APPLIES TO ACADEMIC YEAR 2011/2012

EXC 2910 Mathematics

Programme
Bachelor in Business Administration (1. year), Bachelor in Business Administration (BBA) (1. year)

Responsible for the course
Svein Lund

Department
Department of Economics

Term
According to study plan

ECTS Credits
7,5

Language of instruction
English

Introduction
This is a basic mathematics course that spans two semesters. It aims to prepare the student for quantitative courses in economics and finance. The first semester (autumn) covers basic mathematical skills in algebra, equations, inequalities, functions and their graphs, and differentiation. The second semester (spring) focuses on more advanced calculus and some financial mathematics.

Learning outcome
Acquired knowledge:
Students will get to know a wide area of mathematical topics relevant to subjects in business administration such as statistics, finance and economics.

Acquired skills:
- Master fundamental skills in algebra, and be able to solve equations and inequalities
- Firmly understand the notion of a function and its graph
- Master derivatives and understand the relation between the derivative and the slope on a graph
- Use differentiation to solve optimization problems and calculate elasticities
- Master simple integration and understand its relation to the area between graphs
- Be familiar with exponential and logarithmic functions. Understand the use of the exponential function in calculating compound interest
- Be familiar with the use of price, profit and cost functions in economics
- Be able two solve constrained optimization problems in two dimensions by using partial differentiation and Lagrange multipliers
- Be able to evaluate determinants and use Cramer's rule to solve linear equations

Prerequisites
None

Compulsory reading
Books:
Sydsæter, Knut and Peter Hammond. 2008. Essential mathematics for economic analysis. 3rd ed. Prentice Hall

Recommended reading

Course outline
- Basic algebra
- Solving equations and inequalities. Systems of equations
- Functions and graphs
- Differentiation and its use in economics
- Basic financial mathematics
- Basic integration
- Functions of two variables. Partial differentiation and Langrange's method
- Determinants and Cramer's rule

Computer-based tools

Learning process and workload

The course spans two semesters and consists of an introduction and an advanced part, total 84 lecture hours.

Introduction part
First semester (autumn - EXC 2911) 36 hours - covers basic mathematical skills in algebra, equations, inequalities, functions and their graphs, and differentiation.

Advanced part
Second semester (spring - EXC 2912) 48 hours - focuses on more advanced calculus and financial mathematics.

The lecture hours will both cover the theory and train the students in practical problem solving. Every week the students are assigned exercises that will be discussed in the following lecture. The students are expected to work on these weekly exercises, and they will form a basis for the examinations.

During each semester a mid-term mandatory assignment will be given. This will have to be approved to have the course approved.

Activity	Introduction	Advanced
Lectures (participation in class) - Introduction	36	
Preparation for lectures/reading literature	10	
Working with the weekly exercises	11	
Multiple-choice examination	3	
Lectures (participation in class) - advanced		48
Preparation for lectures/reading literature		72
Work on the weekly exercises		75
Written examination		5
Total recommended use of hours	**60**	**200**

Use of hours

Lectures: 84 hours

Examination

The final grade in the course will be based on following elements:
- Assignment 1 will be given half way trough the first semester. Pass/Fail.
- A three- hour individual multiple-choice examination will be given at the end of the first semester. Counts for 20 % of the final grade.
- Assignment 2 will be given half way trough second semester. Pass/Fail.
- A four- hour individual written exam will be given at the end of second semester. Counts for 80 % of the final grade.

All elements must be passed to obtain the final grade. It will be possible to sit for a re-examination separately.

Examination code(s)

EXC 29101 - Assignment 1- Pass/fail
EXC 29102 - Multiple- choice. Counts 20% towards the final grade.
EXC 29103 - Assignment 2- Pass/fail
EXC 29104 – Written examination. Counts 80% towards the final grade.

Examination support materials

Multiple choice - No support materials allowed
Written exam - All examination support materials plus calculator TEXAS INSTRUMENTS BA II Plus™ are allowed
Examination support materials at written examinations are specified under exam information in our web-based Student Handbook. Please note use of calculator and dictionary.

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

Re-sit examination
A re-sit examination is held in every term.

Additional information