Master of Mathematics (Universität Duisburg-Essen)

Q: What do we offer? A: A four semester (two year) Master study in Mathematics.
Q: What do we require? A: A Bachelor degree in Mathematics (or a similar degree) and good English skills.
Q: What degree can I obtain? A: Master in Mathematics!
Q: Where do I study? A: All courses take place in the WSC-building at the Campus in Essen.

How our master program is organized — lectures

expanding area	deepening area
Specialization Algebra	
Algebraic geometry I	Algebraic geometry II
Algebraic topology	Complex geometry II
Algebraic number theory II	Riemann surfaces II
Analytic number theory I	Special topics in algebraic geometry
Complex geometry I	Special topics in complex geometry
Modular forms I	Special topics in number theory
Riemann surfaces I	
Specialization Analysis	
Differential geometry I	Analysis and numerics of interpolation spaces
Differentiable manifolds	Analysis of variational inequalities
One-dimensional calculus of variations	Evolution equations
Functional analysis II	Nonlinear functional analysis
Minimal surfaces	Special topics in analysis
Riemannian geometry I	
Calculus of variations I	
Specialization Numerical Mathematics	
Mixed finite element methods	Multigrid and domain decomposition methods
Numerical analysis for evolution equations	Theory and numerics of variational inequalities
	Geometric partial differential equations: theory and numerics
	Special topics in numerical mathematics
Specialization Optimization	
Mathematical game theory	Shape optimization
Mathematical imaging	Industrial applications of mathematical optimization
Stochastic programming	Nonsmooth analysis and optimization
Calculus of variations and optimal control	Numerical solution and optimization of large nonlinear systems
	Numerical analysis of optimal control problems
	Optimal control of partial differential equations
	Special topics in inverse problems
	Special topics in optimization
Specialization Stochastics	
Probability theory II	Special topics in applied stochastics
	Aspects in risk management
	Machine learning
	Numerical stochastic processes
	Theory of large deviations
	Time series analysis
	Continuous-time financial mathematics
	Special topics in stochastic analysis
	Special topics in stochastic processes

How to study? (1) You choose an area of specialization, your focal area.
That is an element of the set $S = \{$Algebra, Analysis, Numerical Mathematics, Optimization, Stochastics$\}$.
(2) In the first three semesters you have to master 10 lectures or seminars (at least three in your focal area, at least two outside your focal area, at least two in the deepening area, at least two seminars, not more than five seminars)
(3) In your last semester you write under supervision your master thesis.
That's it!