### Module title
Mathematics 3 for students in Computer Science

### Abbreviation
10-M-INF3-072-m01

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

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<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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<tr>
<td>8</td>
<td>numerical grade</td>
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### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
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### Contents
Elementary algebra and number theory: cardinality of sets, relations, maps, groups, fields, residue class rings and polynomial rings, prime numbers, basics in cryptography. Discrete mathematics: graph theory, combinatorics, integral optimisation and algorithmic applications. Discrete stochastics: combinatorics, basic notions in probability theory, random variables, expected value and variance, independency, Bayes' law, important distribution functions, Markov chains, tests.

### Intended learning outcomes
The student gets acquainted with fundamental concepts and methods of advanced mathematics. He/She learns to apply these methods to problems in natural and engineering sciences, in particular in computer science, and is able to interpret the results.

### Courses
(V + Ü (no information on SWS (weekly contact hours) and course language available)

### Method of assessment
written examination (90 minutes)

### Allocation of places
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### Additional information
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### Referred to in LPO I
(examination regulations for teaching-degree programmes)

### Module appears in
Bachelor’ degree (1 major) Computer Science (2007)