



Course and Examination Fact Sheet: Autumn Semester 2017

7,160: Quantitative Methods (MBF)

ECTS credits: 5

Overview examination/s

(binding regulations see below)

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

Decentral - examination paper written at home (individual) (40%)

Attached courses

Timetable -- Language -- Lecturer

[7,160,1.00 Quantitative Methods \(MBF\)](#) -- Englisch -- [Frauendorfer Karl](#)

Course information

Course prerequisites

none.

It is highly recommended that MBF-students take this course for credit during their first semester in the program.

Course content

Motivation:

Quantitative methods play a major role in empirical work in all fields of economics. Particularly in Finance quantitative methods provide an important basis for the valuation of many strategic and operative decisions that 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 master 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



II. Script Part B

Module 5: Maximum-Likelihood Estimation

Module 6: Introduction to Arbitrage Theory

Module 7: Discrete-time Stochastic Processes

Module 8: Continuous-time Stochastic Processes

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.)

Additional course information

none



Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

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

Remark

--

Examination-aid rule

Extended Closed Book

The use of aids is limited; any additional aids permitted are exhaustively listed under "Supplementary aids". Basically, the following is applicable:

- At such examinations, all the pocket calculators of the Texas Instruments TI-30 series and mono- or bilingual dictionaries (no subject-specific dictionaries) without hand-written notes are admissible. Any other pocket calculator models and any electronic dictionaries are inadmissible.
- In addition, any type of communication, as well as any electronic devices that can be programmed and are capable of communication such as notebooks, tablets, PDAs, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

none

Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Decentral - examination paper written at home (individual) (40%)

Remark

precondition for admission to oral exam

Examination-aid rule

Term papers

- Term papers must be written without anyone else's help and in accordance with the known quotation standards, and they must contain a declaration of authorship.
- The documentation of sources (quotations, bibliography) has to be done throughout and consistently in accordance with the APA or MLA standards. The indications of the sources of information taken over verbatim or in paraphrase (quotations) must be integrated into the text in accordance with the applicable quotation standard, while informative and bibliographical notes must be added as footnotes (recommendations and standards can be found, for example, in METZGER, C. (2015), Lern- und Arbeitsstrategien (11th ed., 4th printing). Aarau: Sauerländer).
- For any work written at the HSG, the indication of the page numbers both according to the MLA and the APA standard is



never optional.

- Where there are no page numbers in sources, precise references must be provided in a different way: titles of chapters or sections, section numbers, acts, scenes, verses, etc.
- For papers in law, the legal standard is recommended (by way of example, cf. FORSTMOSER, P., OGOREK R. et SCHINDLER B. (2014, Juristisches Arbeiten: Eine Anleitung für Studierende (5. Auflage), Zürich: Schulthess, or the recommendations of the Law School).

Supplementary aids

--

Examination languages

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

II. Lecture Notes Part B

Module 5: Maximum Likelihood Estimation

Module 6: Introduction to Arbitrage Theory

Module 7: Discrete-time Stochastic Processes

Module 8: Continuous-time Stochastic Processes

III. Homework (based on the lectures)

Examination relevant literature

Lecture Notes A

- all handouts

- all reader sections

Lecture Notes B

- all handouts

- all reader sections



Please note

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 and examination time (central/decentral and grading form): from the start of the bidding process on 24 August 2017
- Information about decentral examinations (examination-aid rule, examination content, examination relevant literature): after the 4th semester week on 16 October 2017
- Information about central examinations (examination-aid rule, examination content, examination relevant literature): from the start of the enrolment period for the examinations on 06 November 2017

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