APPLIES TO ACADEMIC YEAR 2001/2002

MET 8006 Statistics and Data Analysis

Program
Associate Degree Program in Trade and Retail Management, Bachelor of Business Administration Program in Travel and Tourism Management, Foundation Program in Business Administration, Master's Degree Program in Marketing Management 1. year, The Bachelor of Business Administration Program in Information Technology, The Bachelor of Business Administration Program in Logistics

Responsible for the course
Fred Wenstøp

Department
Economics

Term
Fall, NMH: Spring

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

Wenstøp, Fred. 2001. *Statistikk og dataanalyse* . 6. utg. Oslo: Universitetsforlaget.

Recommended literature

Wenstøp, Fred. 2001. *Statistikk og dataanalyse* : *Arbeidshefte med bruk av programvare og løsning av case* . 7. utg. Oslo: Universitetsforlaget.
Aakre, Pål og Fred Wenstøp. *Eksamensoppgavesamling med løsningsforslag i MET 8006: Statistikk og dataanalyse* . Siste utg. Sandvika: BI Forlag.

Course outline

1. Overview, random variation - Chapter 1
2. Sample statistics - order statistics - Chapter 2
3. Statistical inference - confidence intervals - Chapter 3
4. Statistical method, surveys, control groups, measurement scales - Chapter 4
5. Probability, set theory - Chapter 5
6. Combinatorics and probability distributions, binomial and hypergeometric - Chapter 6
7. Hypothesis testing and the power of tests - Chapter 7
8. Non-parametric tests - Chapter 8
9. The normal distribution - Chapter 9

10. Inference- one and two means, the Student-distribution - Chapter 10
11. Categorical variables, contingency tables - Chapter 11
12. Correlation - Chapter 12
13. Linear regression - Chapter 13
14. Analysis of variance - Chapter 14
15. Choice of method - Chapter 15

Computer-based tools
The colleges 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, Statark 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.
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.
Statark is an Excel-implemented pedagogical tool with functions that are organized according to the chapters in the textbook. It can be downloaded from Universitetsforlaget's home page together with Excel and SPSS datafiles. The workbook Wenstøp, F.: Statistikk og dataanalyse. Arbeidshefte med bruk av programvare shows how Statark and SPSS can be used in problem-solving.

Course structure
The course is based on 42 teaching hours with lectures in which selected, central topics are dealt with, in addition there will be 12 hours of exercises. Real 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.

Evaluation
A three-hour individual multiple-choice examination completes 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.

Evaluation code(s)
MET 80061 - multiple-choice exam which accounts for 100% of the grade in MET 8006, 2 credits

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

Makeup exam
A makeup exam is held in every term.