Linnæus University

Jnr: 2017/2244-3.1.2.2

Course syllabus

Faculty of Technology
Department of Mathematics

1MD161 Matematik och matematikdidaktik för grundskolan I, 15 högskolepoäng

Mathematics and Mathematics Education for Primary School I, 15 credits

Main field of study
Mathematics Education

Subject Group
Mathematics

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved by Faculty of Technology 2017-04-10
The course syllabus is valid from spring semester 2018

Prerequisites
English 6 (English B) or the equivalent. Admitted to a teacher education program and 15 credits of courses in early childhood education including theories of learning.

Objectives

After completing the course the students will be able to

- discuss and explain mathematics education as a field of study and the role of mathematics in society
- give an account of how mathematics as a school subject differs between countries, cultures and curriculums
- give an account of the history of ideas from where some important concepts within mathematics have been developed and used
- describe children's learning of concepts (e.g. number sense and spatial awareness) as well as demonstrate the ability to use this knowledge in didactical situations
- demonstrate advanced knowledge of primary school mathematics with focus on arithmetic, numbers and number use, geometry and spatial perception, algebra, statistics, probability, regression and change
- from a didactical perspective treat the mathematics covered in the course including the use of different forms of representation and working methods

Content

The main focus of the course is three integrated parts: mathematics as a school subject, primary school children's learning of mathematics, and the teaching of mathematics in primary school. The mathematical areas covered are arithmetic, numbers and number use, geometry and spatial perception, algebra, statistics, probability, relationship and change. An international perspective permeates all parts of the course.

Type of Instruction

The course is conducted through lectures, seminars, group assignments and field studies.

Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.
The course is assessed through active participation in seminars, and presentations, written and oral presentations of individual and group assignments, and written examination.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Course Evaluation

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

Credit Overlap

The course cannot be included in a degree along with the following courses of which the content fully, or partly, corresponds to the content of this course: 1GN038, 1GN217, and 1MD131/1MD141 together with 1MD132/1MD142

Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

Required Reading and Additional Study Material

Marja van den Heuvel-Panhuizen(ed.), Chrildren Learn Mathematics, A Learning-Teaching Treajectory with Intermediate Attinment Targets for Calculation with Whole Numbers in Primary School, Sense Publishers, latest edition.

Mathematics Explained for primary teachers, Derek Haylock, SAGE, latest edition

Elementary & Middle School Mathematics Teaching Developmentally, John A. Van De Walle et al., Pearson, latest edition.

Jo Boaler, Mathematical Mindsets, Jossey-Bass, senaste upplaga. ca 300 sidor

Additional articles and other material approximately 100 p.