APPLIES TO ACADEMIC YEAR 2014/2015

GRA 6035 Mathematics

Programme
Core Course, Master of Science in Business, Master of Science in Financial Economics

Responsible for the course
Eivind Eriksen

Department
Department of Economics

Term
According to study plan

ECTS Credits
6

Language of instruction
English

Introduction
In finance and economics, the mathematical language and techniques of mathematical analysis are extensively used. The mathematical requirements of a graduate student go beyond the material usually taught in undergraduate courses. This course introduces the students to the most frequently used subjects.

Learning outcome
After completing the course, the student will be familiar with several mathematical methods and techniques that are used in advanced courses in economics and finance. The student will have developed skills in solving relevant problems.

Prerequisites
Methods and techniques from a standard mathematics course at Bachelor level and linear algebra at the level of Preparatory course for MSc in Business and Economics, are assumed well known.

Compulsory reading
Books:
Simon, Carl P. and Lawrence Blume. 1994. Mathematics for economists. International student ed. W. W. Norton

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

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

Course outline
- Linear algebra, with emphasis on matrices
- Optimization in several variables, with different types of constraints
- Differential equations
- Difference equations

Computer-based tools
It's Learning. Mathematical software may be used in lectures for illustration purposes.

Learning process and workload
A course of 6 ECTS credits corresponds to a workload of 160-180 hours. The course is taught through lectures and problem assignments. In addition there will be problem sessions. Please see syllabus (on It's learning) for further details.

Please note that while attendance is not compulsory in all courses, it is the student's own responsibility to obtain any information provided in class that is not included on the course homepage/It's learning or text book.

Examination
1 hour individual midterm exam (multiple choice - 20%).
3 hour written individual final exam (80%).

Specific information regarding student evaluation beyond the information given in the course description will be provided in class.

Examination code(s)
GRA 60352 for the 1 hour multiple choice midterm exam (20% of the final grade)
GRA 60353 for the 3 hour written exam (80% of the final grade)
Both evaluations must be passed in order to get a grade in the course.

Examination support materials
A bilingual dictionary and BI-approved exam calculator.
Examination support materials at written examiniations are explained under examination information in the student portal @bi. Please note use of calculator and dictionary in the section on support materials.

Re-sit examination
The assessment in some courses is based on more than one exam code.
Where this is the case, you may retake only the assessed components of one of these exam codes.
Where this is not the case, all of the assessed components of the course must be retaken.
All retaken examinations will incur an additional fee.

There will be ordinary exams in the fall semester, and retake exams in the spring semester. Retake examinations entail an extra examination fee.

Additional information
Honor 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.