

<b>Module title</b>		<b>Abbreviation</b>
Computational Mathematics		10-M-COM-152-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>
4	(not) successfully completed	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
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-G and 10-M-LNA-G). 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 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)		
V (1) + Ü (2)		
<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)		
project in the form of programming exercises (approx. 20 to 25 hours) Assessment offered: Once a year, winter semester Language of assessment: German and/or English		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
120 h		
<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
§ 22 II Nr. 3 f)		
<b>Module appears in</b>		
Bachelor' degree (1 major) Mathematics (2015) Bachelor' degree (1 major) Physics (2015) Bachelor' degree (1 major) Nanostructure Technology (2015) Bachelor' degree (1 major) Economathematics (2015) Bachelor' degree (1 major) Mathematical Physics (2015) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Functional Materials (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) Bachelor' degree (1 major) Mathematical Physics (2016) Bachelor' degree (1 major) Economathematics (2017) First state examination for the teaching degree Gymnasium Mathematics (2019) Bachelor' degree (1 major) Physics (2020)		

Bachelor' degree (1 major) Nanostructure Technology (2020)  
Bachelor' degree (1 major) Mathematical Physics (2020)  
Bachelor' degree (1 major) Functional Materials (2021)  
Bachelor' degree (1 major) Quantum Technology (2021)  
Bachelor' degree (1 major) Economathematics (2021)  
Bachelor' degree (1 major) Economathematics (2022)  
Bachelor' degree (1 major) Mathematical Data Science (2022)  
exchange program Mathematics (2023)  
First state examination for the teaching degree Gymnasium Mathematics (2023)  
Bachelor' degree (1 major) Mathematics (2023)  
Bachelor' degree (1 major) Economathematics (2023)