

Syllabus

for course at advanced level

Differential geometry
Differentialgeometri

7.5 Higher Education
Credits
7.5 ECTS credits

Course code:	MM8022
Valid from:	Autumn 2019
Date of approval:	2011-05-16
Changed:	2011-05-16
Department	Department of Mathematics (incl. Math. Statistics)
Main field:	Mathematics/Applied Mathematics
Specialisation:	A1F - Second cycle, has second-cycle course/s as entry requirements

Decision

This course syllabus was approved by the Board of Science at Stockholm University on 2011-05-16.
Technical revision by the Student Office 2019-04-25.

Prerequisites and special admittance requirements

For admission to the course, knowledge is required equivalent to 90 credits in Mathematics including the course Elementary differential geometry, 7,5 credits (MM8010) or equivalent. English B/English 6 or equivalent.

Course structure

Examination code	Name	Higher Education Credits
HELA	Differential geometry	7.5

Course content

The course covers: Differentiable manifolds and maps, tangent vectors, vector bundles, differential forms, Stoke's theorem, de Rham cohomology, Riemannian metric, curvature.

Learning outcomes

After the course the student should be able to account for and prove central theorems in Differential geometry.

Education

Instruction consists of lectures and exercises.

Forms of examination

a. The course is examined as follows: Assessment takes place through written assignments and oral exam.

b. Grading: The course's final grade is set according to a seven-point criterion-referenced scale:

A = Excellent

B = Very good

C = Good

D = Satisfactory

E = Adequate

Fx = Failed, some additional work is required

F = Failed, much additional work is required

c. The course's grading criteria are handed out at the start of the course.

d. A passing final grade requires at least the grade E.

e. Students who receive a failing grade on a regular examination are allowed to retake the examination at least four times as long as the course is still provided. Other mandatory course elements are equated with examinations. A student who has received a passing grade on an examination may not retake the examination to attain a higher grade. A student who has failed the same examination twice has the right to request that a different teacher be appointed to set the grade of the course. Such requests should be made to the department board.

f. Students awarded the grade Fx are given the opportunity to improve their grade to E. The examiner decides on the supplementary assignments to be performed and the pass mark criteria. The supplementary assignments will take place before the next examination opportunity.

Interim

Students may request that the examination be conducted in accordance with this course plan even after it has ceased to be valid. However, this may not take place more than three times over a two-year period after the course was discontinued. Requests must be made to the departmental board.

Misc

This course can be part of the Master's Programmes in Mathematics and in Applied Mathematics, but may also be taken as a separate course.

Required reading

The required reading is decided by the department board and is then appended to the syllabus.