

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Computer Science as a Bachelor's with 1 major with the degree "" (180 ECTS credits)

Responsible: Faculty of Mathematics and Computer Science
Responsible: Institute of Computer Science

Examination regulations version: 2025
Examination regulations version: 2025

Abbreviations used: Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **V** = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions for the modules in this SFB: Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.

Information on assessment procedures: Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with the general regulations governing the degree subject described in this module catalogue:

ASPO2015

associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

??-??-20?? (2025-??)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

Every module will be described using the following form:

Abbreviation	Module title						
	ECTS		Duration	(in semesters)	Method of grading		Module level
	Courses		To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y				
	Method of assessment						
	Only after successful completion of		if applicable				
	Other prerequisites		if applicable				
	Participants and allocation of places		if applicable				
	Additional information		if applicable				
	Referred to in LPO I		if applicable (examination regulations for teaching-degree programmes)				

Compulsory Courses (120 ECTS credits)								
Computer Science (80 ECTS credits)								
10-I-GdP-172-m01	Fundamentals of Programming							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 1 b) § 69 I Nr. 1 b)					
10-I-ADS-152-m01	Algorithms and data structures							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 1 a) § 69 I Nr. 1 a)					
10-I-SE-252-m01	Software Engineering							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 49 I Nr. 1 b) § 69 I Nr. 1 b)					

10-I-PP-191-m01	Practical Course in Programming							
	ECTS	10	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (6)						
	Method of assessment	practical examination (programming exercises, approx. 240 hours) and written examination (approx. 60 to 120 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).						
	other prerequisites	Intended learning outcomes of the following module are required: 10-I-GdP. It is therefore strongly recommended to complete this before.						
	Referred to in LPO I	§ 49 I Nr. 1 c) § 69 I Nr. 1 d)						
10-I-SWP-252-m01	Practical course in software							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (6)						
	Method of assessment	practical project (Completion of a larger software project in groups (approx. 300 hours per person) and final presentation (approx. 10 minutes per group)						
	Modules successfully completed	10-I-PP, 10-I-SE						
	other prerequisites	In addition, the knowledge and skills acquired in module 10-I-ADS are required. Prior attendance of this module is therefore highly recommended.						
Referred to in LPO I	§ 69 I Nr. 1 d)							
10-I-RAL-252-m01	Digital computer systems							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b), § 69 I Nr. 1 c)						
	10-I-RIÜ-191-m01	Computer Networks and Information Transmission						
ECTS		10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
Courses		V (4) + Ü (2)						
Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus						
Referred to in LPO I		§ 22 II Nr. 3 b), § 69 I Nr. 1 c)						

10-I-DB-152-m01	Databases							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 49 I Nr. 1 b) § 69 I Nr. 1 b)						
10-I-MCS-242-m01	Introduction into Human-Computer Interaction							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (1)						
	Method of assessment	a) written examination (approx. 120 minutes) or b) presentation (30 to 60 minutes) or c) oral examination of one candidate each (30 to 60 minutes) Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I-HWP-152-m01	Practical course in hardware							
	ECTS	10	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (6)						
	Method of assessment	portfolio: completion of approx. 3 to 10 project assignments (approx. 250 hours total) and presentation of results (approx. 10 minutes per project)						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
Theoretical Informatics (10 ECTS credits)								
10-I-TI-242-m01	Theory of Computation							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus						
	Referred to in LPO I	§ 49 I Nr. 1 a) § 69 I Nr. 1 a)						

Mathematics (30 ECTS credits)								
10-I-LOG-152-m01	Logic for informatics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-M-INF1-152-m01	Mathematics 1 for students in Computer Science							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2) Module taught in: Ü: German or English					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
10-M-INF2-152-m01	Mathematics 2 for students in Computer Science							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2) Module taught in: Ü: German or English					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
10-I-AGT-152-m01	Algorithmic Graph Theory							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					

Compulsory Electives (30 ECTS credits)								
Software technology and artificial intelligence (5 ECTS credits)								
10-I-MSE-252-m01	Model-based Systems Engineering							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-AI-252-m01	Introduction to AI							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of exam: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-DM-242-m01	Data Science							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					

Computer Science (15 ECTS credits)								
10-I-SEC-191-m01	IT Security							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
10-I-ICG-152-m01	Interactive Computer Graphics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-MSE-252-m01	Model-based Systems Engineering							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-AI-252-m01	Introduction to AI							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of exam: German and/or English creditable for bonus					

10-I-DM-242-m01	Data Science							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I-DL-222-m01	Deep Learning							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I-TML-222-m01	Theory of Machine Learning							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2) Module taught in: German and/or English						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I-APR-172-m01	Advanced Programming							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						

10-I-KT-191-m01	Computational Complexity							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-KD-191-m01	Cryptography and Data Security							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-3D-152-m01	3D Point Cloud Processing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					

10-I-BS-242-m01	Operating Systems							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b), § 69 I Nr. 1 c)					
10-I-RAK-152-m01	Computer Architecture							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b) § 69 I Nr. 1 c): Rechnerarchitektur					
10-I-SKS-242-m01	Control Principles of Modern Communication Systems							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I							
10-GE-ASP-252-m01	Audio Signal Processing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + T (2) Module taught in: German or English					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I							

10-I-EidO-252-mo1	Introduction to Optimization							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü (2) Module taught in: German or English					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of exam: German and/or English creditable for bonus					
10-I-MuS-212-mo1	Modeling and Simulation							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes) if announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-I-GI-152-mo1	Selected Basics of Computer Science							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
subsidiary subject								
Students must select one of the minors offered and must achieve the required number of ECTS credits in this minor.								
Mathematics								
10-M-DI-Maf-152-mo1	Introduction to Discrete Mathematics for students of other subjects							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					

10-M-NUM1af-152-mo1	Numerical Mathematics 1 for students of other subjects							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
10-M-STO-1af-152-mo1	Stochastics 1 for students of other subjects							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
10-M-ZT-Haf-152-mo1	Introduction Into Number Theory for students of other subjects							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
10-M-DGLaf-152-mo1	Ordinary Differential Equations for students of other subjects							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4) + Ü (2)					
	Method of assessment		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					

10-M-MFD1-252-mo1	Mathematical Foundations of Data Science 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V (2) + Ü (1)						
	Method of assessment	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
10-M-OML-222-mo1	Optimization for Machine Learning							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2) Module taught in: German and/or English						
	Method of assessment	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus						
Physics								
11-EFNF-152-mo1	Introduction to Physics for Students of other Disciplines							
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + V (3)						
	Method of assessment	written examination (60 to 120 minutes)						
	Additional Information	according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh						
11-PFNF-152-mo1	Laboratory Course Physics for Students of other Disciplines							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (4)						
	Method of assessment	a) practical assignment with oral test (approx. 15 minutes, during experiments) and b) written examination (approx. 90 minutes). Each experiment comprises preparation, performance and evaluation. Test as well as performance of experiments can each be repeated once.						
	Participants and allocation of places	Only as part of pool of general transferable skills (ASQ): 10 places (lottery)						
	Additional Information	according to § 2 para. 2 sentence 2 APOLmCh in conjunction with No. I 2nd letter d) and No. I 1st letter d) of annex 1 to the APOLmCh and No. 4 of annex 2 to the APOLmCh						

Economics								
12-EBWL-G-242-m01	Organization							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					
12-Ebus-F-242-m01	E-Business							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 minutes) or b) term paper (approx. 15 pages) or c) term paper (approx. 10 pages) and presentation (approx. 10 minutes); (weighted 2:1) or d) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
12-MDT-242-m01	Management & Digital Transformation							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 minutes) or b) term paper (15 to 20 pages) or c) term paper (10 to 15 pages) and presentation (approx. 20 minutes); (weighted 2:1) or d) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus					
12-ExtUR-G-242-m01	Accounting							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					
12-IntUR-G-242-m01	Managerial Accounting							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					

12-BPL-G-242-m01	Operations Management							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 minutes) or b) portfolio (approx. 20 hours) Language of assessment: German and/or English creditable for bonus					
12-I&F-G-242-m01	Investment and Finance							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					
12-Mark-G-242-m01	Marketing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2) Module taught in: German and/or English					
	Method of assessment		written examination (approx. 60 minutes) Language of assessment: German and/or English creditable for bonus					
12-WiPo-G-242-m01	Public Policy							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 minutes) or b) portfolio (approx. 20 hours) Language of assessment: German and/or English creditable for bonus					
12-Mik2-G-242-m01	Microeconomics: Markets and Competition							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2) Module taught in: German and/or English					
	Method of assessment		written examination (approx. 60 minutes) Language of assessment: German and/or English creditable for bonus					

Linguistics								
o4-DtLABA-BM-SW-241-m01	Level One Module German Linguistics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + S (2)						
	Method of assessment	written examination (approx. 75 minutes)						
	Referred to in LPO I	§ 43 I Nr. 2 b) § 63 I Nr. 2 b)						
o4-DtLABA-AM-SW1-241-m01	Level Two Module Grammatical Structures of German							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (1) + S (2)						
	Method of assessment	written examination (approx. 75 minutes)						
	Referred to in LPO I	§ 43 I Nr. 2 b) § 63 I Nr. 2 b)						
Biology								
07-1A1TI-152-m01	Evolution and the Animal Kingdom							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (3)						
	Method of assessment	written examination (approx. 60 minutes) creditable for bonus						
	other prerequisites	Admission prerequisite to assessment: exercises. Regular attendance (minimum 80%) and successful completion of exercises (approx. 25 to 30 hours) are prerequisites for admission to assessment.						
	Referred to in LPO I	§ 41 I Nr. 1 (4 ECTS credits) and § 41 I Nr. 4 (1 ECTS credits) § 61 I Nr. 1 (4 ECTS credits) and § 61 I Nr. 4 (1 ECTS credits)						
07-2A2GEN-V-152-m01	Genetics, Neurobiology, Behaviour							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3)						
	Method of assessment	written examination (approx. 60 to 90 minutes) creditable for bonus						
	other prerequisites	Admission prerequisite to assessment: exercises. Regular attendance (minimum 80%) and successful completion of exercises (approx. 25 to 30 hours) are prerequisites for admission to assessment.						
	Referred to in LPO I	§ 61 I Nr. 2 (2 ECTS credits) § 61 I Nr. 3 (1 ECTS credits) § 61 I Nr. 4 (1 ECTS credits)						
07-M-BST-152-m01	Mathematical Biology and Biostatistics							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 minutes) creditable for bonus						
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07-3A3OE-KO-152-m01	Plant and Animal Ecology							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	written examination (approx. 90 minutes) creditable for bonus						
	Referred to in LPO I	§ 61 I Nr. 4						
07-3A3GEM-T-152-m01	Genes, Molecules, Technologies							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4)						
	Method of assessment	written examination (approx. 90 minutes) creditable for bonus						
Law								
02-G&Hre-G-212-m01	Commercial and Business Law for Economics and Management							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	written examination (approx. 120 minutes) Assessment offered: Usually once a year, summer semester						
02-EReWi-G-212-m01	Civil Law for Economics and Management							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	written examination (approx. 120 minutes)						
Geography								
04-Geo-FER-NE-152-m01	Introduction to Geographical Remote Sensing							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + T (2) Module taught in: German and/or English						
	Method of assessment	written examination (approx. 45 minutes) Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 66 I Nr. 2						
04-Geo-FER-NA-152-m01	Applications of Remote Sensing in Geography							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + T (2) Module taught in: German and/or English						
	Method of assessment	written examination (approx. 45 minutes) Language of assessment: German and/or English creditable for bonus						

Medicine									
03-M-MT-152-m01	Practical Course in medical terminology								
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	unknown	
	Courses		P (o)						
	Method of assessment		written examination (approx. 60 to 90 minutes)						
03-M-IM-152-m01	Internal Medicine								
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	unknown	
	Courses		V (o)						
	Method of assessment		oral examination (one candidate each: approx. 15 minutes, or groups of up to 3 candidates: approx. 10 minutes per candidate) Assessment will usually have reference to one of the sub-specialities of internal medicine, e. g. cardiology, pulmonology, nephrology, endocrinology, oncology, gastroenterology, rheumatology, infectious disease.						
Key Skills Area (20 ECTS credits)									
General Key Skills (5 ECTS credits)									
In addition to the modules listed below, students may also take modules offered by JMU as part of the pool of general transferable skills (ASQ).									
General Key Skills (subject-specific)									
10-I-TUT1-152-m01	Tutor activity 1								
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses		T (2)						
	Method of assessment		Wrap-up report on tutoring activities (5 to 10 pages)						
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-I-TUT2-152-m01	Tutor activity 2								
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses		T (2)						
	Method of assessment		Wrap-up report on tutoring activities (5 to 10 pages)						
	Referred to in LPO I		§ 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-I-TUT3-152-m01	Tutor activity 3								
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses		T (2)						
	Method of assessment		Wrap-up report on tutoring activities (5 to 10 pages)						

Subject-specific Key Skills (15 ECTS credits)								
10-I-SEM1-152-m01	Seminar - Selected Topics in Computer Science 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	written elaboration (approx. 10 to 15 pages) and presentation (approx. 30 to 45 minutes) with subsequent discussion on a topic from the field of computer science Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
10-I-SEM2-152-m01	Seminar - Selected Topics in Computer Science 2							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	Wrap-up report on tutoring activities (5 to 10 pages) Language of assessment: German and/or English						
10-I-ASV-252-m01	Applied Statistics and Visualization							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	
	Courses	V (1) + P (2)						
	Method of assessment	a) Portfolio (Workload approx. 75 h) or b) Written exam (approx. 60-75 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
10-I-PV-252-m01	Project Presentation							
	ECTS	2	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	S (3)						
	Method of assessment	Presentation of a self-developed project analogous to a trade fair presentation for computer science laypersons with discussion (approx. 10-15 minutes) Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 22 II Nr. 3 b)						
Thesis (10 ECTS credits)								
10-I-BA-152-m01	Bachelor's Thesis Informatics							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	No courses assigned to module						
	Method of assessment	Bachelor's thesis (approx. 50 to 100 pages) Language of assessment: German and/or English						
	Additional Information	Time to complete: 10 weeks.						