## Module description

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<th>Module title</th>
<th>Abbreviation</th>
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<tr>
<td>Computational Mathematics, advanced</td>
<td>10-M-COMg-082-m01</td>
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### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
4

### Method of grading
(only after successfully completed)

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
Admission prerequisite to assessment: regular attendance of exercises (attendance monitored, a maximum of one incident of unexcused absence).

### Contents
Introduction to modern mathematical software for symbolic computation (e.g., Mathematica or Maple) and numerical computation (e.g., Matlab) to supplement the basic modules in analysis and linear algebra (10-M-ANA, 10-M-ANL and 10-M-LNA). Computer-based solution of problems in linear algebra, geometry, analysis, in particular differential and integral calculus; visualisation of functions.

### Intended learning outcomes
The student learns the use of advanced modern mathematical software packages, and is able to assess their fields of application to solve mathematical problems.

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

### Method of assessment
Project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course)
Assessment offered: once a year, summer semester
Language of assessment: German, English if agreed upon with the examiner

### Allocation of places
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### Additional information
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### Referred to in LPO I
(examination regulations for teaching-degree programmes)
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### Module appears in
- Bachelor’ degree (1 major) Mathematics (2008)
- Bachelor’ degree (1 major) Nanostructure Technology (2010)
- Bachelor’ degree (1 major) Economathematics (2009)
- Bachelor’ degree (1 major) Economathematics (2008)
- Bachelor’ degree (1 major) Mathematical Physics (2009)
- Bachelor’ degree (1 major) Computational Mathematics (2009)
- Master’s degree (1 major) Technology of Functional Materials (2009)
- Bachelor’s degree (1 major, 1 minor) Mathematics (Minor, 2008)
- First state examination for the teaching degree Gymnasium Mathematics (2009)