



APPLIES TO ACADEMIC YEAR 2006/2007

## GRA 6035 Mathematics

### Program

Common Course, Master of Science in Business and Economics, Master of Science in Financial Economics

### Responsible for the course

Magne Aarset

### Department

Economics

### Term

According to study plan

### ECTS Credits

6

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.

### Objective

The students will be introduced to more advanced methods than they learned in their Bachelor's degree. The objective of the course is to teach the students the methods used in advanced courses in economics and finance.

### Prerequisites

Methods and techniques from a standard mathematic course at Bachelor level are assumed well known.

### Compulsory literature

#### Books:

Sydsæter, Knut, Peter Hammond, Atle Seierstad and Arne Strøm. 2005. Further mathematics for economic analysis. Harlow : Prentice Hall/Financial Times. Kapitlene 1, 3, 5, 6 og 11. Bare deler av kapitlene 5, 6 og 11 er pensum

### Recommended literature

#### Course outline

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

### Computer-based tools

Mathematical software (Maple 10 and Mathematica 5.2) will be used in lectures for illustration purposes.

### Course structure

36 hours lectures.

### Evaluation

1 hour individual midterm exam (multiple choice - 20%). A separate grade on the midterm exam will not be given.

3 hour written individual final exam (80%).

### Evaluation code(s)

GRA 60351 accounts for 100 % of the final grade in the course GRA 6035.

**Aids at the examination**

Bilingual dictionary and advanced calculator. Calculators which can communicate with other units, via for example an IR-port, or can do symbolic calculations are not allowed.

**Makeup exam**

Re-takes are only possible at the next time a course will be held. When course evaluation consists of class participation or process elements, the whole course must be re-evaluated when a student wants to retake an exam. Retake examinations entail an extra examination fee.

**Honor Code**

Academic honesty and trust are important to all of us as individuals, and they are encouraged and promoted by the honor system. This is a most significant university tradition. The honor system is the responsibility of students. As faculty, we share the commitment to the ideals of the honor system.

At no time should notes or papers or personal consultations based on previous semesters of this course be used. As part of the honor code papers handed in as part of the course is, at the discretion of the professor, scanned for plagiarism. We are using Safe Assignment in Black Board for this purpose. Any violation of the honor code will be dealt with in accordance with BI's procedures on cheating. These issues are a serious matter to everyone associated with the program. They are at the heart of the Honor Code and academy integrity. If you have any questions about your responsibilities under the honor code, please ask.