



7,160: Quantitative Methods

Subject information

ECTS-Credits: 5

Attached courses

Timetable	Language	Lecturer
7,160,1.00 Quantitative Methods	English	Frauendorfer Karl

Course information

Course prerequisites

none

Course content

Motivation:

Currently, the quantitative methods play a major role in empirical work in all fields of economics. Particularly applied in Finance, quantitative methods provide an important basis for the valuation of many strategic and operative decisions, which have to be made in the banking and financial management activity.

Objective:

The course "Quantitative Methods" offers a detailed description of modern quantitative methodologies. The technical details are supported with useful examples and practical applications, which help the reader to extract the essential ideas and the information that is needed. Together with the other courses of the MBF-HSG program, it allows to acquire adequate competence to successfully manage key problems in the banking and financial management activity.

Content:

I. Script Part A

Module 1: Basics in Statistics and Algebra (Refresher)
Module 2: Basics in Simulation
Module 3: Basics in Mathematical Optimization
Module 4: Simple & Multiple Linear Regression
Module 5: Maximum-Likelihood Estimation

II. Script Part B

Module 6: Discrete-time Stochastic Processes
Module 7: Continuous-time Stochastic Processes
Module 8: Introduction to Arbitrage Theory
Module 9: Factor Model/Principal Component Analysis
Module 10: Panel Data Analysis

Course structure

The course consists of

- lectures (see before)
- independent studies with mandatory homework

Course literature

Script 1 (Content: Topics of Part A)

Script 2 (Content: Topics of Part B)

(Lecture notes contain handouts and readers for each topic.)

Course additional information

none

Information about the Examination

Examination type

decentral - Oral examination (individual examination) (60%, 15 mins.)

Examination aids

Closed Book

The following rules apply to all examinations irrespective of requirements and use:

- A simple pocket calculator is admissible (for the definition of simple pocket calculators incapable of communication, cf. general regulations concerning examination aids of 14 December 2010 and note the "Pocket calculators" fact sheet). Any other EDP and electronic means of communication such as notebooks, PDAs and mobile telephones, etc., are inadmissible.
- A bilingual dictionary (without handwritten notes) may be used if the examination questions and/or answers are not in the candidate's native language. Electronic dictionaries are inadmissible.
- The procurement of these examination aids is exclusively the students' responsibility.
- No other examination aids are admissible.

Question language: **English**

Answer language: **English**

decentral - examination paper written at home (individually) (40%)

Examination aids

no regulation necessary

No rules for examination aids are required for this examination.

- For written examinations at home (term paper), courses without credits, etc., no specific rules for examination aids are required.
- The regulations of the University of St. Gallen and the rules of academic work (sources and aids must always be identified) are applicable in a subsidiary fashion.
- All written work must be accompanied by a declaration of authorship.

Question language: **English**

Answer language: **English**

Examination content

I. Lecture Notes Part A

Module 1: Basics in Statistics and Algebra (Refresher)

Module 2: Basics in Simulation

Module 3: Basics in Mathematical Optimization

Module 4: Simple & Multiple Linear Regression

Module 5: Maximum-Likelihood Estimation

II. Lecture Notes Part B

Module 6: Discrete-time Stochastic Processes

Module 7: Continuous-time Stochastic Processes

Module 8: Introduction to Arbitrage Theory

Module 9: Factor Model/Principal Component Analysis

III. Homework (based on the lectures)

Exam-relevant literature

Lecture Notes A

- all handouts
- all reader sections

Lecture Notes B

- all handouts
- all reader sections

Attention please:

We would like to point out to you that this fact sheet has absolute priority over other information

such as StudyNet, faculty members' personal databases, information provided in lectures, etc.

When will the fact sheets become binding?

Information about courses: from the start of the bidding process on 25 August 2011

Information about decentral examinations: after the 4th semester week on 17 October 2011

Information about central examinations: from the start of the enrolment period for the examinations on 7 November 2011

Please look at the fact sheet once more after these deadlines have expired.