### Module title
Computational Mathematics, advanced

### Abbreviation
10-M-COMg-082-m01

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

### Module offered by
Institute of Mathematics

### ECTS
4

### Method of grading
Only after succ. compl. of module(s)

### (not) successfully completed
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### 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
(No information on SWS (weekly contact hours) and course language available)

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### 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)