

## **MATM13, Mathematics: Differential Geometry, 7.5 credits**

*Matematik: Differentialgeometri, 7,5 högskolepoäng*

Second Cycle / Avancerad nivå

---

### **Details of approval**

The syllabus was approved by Study programmes board, Faculty of Science on 2007-03-01 to be valid from 2007-07-01, autumn semester 2007.

### **General Information**

The course is an elective course for second-cycle studies for a Degree of Master of Science (120 credits) in mathematics.

*Language of instruction:* English and Swedish

*Main field of studies*

Mathematics

*Depth of study relative to the degree requirements*

A1N, Second cycle, has only first-cycle course/s as entry requirements

### **Learning outcomes**

The aim of the course is that the student on completion of the course should:

- have developed the ability to communicate mathematics in speech and writing,
- be familiar with basic concepts and methods within differential geometry,
- had acquired basic knowledge for further studies in differential geometry.

### **Course content**

Geometry for hypersurfaces in Euclidean spaces. The Gauss map, curvature, focal points, minimal surfaces, convex surfaces, the Gauss-Bonnet theorem in 2 dimensions.

## Course design

The teaching consists of lectures and seminars. Compulsory assignments may occur during the course.

## Assessment

The examination consists of a written examination followed by an oral examination. The oral examination may only be taken by those students who passed the written examination. Students who fail the ordinary written examination are offered a resit examination shortly thereafter.

*Subcourses that are part of this course can be found in an appendix at the end of this document.*

## Grades

Marking scale: Fail, Pass, Pass with distinction.

## Entry requirements

For admission to the course, English B as well as at least 60 credits in mathematics are required.

## Further information

The course may not be included in a degree together with MAT313 Differential geometry 5 credits.

## Subcourses in MATM13, Mathematics: Differential Geometry

Applies from H07

0701 Differential Geometry, 7,5 hp  
Grading scale: Fail, Pass, Pass with distinction