



Course and Examination Fact Sheet: Autumn Semester 2018

3,222: Statistics

ECTS credits: 6

Overview examination/s

(binding regulations see below)

Central - Written examination (100%, 120 mins.)

Attached courses

Timetable -- Language -- Lecturer

[3,222,1.00 Statistics \(Economics\)](#) -- Englisch -- [Audrino Francesco](#)

[3,222,2.00 Statistics \(Economics\): Exercises](#) -- Englisch -- [Kostrov Alexander](#)

Course information

Course prerequisites

No prior preparation in probability and statistics is required, but familiarity with basic algebra and calculus is expected.

Course content

Introductory course in probability and statistics with some basic economic applications.

The main essential ingredients taught are: elements of probability theory, sampling theory, and statistical estimation. It uses elementary econometrics and other applications of statistical tools to economic data. It also provides a solid foundation in probability and statistics for economists.

The course will emphasize topics needed in the further study of econometrics and provide the needed quantitative preparation for the understanding and analysis of the different economic and financial applications taught in the later terms.

Course Objective:

Students will learn how to deal with stochastic environments and will be able to work properly under conditions where uncertainty plays a major role. Moreover, students will identify and estimate key quantities (parameters) that drive the distributions of the relevant random variables under investigation.

Course structure

The lecture is organized in the form of frontal classes and exercises. The discussed subjects are:

- Probability theory: the building blocks
 - Random experiments
 - Probability models
 - Probability computation rules
 - Basic theorems
- Combinatorial methods
- Random variables: definition and properties
- Special distributions
- Multivariate random variables
 - Joint, marginal, and conditional distributions
 - Expectation, variance, and correlation
 - Sums and sample means of random variables
- The Central Limit Theorem (CLT)



- Descriptive statistics
- Estimation of unknown parameters
- Confidence intervals

Course literature

Mandatory:

- F. Audrino, script from lecture (available in Studynet)

Recommended:

- M. H. DeGroot and M. J. Schervish, "Probability and Statistics", fourth international edition, Pearson Education, Inc. (2012)
- M. Barrow, "Statistics for economics, accounting and business studies", sixth edition, Pearson Education, Inc. (2013)
- D. Anderson, D. Sweeney, T. Williams, J. Freeman, and E. Shoesmith, "Statistics for Business and Economics", third edition, CENGAGE Learning (2014).
- J. Schira, "Statistische Methoden der VWL und BWL: Theorie und Praxis", 3. Auflage, Pearson Studium (2009) - in German

Additional course information

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Examination information

Examination sub part/s

1. Examination sub part (1/1)

Examination time and form

Central - Written examination (100%, 120 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

- Probability theory: the building blocks
 - Random experiments
 - Probability models



- Probability computation rules
- Basic theorems
- Combinatorial methods
- Random variables: definition and properties
- Special distributions
- Multivariate random variables
 - Joint, marginal, and conditional distributions
 - Expectation, variance, and correlation
 - Sums and sample means of random variables
- The Central Limit Theorem (CLT)
- Descriptive statistics
- Estimation of unknown parameters

Confidence intervals

Examination relevant literature

F. Audrino, script from lecture (available in Studynet at the latest by 19.12.2018)

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 23 August 2018
- Information about decentral examinations (examination-aid rule, examination content, examination relevant literature): after the 4th semester week on 15 October 2018
- Information about central examinations (examination-aid rule, examination content, examination relevant literature): from the start of the enrolment period for the examinations on 05 November 2018

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