



APPLIES TO ACADEMIC YEAR 2013/2014

## GRA 6036 Multivariate Statistics

### Programme

Core Course, Master of Science in Business, Master of Science in Business (Business Law - Tax and Accounting), Master of Science in Business (HRM), Master of Science in Business (International Business), Master of Science in Business (Logistic - Supply Chains and Networks), Master of Science in Business (Marketing), Master of Science in Business (Strategy)

### Responsible for the course

Steffen Grønneberg, Ulf Henning Olsson

### Department

Department of Economics

### Term

According to study plan

### ECTS Credits

6

### Language of instruction

English

### Introduction

### Learning outcome

- To understand and be able to apply some of the most known and modern multivariate statistical techniques.
- To illustrate the use of actual statistical software. It is the responsibility of the student to familiarize himself/herself with the fundamentals of this or similar statistical software.
- To provide an understanding for the statistical assumptions underlying these techniques.

### Prerequisites

A bachelor degree qualifying for entrance to the Master programme. Basic Statistics, Linear Algebra and an Introductory Course in Econometrics

### Compulsory reading

#### Books:

Bartholomew, David J ... [et al.]. 2008. Analysis of multivariate social science data. 2nd ed. Chapman & Hall/CRC

### Collection of articles:

Collection of articles: Articles and book chapters in two compendiums

### Recommended reading

#### Course outline

- Introduction to multivariate statistics
- Principal component analysis (new)
- The Logit and The Probit Models
- Factor Analysis
- Simultaneous Equations (Path analysis)
- Structural Equation Models
- Estimation and Distribution Theory
- Multilevel models

### Computer-based tools

The course uses modern statistical software e.g. LISREL, SPSS, STATA, SAS, EVIEWS etc.,

### Learning process and workload

A course of 6 ECTS credits corresponds to a workload of 160-180 hours. Lectures and exercises.

Please note that while attendance is not compulsory in all courses, it is the student's own responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or text book.

**Examination**

Term paper and a 3 hours written exam. Groups of up to three students on the term paper. Students will have ca 2 weeks for writing the term paper.

The term paper counts for 40 % of the grade and the written exam counts for 60% of the final grade.

All parts of the evaluation need to be passed in order to get a grade in the course.

For further information please see information placed on It's learning and the web

Specific information regarding student evaluation beyond the information given in the course description will be provided in class. This information may be relevant for requirements for term papers or other hand-ins, and/or where class participation can be one of several elements of the overall evaluation.

**Examination code(s)**

GRA 60363 for the term paper (40% of the final grade)

GRA 60364 for the written exam (60% of the final grade)

**Examination support materials**

A bilingual dictionary and BI-approved calculator. Only BI-approved calculators are allowed at examinations.

Exam aids at written examinations are explained under exam information in the student portal @bi. Please note use of calculator and dictionary in the section on examaids

**Re-sit examination**

It is only possible to retake an examination when the course is next taught.

The assessment in some courses is based on more than one exam code.

Where this is the case, you may retake only the assessed components of one of these exam codes.

Where this is not the case, all of the assessed components of the course must be retaken.

All retaken examinations will incur an additional fee.

Please note that students who only retake the control exam need to be aware that the exam may be based on the termpaper given this semester. Students should therefore regard the termpaper as a part of the course literature, even if the students already have a passing grade in the termpaper.

**Additional information****Honor Code**

Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honor code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honor code system, to which the faculty are also deeply committed.

Any violation of the honor code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.