



APPLIES TO ACADEMIC YEAR 2012/2013

DRE 7007 Preparatory course in Mathematics, Ph.D.

Programme

Finance and Economics

Responsible for the course

Eivind Eriksen

Department

Department of Economics

Term

According to study plan

ECTS Credits

2

Language of instruction

English

Introduction

Economic analysis is based on mathematical concepts and tools like functions and optimization. This intensive course is designed to enhance the mathematical knowledge of course participants in areas which are particularly relevant for doctoral studies of economics and finance.

The course is designed for students in the following programmes:

Ph.D. in Economics

Ph.D. in Finance

Learning outcome

After completing the course, the student will be familiar with basic mathematical tools for economic analysis. The student will have developed skills in solving relevant problems.

Prerequisites

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

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 conformation letters will not be issued for sitting in on courses.

Compulsory reading

Books:

Simon, Carl P. and Lawrence Blume. 1994. Mathematics for economists. Norton

Sydsæter, Knut ... [et al.]. 2008. Further mathematics for economic analysis. 2nd ed. Financial Times/Prentice-Hall

Recommended reading

Course outline

The course will be based around the following topics:

- Sets and point set topology
- Vectors and linear algebra
- Real analysis in one and several variables
- Unconstrained and constrained optimization
- Correspondences and fixed points
- Differential equations and dynamical systems
- Control theory in continuous and discrete time

Computer-based tools

It's Learning. Mathematical software may be used during lectures for

illustration purposes.

Learning process and workload

There will be 20 teaching hours in the course. There will be assigned homework.

Examination

In the course portfolios are used for assignments and evaluation. A portfolio is a systematic collection of student work showing effort, process, progress, and reflection throughout the semester. The work is done individually. The course responsible will set deadlines throughout the semester, but the final submission of all assignments will be on a date given by the Doctoral Administration / Exam Office

Grading in the course is based the student's portfolio.

Of the total 10 assignments, at least 8 must be passed in order to complete the course. The complete portfolio (at least 8 assignments) must be submitted by each student individually according to the deadline published by the exam office / doctoral administration to the doctoral administration.

The final grade is pass/fail.

Examination code(s)

DRE 70071 accounts for 100% of the final grade in the course DRE 7007. Portfolio evaluation is used.

Examination support materials

Not applicable.

Re-sit examination

Next time the course is offered

Additional information

Honour Code

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

Any violation of the honor 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 honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.