



APPLIES TO ACADEMIC YEAR 2013/2014

## EXC 2904 Statistics

### Programme

Bachelor of Business Administration (1. year), Exchange Program

### Responsible for the course

Svein Lund

### 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
- Understanding what a random variable and a statistical model is
- Understanding that statistical methods are based on assumptions that must be checked
- Understanding 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 skills:

- 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
- To understand that in many situations a statistical analysis will help making better decisions

### Prerequisites

No particular prerequisites.

### Compulsory reading

#### Books:

Sharpe, Norean R., Richard D. De Veaux, Paul F. Velleman. 2012. Business statistics. 2nd ed. Pearson

### 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). It's Learning/homepage.

### Learning process and workload

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

For each week there will be given a work programme 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 It's Learning.

If a test is not approved in the first try, the student can retry. It is mandatory that the student get approved 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 on Blackboard   | 50           |
| SPSS work                             | 42           |
| Textbook study                        | 40           |
| Preparing for the final exam          | 20           |
| <b>Total recommended use of hours</b> | <b>200</b>   |

### Use of hours

Lectures 48 hours

Preparation for multiple-choice tests 6 hours (course responsible).

### Coursework requirements

It is mandatory that the student must get approved at least 5 of 8 tests in order to take the final exam.

### Examination

A five-hour individual written examination concludes the course.

### Examination code(s)

EXC 29041 - Written exam, counts for 100% towards the final grade in EXC 2904 Statistics, 7,5 credits.

### Examination support materials

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

Examination support materials at written examinations are specified 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

A re-sit (written examinations) is only possible at the next time the course is offered.

Multiple-choice tests (work requirements) are only possible the next time the course is offered.

Students that have not passed the written examination or who wish to improve their grade must retake the exam in connection with the next scheduled examination.

### Additional information