

# BMS Basic Course Dictionary

Basic	Area	BMS Course	FU Course Name	HU Course Name	TU Course Name
	1: Differential geometry, global analysis, and mathematical physics	Analysis and geometry on manifolds	Differentialgeometrie II	Differentialgeometrie I	Differentialgeometrie II
		Riemannian geometry	Differentialgeometrie II	Differentialgeometrie II	
	2: Algebraic and arithmetic geometry, number theory	Commutative algebra	Algebra I	Algebra II	Algebra II
		Algebraic geometry	Algebra II	Algebraische Geometrie I	Algebraic Geometry I
		Number theory	Number Theory II	Algebraische Geometrie II	
	3: Stochastics and mathematical finance	Stochastic processes I: discrete time	Stochastik II	Stochastik II	Wahrscheinlichkeitstheorie II
		Stochastic processes II: continuous time	Stochastik III	Stochastische Analysis	Wahrscheinlichkeitstheorie III
	4: Discrete mathematics and optimization	Combinatorics	Diskrete Mathematik I		Diskrete Strukturen I / Kombinatorik
		Discrete optimization	Algorithmic Combinatorics		Algorithmische Diskrete Mathematik I
Nonlinear optimization			Nichtlineare Optimierung	Nichtlineare Optimierung	
5: Geometry, topology, and visualization	Classical geometries	Geometrie		Geometrie I	
	Discrete geometry	Diskrete Geometrie I		Diskrete Geometrie / Konvexgeometrie I	
	Discrete differential geometry and visualization	Scientific Visualization		Geometrie II	
	Algebraic topology	Topologie I	Topologie I	Topologie	
6: Numerical analysis and scientific computing	Numerical methods for ODEs and numerical linear algebra	Numerik II	Numerik gewöhnlicher Differentialgleichungen	Numerische Mathematik II	
	Numerical methods for PDEs	Numerik III	Numerik partieller Differentialgleichungen	Numerik partieller Differentialgleichungen	
7: Applied analysis and differential equations	Dynamical systems	Dynamical Systems II		Mathematische Physik I	
	Partial differential equations	Differentialgleichungen I	Partielle Differentialgleichungen	Differentialgleichungen IIA + Differentialgleichungen IIB	
	Functional analysis	Funktionalanalysis	Funktionalanalysis	Funktionalanalysis I	
8: Mathematics of data science	Statistical methods for data science		Methoden der Statistik		
	Analysis of high-dimensional data		Nichtparametrische Statistik	Funktionalanalysis III	

Additional	Complex analysis	Funktionentheorie		Komplexe Analysis I
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