



APPLIES TO ACADEMIC YEAR 2015/2016

DRE 7008 Advanced Statistics

Programme

Finance; Economics

Responsible for the course

Genaro Sucarrat

Department

Department of Economics

Term

According to study plan

ECTS Credits

6

Language of instruction

English

Introduction

The aim of the course is to equip the students with a formal understanding of the statistical foundations of econometrics at a level expected among Ph.D students in economics, finance and related disciplines.

Learning outcome

After taking this course, students should have a solid knowledge of the foundations of theoretical and applied econometrics, so that they can critically use and evaluate others' use of statistical techniques in economics and related fields. Moreover, students will be introduced to the use of advanced programming languages.

Prerequisites

Admission to a PhD Programme is a general requirement for participation in PhD courses at BI Norwegian Business School.

External candidates are kindly asked to attach confirmation of admission to a PhD programme when signing up for a course with the doctoral administration. Candidates can be allowed to sit in on courses by approval of the course leader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or confirmation letters will not be issued for sitting in on courses.

Compulsory reading

Books:

Hayashi, Fumio. 2000. Econometrics. Princeton University Press
Jacod, Jean and Philip Protter. 2003. Probability essentials. 2nd ed. Springer

Articles:

During the course there may be hand-outs and other material on additional topics relevant for the course and the examination

Recommended reading

Books:

Davidson, James. 2000. Econometric theory. Blackwell
Davidson, Russell, James G. MacKinnon. 1993. Estimation and inference in econometrics. Oxford University Press
Davidson, Russell, James G. MacKinnon. 2004. Econometric theory and methods. Oxford University Press
Davison, A.C. 2003. Statistical models. Cambridge University Press
Gallant, Ronald A. 1997. An introduction to econometric theory : measure-theoretic probability and statistics with applications to economics. Princeton University Press
Greene, William H. 2012. Econometric analysis. 7th ed. Pearson
Grimmett, Geoffrey R. and David R. Stirzaker. 2001. One thousand exercises in probability. Oxford University Press
Grimmett, Geoffrey R. and David R. Stirzaker. 2001. Probability and random processes. 3rd ed. Oxford University Press

Course outline

1. Probability and Random Variables
2. Expectation and Conditional Expectation
3. Estimation
4. Hypothesis Testing
5. Computomg and Numerical Optimisation
6. Model Selection

Computer-based tools

The course uses the statistical programming language R.

Learning process and workload

The course will be taught in ten modules, each consisting of three hours. Students are expected to participate in class and hand in solutions to exercises and problems.

Lectures	30 hours
Specified learning activities (including reading)	75 hours
Autonomous student learning (including exam preparation)	75 hours
Total	180 hours

Examination

The final grade is pass/fail. Individual termpaper.

Examination code(s)

DRE 70081 termpaper accounts for 100% of the grade.

Examination support materials

N/A

Re-sit examination

Re-takes are only possible at the next time a course will be held. When the course evaluation has a separate exam code for each part of the evaluation it is possible to retake parts of the evaluation. Otherwise, the whole course must be re-evaluated when a student wants to retake an exam.

Additional information

Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honour code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honour code system, to which the faculty are also deeply committed.

Any violation of the honour code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honour code and academic integrity. If you have any questions about your responsibilities under the honour code, please ask.