GRA 6020 Multivariate Data Analysis

Program
Common Course, Master in Innovation and Entreprenuership, Master of Science in
International Marketing and Management, Master of Science in Leadership and Organizational
Psychology, Master of Science in Marketing, Master of Science in Political Economy

Responsible for the course
Ulf Henning Olsson

Department
Economics

Term
According to study plan

ECTS Credits
6

Language of instruction
English

Objective
- 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
An introductory course in statistics.

Compulsory literature
Books:
Hair, Joseph F., Rolph E. Anderson, Ronald L. Tatham and William C. Black. 2006.
Multivariate data analysis. 6th ed. Upper Saddle River, N.J. : Prentice Hall
Jøreskog, Karl G. and Dag Sørbom. 1995. LISREL 8: Structural equation modeling with the
SIMPLIS command language. 3rd printing, with foreword and computer exercises. Chicago :
Scientific Software International

Other:
Jøreskog Karl G. 2002. Structural Equation Modeling with Ordinal Variables. (Can be
downloaded: http://www.ssicentral.com/lisrel/ordinal.pdf)

Recommended literature
Books:
Gujarati, Damodar N. 2003. Basic econometrics. 4th ed. New York: McGraw-Hill
Kaplan, David. 2000. Structural equation modeling : foundations and extensions. Thousands
Oaks: Sage

Course outline
1. The idea of significance testing.
2. The linear regression model.
3. Qualitative Response Regression Models (Logit and Probit regression)
4. Factor analysis
5. Exploratory factor analysis
6. Confirmatory factor analysis
7. Structural Equation Modeling

Computer-based tools

The course uses modern statistical software. Blackboard/homepage

Course structure
Lectures and exercises.

Specific Information regarding student evaluation will be provided in class. Please note that while attendance is not compulsory in all courses, it is the student's responsibility to obtain any information provided in class that is not included on the course homepage/Blackboard or text book.

Evaluation
Term paper and a two-hour multiple-choice control exam account for 100% of the grade. Groups of up to three students on the termpaper. The multiple-choice exam is graded and counts for 25% of the final grade and must be passed to obtain course credits.
 For further information please see information placed on Blackboard and the web.

Evaluation code(s)
GRA 60205 for the term paper (75%)
GRA 60206 for the multiple choice exam (25%).

Aids at the examination
All aids are allowed.

Support materials at written examiniations are explained under exam information in our web-based student handbook. Please note use of calculator. http://www.bi.no/studenthandbook.

Makeup exam
Re-takes are only possible at the next time a course will be held. When course evaluation consists of class participation or process elements, the whole course must be re-evaluated when a student wants to retake a exam. . Retake examinations entail an extra examination fee.

This course consists of two separate evaluation codes; GRA 60205 and GRA 60206. Hence, student may re-take only one of the evaluations and not the whole coursePlease 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.

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 academy integrity. If you have any questions about your responsibilities under the honor code, please ask.