

# Introduction to Geometric Modeling

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**Timetable:** 16 hours, Torre Archimede, Room 2BC/30:

Tuesday June 26, 2012	10:30-13:00	14:00-16:30
Wednesday June 27, 2012	10:30-13:00	14:00-16:30
Thursday June 28, 2012	10:30-13:00	14:00-16:30

**Course requirements:** None.

**Examination and grading:** Oral exam.

**SSD:** MAT/08 Numerical Analysis

**Aim:**

Digital 3D models are in high demand in the film and gaming industry, product design and manufacturing, architecture, surgical simulation and planning, medical prosthesis design and more. 3D Geometric models are the basis of all modern Computer-Aided Design and Manufacturing systems (CAD/CAM).

Geometric modeling studies methods for the mathematical description of shapes and combines approaches from numerical analysis, approximation theory, and differential geometry for the representation and manipulation of curves and surfaces. This course is concerned with fundamental concepts of geometric modeling.

**Course contents:**

Geometric primitives for modeling (polygonal meshes, spline/NURBS surfaces, subdivision surfaces), modeling tools, CAD software and application examples.