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| <b>Module title</b>  |                              | <b>Abbreviation</b>   |
| Mathematics and Computer   |                              | 10-M-MCO-122-m01  |
| <b>Module coordinator</b>  |                              | <b>Module offered by</b>  |
| Dean of Studies Mathematik (Mathematics)   |                              | Institute of Mathematics  |
| <b>ECTS</b>  | <b>Method of grading</b>     | <b>Only after succ. compl. of module(s)</b>   |
| 7  | (not) successfully completed | --  |
| <b>Duration</b>  | <b>Module level</b>          | <b>Other prerequisites</b>  |
| 2 semester   | undergraduate                | By way of exception, additional prerequisites are listed in the section on assessments. |
| <b>Contents</b>  |                              |   |
| Basics of a modern programming language (e. g. C or Fortran) taking into account the particular needs in mathematics.; introduction to modern mathematical software for symbolic computation (e. g. Mathematica or Maple) and numerical computation (e. g. Matlab); computer-based solution of problems in linear algebra, geometry, analysis, in particular differential and integral calculus; visualisation of functions.   |                              |   |
| <b>Intended learning outcomes</b>  |                              |   |
| The student is able to work on small programming exercises in mathematics. He/She learns the use of advanced modern mathematical software packages, and is able to assess their fields of application to solve mathematical problems.  |                              |   |
| <b>Courses</b> (type, number of weekly contact hours, language — if other than German)   |                              |   |
| This module comprises 2 module components. Information on courses will be listed separately for each module component. <ul style="list-style-type: none"> <li>• 10-M-COM-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>• 10-M-PRG-1-122: P (no information on SWS (weekly contact hours) and course language available)</li> </ul>  |                              |   |
| <b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)   |                              |   |
| Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.   |                              |   |
| <p><b>Assessment in module component 10-M-COM-1-122:</b> Computational Mathematics Computational Mathematics</p> <ul style="list-style-type: none"> <li>• 4 ECTS, Method of grading: (not) successfully completed</li> <li>• project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course)</li> <li>• Language of assessment: German, English if agreed upon with the examiner</li> <li>• Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.</li> </ul> <p><b>Assessment in module component 10-M-PRG-1-122:</b> Programming course for students of Mathematics and other subjects</p> <ul style="list-style-type: none"> <li>• 3 ECTS, Method of grading: (not) successfully completed</li> <li>• project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course)</li> <li>• Language of assessment: German, English if agreed upon with the examiner</li> <li>• Other prerequisites: Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will</li> </ul> |                              |   |

put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

**Allocation of places**

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**Additional information**

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**Workload**

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**Teaching cycle**

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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 (2012)  
 Bachelor' degree (1 major) Mathematics (2013)  
 Bachelor' degree (1 major) Computational Mathematics (2012)  
 Bachelor' degree (1 major) Computational Mathematics (2013)