COURSE DETAIL

DIFFERENTIAL GEOMETRY

Country
Sweden

Host Institution
Lund University

Program(s)
Lund University

UCEAP Course Level
Upper Division

UCEAP Subject Area(s)
Mathematics

UCEAP Course Number
188

UCEAP Course Suffix

UCEAP Official Title
DIFFERENTIAL GEOMETRY

UCEAP Transcript Title
DIFFERENTAL GEOMTRY

UCEAP Quarter Units
6.00

UCEAP Semester Units
4.00

Course Description

The course providers an introduction to classic differential geometry, important for further studies in the subject and in relevant areas of physics. The course treats the geometry of curves and surfaces, especially in three dimensions. In particular, the concepts of curvature and torsion are studied. The course covers: The geometry of curves in Euclidean space, their curvature and torsion and how these determine the curves. The geometry of surfaces in Euclidean space, their first and second fundamental forms, the Gauss map, principal curvatures, Gaussian curvature and mean curvature. Theorema Egregium and a deep analysis of geodesics and their behavior both locally and globally. Gauss-Bonnet's Theorem: two different local versions and the famous global version.

Language(s) of Instruction
English

Host Institution Course Number
MATM33

Host Institution Course Title
DIFFERENTIAL GEOMETRY

Host Institution Campus
Lund

Host Institution Faculty
Science

Host Institution Degree

Host Institution Department

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