



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and 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

GIN

Date of Ratification

Approved by the Board of the School of Computer Science, Physics and Mathematics
2009-08-11

Revised 2012-12-10. Content is revised.

The course syllabus is valid from autumn semester 2013

Prerequisites

Mathematics D. General entry requirements and Mathematics D or Mathematics 3c.

Objectives

The student should be able to:

- perform computations with numbers, in particular rational numbers.
- solve elementary equations and inequalities involving rational expressions.
- 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.
- 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 and seminars. 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 at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Required Reading and Additional Study Material

Hellström L., Johansson P-G, Morander S., Tengstrand A. *Elementär algebra*, Studentlitteratur, latest edition. 300 (408) pages.

Ekstig K, Hellström L., Sollervall H. *Matematik Startbok*, Studentlitteratur, latest edition. 150 (172) pages.