Linnæus University

Jnr: 2018/1256-3.1.2.2

Course syllabus

Faculty of Technology
Department of Mathematics

1MA113 Geometri, 7,5 högskolepoäng
Geometry, 7.5 credits

Main field of study
Mathematics

Subject Group
Mathematics

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved 2014-11-11
Revised 2018-04-23 by Faculty of Technology. Removal of ECTS-grading scale.
The course syllabus is valid from autumn semester 2018

Prerequisites
General entry requirements and Mathematics 4 (Field-specific entry requirements 9/A9).

Objectives

After completing the course, the student should be able to

- solve problems, perform calculations, and conduct lines of reasoning within the part of mathematics that is covered by the course, and to communicate these solutions, calculations, and reasonings in writing
- describe definitions, and formulate and prove theorems that are central to the course.

Content

- Measuring of lengths, areas and volumes
- Euclid´s Element. Axiomatic systems
- Theorems about triangles and circles
- Constructions with ruler and compasses
- Problem solving
- Geometry and algebra – an interplay. Symmetry groups of plane figures
- Conic Sections
- Basics of projective geometry, hyperbolic geometry and fractal geometry
- Three classical ”unsolvable” geometric construction problems; something about number fields.

Type of Instruction
Lectures, seminars and tutoring.

Examination
The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).
The examination consists of written assignments and an oral test.

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.

Required Reading and Additional Study Material
Required Reading
Anders Tengstrand. *Åtta kapitel om geometri*. Studentlitteratur, 2005. 240 (311) pages.