



Course syllabus

Faculty of Technology

Department of Mathematics

1MA101 Grundläggande matematik, 7,5 högskolepoäng

Basic Mathematics, 7.5 credits

Main field of study

Mathematics

Subject Group

Mathematics

Level of classification

First Level

Progression

G1N

Date of Ratification

Approved 2009-08-11

Revised 2013-12-18 by Faculty of Technology. Course evaluation, objectives, literature list and prerequisites are revised.

The course syllabus is valid from autumn semester 2014

Prerequisites

Matematik 4 or Matematik D, or equivalent.

Objectives

The student should be able to:

- perform computations in different number sets.
- solve elementary equations and inequalities involving rational expressions or absolute values.
- solve problems within the areas of set theory, number theory and combinatorics.
- describe definitions and sketch graphs of elementary functions.
- perform elementary computations with complex numbers and solve polynomial equations with complex coefficients.
- describe definitions of and derive relations between central concepts of the course and apply these relations to solve problems.
- solve problems and visualize concepts and relations with mathematical software.
- be able to interpret, communicate and argue using mathematic notions.

Content

Numbers, logic, set theory, algebraic expressions, equations and inequalities, elementary functions, divisors, prime numbers, division algorithm, recurrence relations, induction, permutations, combinations, binomial theorem, complex numbers, complex plane, de Moivre's formula, complex quadratic equations, factor theorem, binomial equations.

Type of Instruction

Lectures, seminars and computer exercises. Compulsory assignments may be given during the course.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

The student's knowledge is assessed in the form of written examinations, which involve both computation and theory questions. Furthermore, continuous assessment can be used during the course. The principal assessment method for the course is determined at the beginning of the course.

Course Evaluation

A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed.

Required Reading and Additional Study Material

Sullivan M. *College Algebra*, international edition. Pearson, latest edition. 800 pages.

Material from the department