Module title | Abbreviation
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Introduction to Differential Geometry for Mathematical Physics | 10-M-DGEP-152-m01

Module coordinator | Module offered by
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Dean of Studies Mathematik (Mathematics) | Institute of Mathematics

ECTS | Method of grading | Only after succ. compl. of module(s)
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10 | numerical grade | --

Duration | Module level | Other prerequisites
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1 semester | undergraduate | --

Contents
Curves in Euclidean spaces, curvature, Frenet equations, local classification, submanifolds (hypersurfaces in particular) in Euclidean spaces, curvature of hypersurfaces, geodesics, isometries, main theorem on local surface theory, special classes of surfaces.

Intended learning outcomes
The student knows and masters the essential methods and basic notions in differential geometry. He/She is acquainted with the central concepts in this field, and is able to apply the fundamental proof methods independently.

Courses (type, number of weekly contact hours, language — if other than German)
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Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)
a) oral examination of one candidate each (15 to 30 minutes) or b) oral examination in groups of 2 candidates (10 to 15 minutes each)
Assessment will have reference to a topic in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-field Gesamtüberblick Mathematische Methoden (Overview Mathematical Methods) or in module group Ergänzung Mathematik (Supplementary Topics in Mathematics).
Assessment offered: In the semester in which the course is offered and in the subsequent semester
Language of assessment: German and/or English creditable for bonus

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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Module appears in
Bachelor' degree (1 major) Mathematical Physics (2015)
Bachelor' degree (1 major) Mathematical Physics (2016)