



APPLIES TO ACADEMIC YEAR 2015/2016

GRA 6039 Multivariate Statistics with Econometrics

Programme

Master of Science in Business (Economics), Master of Science in Business (Finance), Master of Science in Financial Economics

Responsible for the course

Steffen Grønneberg

Department

Department of Economics

Term

According to study plan

ECTS Credits

6

Language of instruction

English

Introduction

The aim of the course is to equip the students with an understanding of statistical techniques at a level expected among master students in economics, finance and related disciplines. Both theoretical and practical exercises will be given.

Learning outcome

After taking this course, students should have a solid knowledge of the general linear regression model, its most common extensions and practical experience in applying these models using modern software.

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:

Johnson, Richard Arnold, Dean W. Wichern. 2014. Applied multivariate statistical analysis. 6th ed., New international ed. Pearson
Stock, James H., Mark W. Watson. 2014. Introduction to econometrics. Updated 3rd ed. Global ed. Pearson. A customized edition of Johnson et. al 2014 and Stock et. al 2012 will be available. This edition will include all relevant chapters from the two text books.

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

1. Probability theory. Statistical testing and estimation theory illustrated through the linear regression problem.
2. Linear regression with time dependent errors: Autoregressive and Moving Average theory.
3. Multivariate multiple linear regression and Simultaneous Equation Systems.
4. Principal Components and its use in linear regression.
5. Exploratory Factor Analysis and an introduction to Covariance Models and their connection to Simultaneous Equation Systems.

Computer-based tools

R
Stata

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

Students will have approx. 2 weeks for writing the term paper.

Form of assessment	Weight	Group size
Term paper	40%	Group of max 3 students
Written examination 3 hours	60%	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.

Examination code(s)

GRA60393 accounts for 40% of the grade (term paper)

GRA60394 accounts for 60% of the grade (written exam, 3 hours)

Both evaluations must be passed in order to get a grade in the course.

Examination support materials

BI approved exam calculator

Bilingual dictionary

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

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.