

Course Announcement:

Advanced Differential Geometry (2026W)

201GEOMADGV24, LVA-Nr. 356170

Course Instructor: Bert Jüttler

Exercises: 201GEOMADGU24, 356171;

Instructor: Elio Skenderaj

Higher Differential Geometry serves as a foundational language for modern science and engineering. This course offers a practical introduction to the key ideas of exterior differential forms and differential geometry that underpin both classical and contemporary developments in physics and engineering.

We begin by building geometric intuition through a substantial exploration of surfaces in three-dimensional space, before moving on to more abstract concepts in differential geometry. The course is designed for graduate students and advanced undergraduates in physics, engineering, and mathematics.

Primary reference: **Theodore Frankel**, "**The Geometry of Physics**" (Cambridge University Press; editions 1990, 2001, 2007, 2012).

Prerequisites: basic calculus and linear algebra (or standard engineering mathematics). Prior coursework in elementary differential geometry is not required.