APPLIES TO ACADEMIC YEAR 2013/2014

MET 2910 Mathematics

Programme
Bachelor of Accounting and Auditing (1. year), Bachelor of Banking and Finance (SF), Bachelor of Business Administration (1. year), Bachelor of Business Law (1. year), Bachelor of Entrepreneurship and Business (1. year), Bachelor of Finance (1. year), Bachelor of Real Estate (1. year), Foundation Program of Business Administration

Responsible for the course
Pål Lauritzen

Department
Department of Economics

Term
According to study plan

ECTS Credits
7,5

Language of instruction
Norwegian

Introduction

This is a basic course in mathematics. The course is a compulsory part of the bachelor programs in business administration subjects. The course will be carried out during the first year over two terms. The first term will contain basic algebra, functions with one variable, and will give a basis for the main part of the course, which is in the second term.

Learning outcome

Acquired knowledge
After completing this course the students have acquired mathematical knowledge in basic algebra and function theory, also functions in several variables.

Acquired skills
The aim is to develop a deeper understanding of mathematical

concepts both through the ability to perform mathematical calculations and to gain a deeper conceptual understanding. This means, for example, the ability to see connections between algebraic and graphical representations of one and the same problem or to see connections between mathematics and other subjects, especially economics. In addition, students gain skills in understanding math problems and choose appropriate strategies to solve them.

Reflection
Students' ability of analytical thinking and an ability to reflect on the results and calculations will be strengthened by through the course.

Prerequisites
None.

Compulsory reading
Books:
Bjørnestad, Harald ... [et al.]. 2010. Matematikk for økonomi og samfunnsfag. 8. utg. Høyskoleforlaget

Recommended reading
Books:
Bjørnestad, Harald ... [et al.]. 2010. Matematikk for økonomi og samfunnsfag : løsningsforslag til 8. utgave. 8. utg. Høyskoleforlaget
Lauritzen, Pål. 2009. Matematikk for økonomer : oppgaver med løsninger. Cappelen akademisk forlag

Course outline
- Elementary algebra and solution of equations and equation systems
- Function concept and basic functions as polynomial functions, rational functions, exponential and logarithmic functions
- Differentiation and function analysis: limits, continuity, derivatives, derivatives of composite functions, application of differentiation in economic issues, analysis of functions, elasticity
- Series and financial mathematics
- Easy integration
- Functions of several variables: partial derivatives, stationary points. Maximum and minimum problems for two variables with and without constraints (Lagrange method)
- Determinants and solutions of equations using the Cramer rule

Computer-based tools

Learning process and workload

This course is taught over one year and consists of an introductory part of 36 hours and an advanced part of 48

hours. The introductory section is carried out with one session per. week during the fall semester and the advanced section with two session's per. week in the spring semester, each session lasting at least for two hours. The lectures will review key parts of the curriculum. Some topics that are reviewed in the introduction part can be known for certain.

Exercises presented by the students will be a key part of lectures and feedback will be given through review and discussion of the exercises. Each week there will be prepared a work programme with literature references and tasks will be prepared. Students must acquire the substance in the reference literature and solve problems. Some of the tasks will be discussed in plenary sessions.

Two assignments, one in each semester, should be submitted. These will be posted 14 days before the deadline. After the answers have been, the students will receive feedback through a discussion and review of the solution in class.

Recommended use of time:

Activity	**Introductory part**	**Advanced part**
Participation in class - introductory part	36	
Preparation for class/reading literature	10	
Exercises	11	
Multiple-choice examination	3	
Participation in class – Advanced part		48
Preparation for class/reading literature		72
Exercises		75
Written examination		5
Total recommended use of hours	**60**	**200**

Use of hours

Examination
The final grade in the course based on the following elements:
- Individual assignment 1 is given halfway through the semester, graded as pass / fail.
- A three-hour individual multiple-choice exam given at the end of the fall semester, accounting for 20% of the final grade in the course
- Individual assignment Task 2 is given halfway through the semester, graded as pass / fail.
- A four-hour individual written exam given at the end of the spring semester accounts for 80% of the final grade in the course

The first assignment and the multiple-choice exam are given in connection with the introduction of the course in the fall semester. The other assignment and the written examinations are given in connection with the continuation of the course in the spring semester.

All parts of the exam must be passed for the exam to be accepted, but a re-sit in one part can be done separately.
Students register for the 2911 MET for the fall term and 2912 for the spring term.

Examination code(s)
MET 29101 - Assignment Task 1, assessed with a pass / fail.
MET 29102 – Multiple-choice exam, exam accounts for 20% of the final grade in the course MET 2910 Mathematics for Economists, 7.5 credits.
MET 29103 - Assignment Task 2, assessed with a pass / fail.
MET 29104 - Written exam, exam accounts for 80% of the final grade in the course MET 2910 Mathematics for Economists, 7.5 credits

Examination support materials
Multiple-choice exam – none
Written examination - all support materials plus exam Calculator TEXAS INSTRUMENTS BA II Plus ™
Under exam information in the Student Handbook on the web support materials at written examinations are specified, especially the use of calculator. http://www.bi.no/studiehandbok/hjelpemidler

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

Additional information