University of St.Gallen

Course and Examination Fact Sheet: Spring Semester 2018

8,194: Financial Modeling Workshop: Derivatives

ECTS credits: 4

Overview examination/s
(binding regulations see below)
Decentral - Written examination (70%, 90 mins.)
Decentral - Group examination paper (all given the same grades) (30%)

Attached courses
Timetable -- Language -- Lecturer
8,194,1.00 Financial Modeling Workshop: Derivatives -- Englisch -- Ammann Manuel , Schaub Nic

Course information

Course prerequisites
As a prerequisite, the MBF-courses "Financial Markets" and "Quantitative Methods" must have been completed. The MBF-course "Derivatives" must be attended in parallel to this course. No previous knowledge of VBA is necessary.

Course content
The primary objective of this course is to give students an introduction into how derivative models and pricing algorithms are implemented in practice and to demonstrate industry applications of option pricing theory. Students will also learn how to translate mathematical formulas and algorithms into readily runnable computer code, a qualification that is not limited to derivative theory but can be applied to a wide range of financial modeling applications.
The course is designed as a computer workshop. Guided by the instructors, students will solve specific problems related to derivative applications by writing their own computer code. Excel and VBA will be employed throughout the whole course. VBA is easily accessible through Excel and it is widely used in practice. It also bears close resemblance to other programming languages which aids the transition to other programming environments.
Furthermore, being able to handle a programming language and thereby being able to automate financial applications is a qualification that is highly sought after in the finance industry and very beneficial when applying for a job.
For further information, please refer to the **course syllabus** (available on StudyNet).

Course structure
The course is structured as follows:

1. Introduction to VBA
2. Binomial Model
3. Black-Scholes and Greeks
4. Risk Management with Simulations
5. Exotic Options

6. Beyond Black-Scholes
7. Advanced Monte Carlo Simulation
8. Finite Differences
9. Model Calibration
10. Parameter Estimation
11. Model Assessment

Course literature

Required reading:

Handouts and additional readings will be provided on StudyNet.

Additional course information

Independent Studies

The exercises are to be solved individually and will be discussed in the respective modules.

Information

Information and announcements regarding the course as well as Excel files will be made available on StudyNet.

Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form
Decentral - Written examination (70%, 90 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

University of St.Gallen

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
One double-sided A4-cheat-sheet (handwritten or machine-printed), Excel, VBA

Examination languages
Question language: English
Answer language: English

---

2. Examination sub part (2/2)

Examination time and form
Decentral - Group examination paper (all given the same grades) (30%)

Remark
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. (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

For further information on the exam details, please refer to the **course syllabus** (available on StudyNet).

University of St.Gallen

Examination relevant literature

For further information on the exam details, please refer to the **course syllabus** (available on StudyNet).

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 25 January 2018
- Information about decentral examinations (examination-aid rule, examination content, examination relevant literature): after the 4th semester week on 19 March 2018
- Information about central examinations (examination-aid rule, examination content, examination relevant literature): from the start of the enrolment period for the examinations on 09 April 2018

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