

Module title		Abbreviation
Geometric Analysis		10-M-GAN-222-m01
Module coordinator		Module offered by
Dean of Studies Mathematik (Mathematics)		Institute of Mathematics
ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
Submanifolds of \mathbb{R}^n and regular value theorem; submanifolds with and without boundary; orientation; differential forms and exterior derivative; Stokes' theorem for differential forms; Hodge star operator; Stokes' theorem and its special cases Gauss' theorem and Green's theorem; outlook on further topics like density or submanifolds with corners.		
Intended learning outcomes		
The student is acquainted with the fundamental concepts and methods in geometric analysis. He/she is able to apply these methods to practical problems.		
Courses (type, number of weekly contact hours, language – if other than German)		
V (4) + Ü (2)		
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) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus		
Allocation of places		
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Additional information		
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Workload		
300 h		
Teaching cycle		
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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 Data Science (2022) exchange program Mathematics (2023)		