EXC 2904 Statistics

Programme
Bachelor in Business Administration (1. year)

Responsible for the course

Department
Department of Economics

Term
According to study plan

ECTS Credits
7,5

Language of instruction
English

Introduction
This course gives an introduction to statistics. Main themes are descriptive statistics, probability and hypothesis testing. Formulas and formal procedures play an important role, but the emphasis is on developing statistical literacy and critical thinking.

Learning outcome
Acquired Knowledge:
- To understand the relevance of statistical analysis in economics and marketing
- Knowledge of basic concepts and overview of statistics
- Understanding the difference between a population and a sample
- Understand what a random variable and a statistical model is
- Understand that statistical methods are based on assumptions that must be checked
- Understand what estimation and hypothesis testing is about
- To be able to reflect on the role of randomness
- To be acquainted with the statistical and mathematical notations used in statistics

Acquired Skill:
- To be able to discern randomness from real underlying effects
- To be able to use statistical software and interpret computer displays from such software
- To be able to produce statistical graphics
- To be able to compute probabilities and confidence intervals
- To be able to conduct the most basic types of hypothesis testing and estimation

Reflection:
- To understand that statistical methods can be wrongly applied and lead to false conclusions
- Understand that in many situations a statistical analysis will help making better decisions

Prerequisites
No particular prerequisites.

Compulsory reading
Books:
Paul Newbold, William Carlson and Betty Thorne. 2009. Statistics for business and economics. 7th ed. Upper Saddle River, N.J. : Pearson Education International : Prentice Hall. 850 Pages. 1 CD-Rom

Recommended reading

Course outline
- Graphical and descriptive statistics
- Random samples and populations
- Discrete and continuous random variables
- Probability
- Statistical models

- Estimation
- Confidence intervals
- Hypothesis testing
- Correlation and regression
- Chi square tests

Computer-based tools
The course uses modern statistical software (SAS JMP). Blackboard/homepage.

Learning process and workload
There are 48 course hours, 38 of which are ordinary lectures where the curriculum is covered. The remaining 10 hours will be dedicated to SAS JMP demonstrations in class.

For each week there will be given a work program with literature references and exercises. In the lectures the theory will be exemplified by a set of SAS JMP data samples with exercises. The final exam is loosely based on these SAS JMP examples.

Work requirements: :
There are 8 mandatory multiple choice tests to be answered in Blackboard.
If a test is not passed in the first try, the student can retry. It is mandatory that the student has passed at least 5 of these tests in order to take the final exam.

The students workload in hours:

Activity	Use of hours
Lectures and SAS JMP demos	48
Multiple choice tests in Blackboard	50
Working with SPSS	42
Study the textbook	40
Preparing for the final exam	20
Total use of hours recommended	**200**

Use of hours
Lectures 48 hours
Prepare for Multiple choice tests 6 hours (course responsible).

Examination
A five-hour individual written exam concludes the course.

Exam code(s)
EXC 29041 - Written exam, counts for 100% to obtain final grade in EXC 2904 Statistics, 7,5 credits.

Examination support materials
All aids + calculator TEXAS INSTRUMENTS BA II Plus™ are permitted.

Exam aids at written examiniations are explained under exam information in our web-based Student handbook. Please note use of calculator and dictionary.
http://www.bi.edu/studenthandbook/examaids.

Re-sit examination
Re-takes (written exam) are only possible at the next time the course will be held.
Multiple choice tests (work requirements) are only possible at the next time the course will be held.

Additional information