



Course and Examination Fact Sheet: Autumn Semester 2019

7,315: Theory of Finance

ECTS credits: 4

Overview examination/s

(binding regulations see below)

Decentral - examination paper written at home (individual) (50%)

Central - Written examination (50%, 60 mins.)

Attached courses

Timetable -- Language -- Lecturer

[7,315,1.00 Theory of Finance](#) -- Englisch -- [Söderlind Paul](#)

Course information

Course prerequisites

Bachelor's level in statistics, some basic knowledge of linear algebra is also useful.

Course content

This course is the core finance course in the MiQE/F. It deals with the basic concepts of financial modelling and principles of asset pricing, and has a rigorous treatment of portfolio theory and applications. Moreover, interest rate calculations, bond pricing, bond portfolio management and option pricing are also covered.

Course objective: The aim of the course is to present advanced financial theory and to illustrate how it can be applied on real-life data. Quantitative problem sets are an important part of the course.

Course structure

The course covers the following topics*:

1. The Basics of Return Calculations
2. The Basics of Portfolio Choice
3. Mean-Variance Frontier
4. Index Models
5. Portfolio Choice
6. Capital Asset Pricing Model
7. Foreign Exchange (not in detail)
8. Performance Analysis (not in detail)
9. Risk Measures
10. Utility-Based Portfolio Choice
11. CAPM Extensions and Multi-Factor Models
12. Investment for the Long Run
13. Efficient Markets
14. Dynamic Portfolio Choice (not covered)
15. Forwards and Futures
16. Interest Rate Calculations
17. Hedging Bonds
18. Interest Rate Models
19. Basic Properties of Options
20. The Binomial Option Pricing Model



21. The Black-Scholes Model
22. Hedging Options
23. FX and Interest Rate Options (not covered)
24. Trading Volatility (not covered)

The course contains lectures, problem sets (= examination paper), and has a written exam.

* (not in detail) means that the corresponding chapter might be briefly discussed in class and general questions can be asked in the exam; (not covered) means that the corresponding chapter will be neither discussed in class nor asked in the exam

Course literature

(i) Required readings:

- Lecture notes (available as pdf files on the course homepage);
- Elton, E. J., M. J. Gruber, S. J. Brown, and W. N. Goetzmann, 2014, *Modern portfolio theory and investment analysis*, John Wiley and Sons, 9th edn.

(ii) Optional extra reading on interest rate and options:

- Hull, J. C., 2009, *Options, futures, and other derivatives*, Prentice-Hall, Upper Saddle River, NJ, 7th edn.

(iii) Further readings:

- To be specified in class.

Additional course information

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Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form

Decentral - examination paper written at home (individual) (50%)

Remark

examination paper = collection of problem sets

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 precepts of 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. (2017), *Lern- und Arbeitsstrategien* (12th ed., Cornelsen Schweiz).
- 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., OGORÉK R. et SCHINDLER B. (2018), *Juristisches Arbeiten: Eine Anleitung für Studierende* (6. Auflage), Zürich: Schulthess, or the recommendations of



the Law School).

Supplementary aids

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Examination languages

Question language: English

Answer language: English

2. Examination sub part (2/2)

Examination time and form

Central - Written examination (50%, 60 mins.)

Remark

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Examination-aid rule

Open Book

Students are free to choose aids but will have to comply with the following restrictions:

- At such examinations, all the pocket calculators of the Texas Instruments **TI-30 series** are admissible. Any other pocket calculator models 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 electronic dictionaries, notebooks, tablets, PDAs, mobile telephones and others, are inadmissible.
- Students are themselves responsible for the procurement of examination aids.

Supplementary aids

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Examination languages

Question language: English

Answer language: English

Examination content

Topics of the written exam (50%):

- All topics covered during the lectures as well as the required reading (specified in the detailed reading list) are relevant for the written exam.
- The material in the problem sets is also relevant for the written exam.
- Selected topics: The Basics of Return Calculations, The Basics of Portfolio Choice, Mean-Variance Frontier, Index Models, Portfolio Choice, CAPM, Foreign Exchange, Performance Analysis, Risk Measures, Utility-Based Portfolio Choice, CAPM Extensions and Multi-factor models, Investment for the Long Run, Efficient Markets, Forwards and Futures, Interest Rate Calculations, Bond Portfolios and Hedging, Interest Rate Models, Basic Properties of Futures and Options, The Binomial Option Pricing Model, The Black-Scholes Model, Hedging Options.

Examination relevant literature

- Lecture notes
- Elton, E. J., M. J. Gruber, S. J. Brown, and W. N. Goetzmann, 2014, *Modern portfolio theory and investment analysis*, John Wiley and Sons, 9th edn.



Please note

Please note that this fact sheet alone is binding and has priority over any other information such as StudyNet (Canvas), personal databases or faculty members' websites and information provided in their lectures, etc.

Any possible references and links within the fact sheet to information provided by third parties are merely supplementary and informative in nature and are outside the University of St.Gallen's scope of responsibility and guarantee.

Documents and materials that have been submitted no later than the end of term time (CW51) are relevant to central examinations.

Binding nature of the fact sheet:

- Information about courses and examination time (central/decentral) and examination type starting from the beginning of the bidding on 22 August 2019
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for decentral examinations after the 4th semester week on 14 October 2019
- Information about examinations (examination aid regulations, examination content, examination-relevant literature) for central examinations as from the starting date for examination registration on 4 November 2019

Please consult the fact sheet again after these deadlines have expired.