



Course syllabus

Faculty Board of Science and Engineering

School of Computer Science, Physics and Mathematics

1MD314 Matematik i ett utomhusperspektiv för de mellersta skolåren, 15 högskolepoäng

1MD314 Mathematics outdoors for the middle school, 15 credits

Main field of study

Mathematics

Subject Group

Mathematics

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Organisational Committee 2009-08-11

The course syllabus is valid from spring semester 2010

Prerequisites

Mathematics A. Teacher's certificate and or the equivalent

Objectives

Having completed the course the students should:

- have a good command of the basics in the areas of arithmetic, algebra and geometry.
- be able to analyse and evaluate critically the mathematical content of teaching material.
- be able to account for the varied teaching significance for the individual pupil's learning process
- be able to plan and carry out teaching that is suitable for pupils with different abilities and interests.
- be able to exploit the outdoor environment in order to work with basic geometry, algebra and statistics as well as with the pupils' understanding of number and space.
- have an understanding of the importance of communication in the learning of mathematics.
- be able to reflect on the possibilities and disadvantages of everyday associations

in the learning of mathematics.

A complementary aim of the course, as in all teacher training, is to achieve the ability to use written and spoken Swedish correctly.

Content

- mathematical and didactical use of number in the fundamental rules of arithmetic, geometry, statistics and algebra
- the logical structure of mathematics and the construction of mathematical theory
- ways and means of working in the teaching of mathematics focusing on outdoor activities
- different environments in which the pupils can learn mathematics
- the development of the pupils' understanding of number and space

Type of Instruction

Teaching is conducted in the form of lectures, seminars and consideration of teaching methods. The teaching is to a large extent based on the students' active participation individually and in groups, which demands attendance at seminars, teaching methods sessions and presentations.

Theory and practice are interwoven in the course. To a certain extent the content of the course is treated in close connection to the field studies.

Distance teaching is possible. When given as a distance course special forms of distribution are used appropriate for the method of teaching.

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 students are examined partly through their active participation in seminars, teaching methods sessions and presentations and partly through written and oral presentations of individual and group assignments.

Assessment is continuous throughout the course together with individual assignments. Part of the assessment is of the practical elements that the students carry out and present.

Course Evaluation

After the course a written evaluation of the course will take place according to the University guidelines.

Required Reading and Additional Study Material

Required reading

Dahl K & Nordqvist S. *Matte med mening*, Alfabeta bokförlag, 1994. 64 pages.

Sollervall H. *Tal och de fyra räknesätten*, Studentlitteratur, 2007. 172 pages.

Lundegård, Wikman, Wohlin (red.) *Utomhusdidaktik* (valda delar), Studentlitteratur, 2004. 204 pages.

Molander, K m fl. *Att lära in matematik ute*, Naturskoleföreningen, ISBN: 91-631-

7462-6. 135 pages.

Olsson & Forsbäck *Utematte för meningsfullt lärande förskoleklass-skolår 3*, JUST NU, 2006, ISBN: 91-976049-0-9. 118 pages.

Wistedt, I m fl . //Att vardagsanknyta matematikundervisningen⁷⁷, Stockholms universitet/pedagogiska inst., 1992. 144 SIDOR.

MSI Stenciler, Växjö universitet, aktuellt år. ca 350 sidor.