University of St.Gallen

Course and Examination Fact Sheet: Spring Semester 2019

8,386: Data Analytics: Applications and Visualization

ECTS credits: 4

Overview examination/s

(binding regulations see below)
Central - Written examination (50%, 60 mins.)
Decentral - Presentation (individual) (50%)

Attached courses

Timetable -- Language -- Lecturer
8,386,1.00 Data Analytics: Applications and Visualization -- Englisch -- Bonev Petyo

Course information

Course prerequisites

There are no specific technical prerequisites for this course. Any knowledge in statistics would be of an advantage, but is not necessary to master the course.

Course content

In a world with ever increasing importance of making sense of data, this course aims at providing the student with an all-round skill set in the field of data analytics and visualisation. The main techniques of empirical work are taught by means of case studies using real world data sets from different fields. These techniques include regression analysis, instrumental variable methods, and difference-in-difference estimation. The non-technical, intuitive exposition provide a solid basis for practical work. Comprehensive computer sessions are dedicated to hands-on implementation of these techniques with the popular software R. The skill set resulting from this course ideally enables students to understand and evaluate quantitative relationships, and also to visualize and present them. As such, these skills are a valuable asset for a career at a consultancy, data analytics firms, and other private and public firms interested in data analytics. The course is also an ideal preparation for more advanced, technical data analysis courses.

Course structure

Weekly lectures. At least every third lecture is a computer lab session. In the second half of the semester, students develop own projects under the supervision of the lecturer. This supervised learn-it-and-do-it-yourself model ends with presentations of the own results.

Course literature

The main reference is own lecture notes and code.

Other references:

- Tufte, Edward: The visual display of quantitative information, 2001

- Stock, J. and Watson, M.: Introduction to econometrics, 2006

- MIT open source lecture notes

Further, topic specific references will be announced during the lecture.

Additional course information

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Examination information

Examination sub part/s

1. Examination sub part (1/2)

Examination time and form
Central - Written examination (50%, 60 mins.)

Remark
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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
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Examination languages
Question language: English
Answer language: English

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2. Examination sub part (2/2)

Examination time and form
Decentral - Presentation (individual) (50%)

Remark
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Examination-aid rule
Practical examination
No examination-aid rule is necessary for such examination types. The rules and regulations of the University of St. Gallen apply in a subsidiary fashion.

Supplementary aids
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Examination languages
Question language: English
Answer language: English

Examination content

Central written examination and a presentation of the own work (decentral): each weighted 50% of the final grade.

The oral presentations will test the students' skills of autonomously managing a small data project, which includes developing proper empirical strategy and implementing it (coding). In addition, weight will be put on the ability of the students to visualize

and present their results. The written exam will test whether the students have understood the basic empirical strategies thought during the lecture. The test will focus on (i) commenting on graphical relationsships, (ii) reading of code outputs and (iii) outlining assumptions and pitfalls associated with each empirical strategy.

The precise weights are as follows:

1) Reports that serve as basis for the presentations (written as a short (3-5 pages) paper): 30%

2) Presentation of these reports: 20%

3) Central exam: 50%.

Note that for the central exam, only the content presented during the lecture is relevant.

Examination relevant literature

The main reference is own lecture notes and code.

Other references:

- Tufte, Edward: The visual display of quantitative information, 2001

- Stock, J. and Watson, M.: Introduction to econometrics, 2006

- MIT open source lecture notes

Further, topic specific references will be announced during the lecture.

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 January 2019
- Information about decentral examinations (examination-aid rule, examination content, examination relevant literature): after the 4th semester week on 18 March 2019
- Information about central examinations (examination-aid rule, examination content, examination relevant literature): from the start of the enrolment period for the examinations on 08 April 2019

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