of software, depending on the purpose. We recommend Excel, PhStat and SPSS. It is not required that students shall use SPSS, but that they ca interpret SPSS printouts in the textbook at the exam. For those interested in SPSS, see for instance Foster, Jeremy J. 2001. Data analysis using SPSS for Windows versions 8 to 10: A beginners guide. 2nd ed. London: Sage .
Excel is a general purpose spreadsheet with powerful built-in statistical functions that can perform most of the relevant types of calculations. PhStat is used with Excel and included in the textbook.
SPSS is a powerful professional statistical package with functions that also cover more advanced courses in statistics. It is available from BI at a discount price.

Course structure
The course is based on 42 teaching hours with lectures in which selected, central topics are dealt with.Cases are used to throw light on the theory. The presentation will be supplemented with the use of software by simulating random variation, graphic presentation, problem-solving and a summary of each chapter. The central educational objective is to teach students how to acquire information with statistical methods. The lectures, therefore, will be practical in orientation, and the discussion of statistics as a method to acquire knowledge is as important as technical skills. Emphasis is therefore placed on the students' ability to read reports that contain listings such as they will find when employing standard software.
Students are expected to study independently the parts of the textbook that are not dealt with in the lectures, and thus acquire a coherent and full understanding of statistics as defined in the syllabus. It is important that the students start to use computational tools early in the course, so that they have acquired confidence with their chosen tool in good time before the final exam. In addition to 42 hours of lectures, there will be 12 hours of training in the use of computer software, in the beginning middle and end of the semester

Evaluation
A three-hour individual multiple-choice examination concludes the course. In their preparations for the exam students are expected to have read the syllabus well, to have worked seriously on the case assignment, and to be prepared to interpret SPSS printouts. The case assignment is handed out two weeks before the exam. The chapters indicated under the course outline above are required at the 3 hour exam.

Evaluation code(s)
EXC 23041 - multiple-choice exam which accounts for 100% of the grade in EXC 2304, 6 ECTS credits

Aids at the examination
All aids are allowed, including the case assignment and the student's own case solution.

Makeup exam
A re-sit is held in connection with the next scheduled exam in the course.