Module description

Module title					Abbreviation
Overview Projective Geometry and Number Theory					10-M-PGZT-Ü-152-m01
Module coordinator				Module offered by	
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathematics	
ECTS Method of grading		Only after succ. compl. of module(s)			
12 numerical		rical grade			
Duration		Module level	Other prerequisites		
1 semester		undergraduate			
Contents					
Projective and affine planes, projective and affine spaces, theorem of Desargues, fundamental theorems for pro- jective spaces, dualities and polarities of projective spaces; elementary properties of divisibility, prime numbers and prime number factorisation, modular arithmetics, prime tests and methods for factorisation, structure of the residue class rings, theory of quadratic remainders, quadratic forms, diophantine approximation and diophanti- ne equations.					
Intended learning outcomes					
The student is acquainted with fundamental concepts and methods in number theory and projective geometry. He/She is able to relate these concepts with one another, and realises the advantages of thinking across the borders of different branches in mathematics.					
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)					
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English					
Allocation of places					
Additional information					
Workload					
360 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Mathematics (2015) Bachelor' degree (1 major) Computational Mathematics (2015)					
Bachelor' degree (1 major) Mathematics (2023)					

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