

**Overview Courses<sup>1</sup>**  
**Master Computational Mathematics**  
**Summer Term 2026**

**Module Group: “Algebra, Geometry and Cryptography”:**

**Computational Algebraic Geometry** (Prof. Dr. Kreuzer)

**Cryptography** (Prof. Dr. Zumbrägel)

**Seminar:**

- **Logic and Geometry** (Prof. Dr. Kaiser, Prof. Dr. Müller)
- **NOCAS** (Prof. Dr. Kreuzer)
- **Permutationspuzzles** (Prof. Dr. Kreuzer)

**Module Group : “Mathematical Logic and Discrete Mathematics”:**

**Coding Theory** (Prof. Dr. Kreuzer)

**Combinatorial Number Theory** (Prof. Dr. Glock)

**Computational Complexity Theory** (Prof. Dr. Müller)

**Efficient Algorithms** (Dr. Dang)

**Theory of Evolutionary Computation** (Prof. Dr. Sudholt)

**Seminar:**

- **Logic and Geometry** (Prof. Dr. Kaiser, Prof. Dr. Müller)
- **Recent Breakthroughs in Ramsey Theory** (Prof. Dr. Glock)

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<sup>1</sup>No guarantee on completeness and correctness.

**Module Group: “Analysis, Numerics and Approximation Theory”:**

**Seminar:**

- **Mathematical Aspects of Artificial Neural Networks** (Prof. Dr. Prochno)

**Module Group: “Dynamical Systems and Optimization”:**

**Dynamic Network Flows** (Dr. Graf)

**Module Group: “Stochastics, Statistics”:**

**Classical Limit Theorems & Large Deviations Theory** (Prof. Dr. Prochno)

**Seminar:**

- **Diskrete Stochastische Prozesse** (PD Dr. Gilch)
- **Mathematical Data Science** (Prof. Dr. Rudolf)

## **Module Group: “Data Analysis and Data Management and Programming”:**

**Advanced Data Analytics** (Dr. Jucknewitz)

**Computational Linguistics** (Prof. Dr. Hautli-Janisz)

**Data Science Lab** (Prof. Dr. Granitzer)

**Deep Learning for Natural Language and Codes** (Prof. Dr. Herbold)

**Efficient Algorithms** (Dr. Dang)

**Functional Programming** (Prof. Dr. Griebel)

**Machine Learning Lab** (Prof. Dr. Granitzer)

**Multimedia Databases** (Prof. Dr. Kosch)

**Network Science** (Prof. Dr. Granitzer)

**Practical Parallel Programming** (Dr. Größlinger)

**Theory of Evolutionary Computation** (Prof. Dr. Sudholt)

## **Module Group: “Applications”:**

**Corporate Finance and Capital Markets** (Prof. Dr. Entrop)

**Marketing Research** (Prof. Dr. Totzek)

**Quantitative Methods in Finance** (Prof. Dr. Entrop)

**Topics in Applied Econometrics** (Prof. Dr. Schnurbus)