



APPLIES TO ACADEMIC YEAR 2008/2009

## MET 2600 Mathematical Analysis

### Program

Bachelor in Finance (2. year)

### Responsible for the course

Robert Hansen

### Department

Department of Economics

### Term

According to study plan

### ECTS Credits

6

### Language of instruction

Norwegian

### Objective

Through training to develop the necessary skills in mathematics and linear algebra that is required in advanced courses in financial theory and economics at the bachelor and masters level. Very important in this regard is skills in building and analyzing mathematical models.

### Prerequisites

MET 2610 or MET 2591 or MET 9100, or equivalent.

### Compulsory literature

#### Books:

Sydsæter, Knut and Peter Hammond. 2008. Essential mathematics for economic analysis. 3rd ed. Harlow : Pearson Education Limited

### Recommended literature

### Course outline

Topics covered during the lecture series, references to Sydsæter et. al.:

1. Optimizing functions of several variables	chapter 13.1 - 13.6
2. Constrained optimization (general Lagrange)	chapter 14.1-14.3, 14.5, 14.6
3. Implicit given functions and derivation	chapter 7.1,7.2, 12.1-12.3
4. Differentials. Linear and polynomial approximations	chapter 7.4, 7.5, 12.8, 12.9
5. Elasticities	chapter 7,7, 11.8
6. Homogeneous functions	chapter 12.6
7. Nonlinear programming	chapter 14.7, 14.8
8. Systems of equations	chapter 12.10, 15.1
9. Gauss' method of elimination for linear equation systems	chapter 15.6
10. Matrix algebra	chapter 15.1 - 15.5, 15.7
11. Determinants and inverse matrices	chapter 16.1 - 16.8

### Computer-based tools

No computer-based tools are used in this course.

### Course structure

The course is taught over 42 class-room hours; 36 hours of lecturing and 6 hours of tutoring. Homeassignment exercises highlighting and demonstrating theory are used extensively throughout the lecture series. Coming to class prepared is thus regarded very important.

### Evaluation

Process evaluation based on one individual, closed-book, midterm-examination in class and a final, individual, closed-book examination. The score on the midterm examination counts 30%, whereas the score on the final exam counts for 70%, towards the overall grade for the course.

A passing score on the midterm must be obtained in order to sit for the final exam.

The course is concluded with two exams:

Part 1 - Midterm exam. Three hour individual written exam which counts 30% - Time for exam will be announced at start of course. Please notice that the midterm examination may be given during evening hours and must be passed before attending final exam.

Part 2 - Final exam. Three hour individual written exam which counts 70% - Time for exam will be announced at start of course.

**Evaluation code(s)**

MET 26001 - Process evaluation counts 100% of the final grade in MET 2600 Mathematical Analysis, 6 ECTS credits.

**Aids at the examination**

Interest rate tables and BI-approved exam calculator are allowed.

Exam aids at written examinations are explained under exam information in our web-based Student handbook. Please note use of calculator and dictionary.

<http://www.bi.edu/studenthandbook/examaids>

**Makeup exam**

A re-sit is held in at the next scheduled exam in the course. Students who are taking new exam must take the course all over including all parts of evaluation.