



APPLIES TO ACADEMIC YEAR 2016/2017

## GRA 6020 Multivariate Data Analysis

### Programme

Core Course, Master of Science in Leadership and Organizational Psychology, Master of Science in Strategic Marketing Management

### Responsible for the course

Steffen Grønneberg

### 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 multivariate statistical techniques to research problems in the student's discipline of interest.
- 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 analysis software.
- To provide an understanding for the statistical assumptions underlying these techniques.

### Prerequisites

All courses in the Masters programme will assume that students have fulfilled the admission requirements for the programme. In addition, courses in second, third and/or fourth semester can have specific prerequisites and will assume that students have followed normal study progression. For double degree and exchange students, please note that equivalent courses are accepted.

### Compulsory reading

#### Books:

Tabachnick, Barbara G., Linda S. Fidell. 2014. Using multivariate statistics. 6th ed., New International ed. Pearson. A customized edition of Tabachnick B. G., Fidell I. S. (2013) will be available. This edition will include all relevant chapters from the textbook

#### Other:

During the course there may be hand-outs and other material on additional topics relevant for the course and the examination

### Recommended reading

#### Course outline

Review of probability and statistical inference  
The linear regression model.  
Logistic regression  
Exploratory factor analysis and Principal Component Analysis  
Confirmatory factor analysis  
Structural Equation Modelling

### Computer-based tools

### 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 two hour multiple-choice examination.

Groups of up to three students on the term paper which accounts for 75% of the final grade. We might require an oral defense of the term paper.

The multiple-choice examination accounts for 25% of the final grade.

Form of assessment	Weight	Group size
Term paper	75%	Group of max 3 students
Multiple choice examination	25%	Individual

Specific information regarding student assessment will be provided in class. This information may be relevant to requirements for term papers or other hand-ins, and/or where class participation can be one of several components of the overall assessment. All parts of the assessment must be passed in order to get a grade in the course. Candidates may be called in for an oral hearing as a verification/control of written assignments.

### Examination code(s)

GRA 60205 for the term paper (75%)

GRA 60206 for the multiple choice exam (25%)

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

### Examination support materials

All support materials are allowed

BI approved exam calculator

Permitted examination support materials for written examinations are detailed under examination information in the student portal @bi. The section on support materials and the use of calculators and dictionaries should be paid special attention to.

### 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. All retaken examinations will incur an additional fee. Please note that you need to retake the latest version of the course with updated course literature and assessment. Please make sure that you have familiarised yourself with the latest course description.

### Additional information

Honour code. Academic honesty and trust are important to all of us as individuals, and are values that are integral to BI's honour code system. Students are responsible for familiarising themselves with the honour code system, to which the faculty is deeply committed. Any violation of the honour code will be dealt with in accordance with BI's procedures for academic misconduct. Issues of academic integrity are taken seriously by everyone associated with the programmes at BI and are at the heart of the honour code. If you have any questions about your responsibilities under the honour code, please ask. The learning platform itslearning is used in the teaching of all courses at BI. All students are expected to make use of itslearning.