Module:	**Elective Advanced Lectures:** **BCGS Courses**
Module No.: physics70d	

Course: **Geometry in Physics (T)**

Course No.:

Category	Type	Language	Teaching hours	CP	Semester
Elective	Lecture with exercises	English	4+2	8	ST

Requirements for Participation:

Preparation:
Training in theoretical physics at the B.Sc. level

Form of Testing and Examination:
Written or oral examination

Length of Course:
1 semester

Aims of the Course:
The course introduces the background in differential geometry necessary to understand the geometrically oriented languages of modern theoretical physics. Applications include the coordinate invariant formulation of electrodynamics, phase space and symplectic mechanics, and a brief introduction to the foundations of general relativity.

Contents of the Course:
exterior calculus
manifolds
Lie groups
fibre bundles

Recommended Literature:
M. Göckeler & T. Schücker, Differential geometry, gauge theory, and gravity, Cambridge University Press, 1987.