



APPLIES TO ACADEMIC YEAR 2007/2008

MET 2600 Mathematical Analysis

Program

Bachelor in Finance (2. year)

Responsible for the course

Robert Hansen

Department

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 og Peter Hammond. 2006. Essential mathematics for economic analysis. 2nd ed. Harlow : Financial/Times Prentice Hall. Pensum: Kapittel 7.1, 7.2, 7.4, 7.5, 7.7, 11.8, 12.1-12.3, 12.6, 12.8-12.10, 13.1-13.6, 14.1 - 14.3, 14.5 - 14.8, 15.1 - 15.7, 16.1 - 16.8.

Recommended literature

Course outline

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

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|---|-------------------------------|
| 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 witch counts 30% - Time for exam will be announced at start of course. Please notice that the midterm examinatuion may be given during evening hours and must be passed before attending final exam.

Part 2 - Final exam. Three hour individual written exam witch 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

Advanced calculator and interest rate tabels.

Support materials at written examinations are explained under exam information in our web-based student handbook. Please note use of calculator. <http://www.bi.no/studenthandbook>

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.