DALARNA
UNIVERSITY

Course Syllabus

Algebra 7.5 Credits*, First Cycle

Learning Outcomes

On completion of the course, students shall be able to:

- demonstrate knowledge of, and use effectively, the language and expressions of mathematics,
- demonstrate knowledge of different classes of numbers including whole, rational, real, and complex numbers,
- demonstrate knowledge of the logical and axiomatic character of mathematics,
- demonstrate knowledge about some basic definitions and theorems within number theory,
- solve algebraic equations and systems of equations,
- use different methods such as direct and indirect proofing, contradiction, and induction to prove basic theorems within number theory,
- demonstrate basic knowledge of elementary combinatorics and use the binomial theorem to expand and manipulate polynomials,
- carry out division of polynomials and solve different types of polynomial equations.

Course Content

The course deals with the language of mathematics and different mathematical expressions as well as number theory and different methods for mathematical proofs. The course also examines combinatorics, complex numbers and polynomials with division of polynomials.

Assessment

Students are assessed through oral and written presentations and through an individual written exam.

Forms of Study

The course consists of lectures, mandatory seminars as well as group and individual mathematical activities.

Grades

The Swedish grades U–VG.

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Number of credits:

- Written and oral presentations, assignments, examination, 7.5 credits.

Prerequisites
General entry requirements and Mathematics 4 or Mathematics D

Other Information
Participation in the online course requires internet access and appropriate equipment such as microphone and webcam. This course corresponds to MD1044.

Subject:
Mathematics Education

Group of Subjects:
Educational Sciences/Theoretical Subjects

Disciplinary Domain:
Natural Science, 100%

Progression Indicator:
G1N

Approved:
Approved 8 June 2020
Valid from 18 January 2021