



## DEPARTMENT OF MATHEMATICAL SCIENCES

### **MMG110 Geometry, 7.5 credits**

Geometri, 7,5 högskolepoäng

*First Cycle*

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#### **Confirmation**

This course syllabus was confirmed by Department of Mathematical Sciences on 2017-06-26 to be valid from 2017-07-01, autumn semester of 2017.

*Field of education:* Science 100%

*Department:* Department of Mathematical Sciences

#### **Position in the educational system**

The course is given as a freestanding course, normally during the summer. It is intended for an interested public and, not least, teachers in mathematics.

*Main field of studies*

Mathematics

*Specialization*

G1N, First Cycle, has only upper-secondary level entry requirements

#### **Entry requirements**

General entrance requirements for university studies and the Swedish upper secondary course Mathematics E or Mathematics 4 or equivalent.

#### **Learning outcomes**

On successful completion of the course the student will be able to:

- formulate and prove the classical theorems of Euclidean geometry in the plane,
- apply these theorems to solve concrete geometric problems,
- demonstrate an understanding of the axiomatic structure of geometry,
- demonstrate an understanding of classical models of neutral geometry.

**Course content**

Classical theorems in Euclidean geometry in the plane. Proving theorems and solving problems in geometry. Axioms - the foundation of geometry. Different axiomatizations of Euclidean geometry. Neutral and non-Euclidian geometry. Classical theorems in neutral geometry. Hyperbolic geometry. The models of Klein and Poincaré for non-Euclidian geometry. Spherical geometry.

**Form of teaching**

*Language of instruction:* Swedish

**Assessment**

The course is assessed through a written examination at the end of the course. During the course, there may be optional assignments that give bonus points on the exam. Examples of such assignments are small written tests, labs, and oral or written presentations. Information for the current course instance is given via the course homepage.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

**Grades**

The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

**Course evaluation**

The course is evaluated with an anonymous questionnaire and/or a discussion with the student representatives. The result and any changes to the course will be communicated to the students who carried out the evaluation and to the students who are to start the course.

**Additional information**

For literature list, see:

<https://www.chalmers.se/sv/institutioner/math/utbildning/grundutbildning-goteborgs-universitet/kurslitteratur/Sidor/Kurslitteratur-i-matematik.aspx>

The course syllabus of MMG110 was originally established to apply from 15/12/2007, then it replaced MAN050.