Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject
Artificial Intelligence and Data Science as a Bachelor's with 1 major
with the degree "Bachelor of Science" (180 ECTS credits)

Responsible: Faculty of Mathematics and Computer Science

Responsible: Institute of Computer Science

Examination regulations version: 2024

Examination regulations version: 2024

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)):

31-Jan-2024 (2024-7)

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 (115 ECTS credits)							

Artificial Intelligence and Data Science (70 ECTS credits)

10-I-AKIDS1-222-mo1	**Algorithms, AI and Data Science 1**						
	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					

10-I-AKIDS2-222-mo1	**Algorithms, AI and Data Science 2**						
	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					

10-I-PP-KIDS-222-mo1	**Practical Course in Programming for Artificial Intelligence and Data Science**						
	ECTS	10	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (6)					
	Method of assessment		practical examination (programming exercises, approx. 120 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). Language of assessment: German and/or English					
	other prerequisites		Intended learning outcomes of the following module are required: 10-I-GdP. It is therefore strongly recommended to complete this before.					

10-I-KIDS-Lab1-232-mo1	**Artificial Intelligence and Data Science Lab 1**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (6) Module taught in: German and/or English					
	Method of assessment		presentation of project results (30 to 45 minutes) Language of assessment: German or English creditable for bonus					

10-I-KIDS-Lab2-232-m01	**Artificial Intelligence and Data Science Lab 2**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (6) Module taught in: German and/or English					
	Method of assessment		presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus					

10-I-KIDS-Lab3-232-m01	**Artificial Intelligence and Data Science Lab 3**							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (6) Module taught in: German or English					
	Method of assessment		presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus					

10-I-DSML-222-m01	**Data Science & Machine 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					

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					

Computer Science (20 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					

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					
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. 1b § 69 I Nr. 1b					
10-I-ST-KIDS-222-m01	**Software Technology for Artificial Intelligence and 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). creditable for bonus					

Mathematics (25 ECTS credits)

10-M-KIDS1-222-m01	**Mathematics for Artificial Intelligence and Data Science 1**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (5) + 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					

10-M-KIDS2-222-m01	**Mathematics for Artificial Intelligence and Data Science 2**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (5) + 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				
10-M-KIDS3-222-m01	**Mathematics for Artificial Intelligence and Data Science 3**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	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				

Compulsory Electives (35 ECTS credits)

Artificial Intelligence and Data Science (15 ECTS credits)

10-I-CV-222-m01	**Computer Vision**						
	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				
10-I-NLP-222-m01	**Natural Language 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 creditable for bonus				

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)					
	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-AG-KIDS1-222-m01	**Selected Fundamentals of Artificial Intelligence and Data Science 1**							
	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				
10-I-AG-KIDS2-222-m01	**Selected Fundamentals of Artificial Intelligence and Data Science 2**							
	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				

Computer Science (10-20 ECTS credits)

10-I-RAL-152-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				

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				
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				
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-232-m01	**Interactive Computer Graphics**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	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				
	Additional Information		Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): HCI.				

10-I-WBS-152-m01	**Knowledge-based 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. 3b				
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				
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). Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus				
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). Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English creditable for bonus				

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 creditable for bonus				
	Referred to in LPO I		§ 22 II Nr. 3b				
10-I-BS-191-m01	**Operating Systems**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2) Module taught in: 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-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. 3b § 69 I Nr. 1c: 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				

10-I-BPI-242-m01	**Practice/Job-oriented Internship Computer Science**						
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (1)				
	Method of assessment		placement report (5 to 10 pages) Language of assessment: German and/or English				
	Additional Information		block placement, duration 4 to 6 weeks				

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. 3b				

10-I-GI-152-m01	**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 (0-10 ECTS credits)

Mathematics (0-10 ECTS credits)

10-M-DI-Maf-152-m01	**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-m01	**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-m01	**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-m01	**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-m01	**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-OML-222-m01	**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: Only when announced in the semester in which the courses are offered and in the subsequent semester creditable for bonus					

10-M-LOGP-232-mo1	**Introduction to Mathematical Logic**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	
	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 Creditable for bonus Assessment offered: In the semester in which the course is offered and in the following semester				

Physics (0-10 ECTS credits)

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)				

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 (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)				

Economics (0-10 ECTS credits)

12-EBWL-G-212-mo1	**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) Language of assessment: German and/or English				

12-Ebus-F-212-mo1	**E-Business**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + T (2)				
	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. 10 minutes per candidate) Language of assessment: German and/or English				

12-MDT-232-m01	**Management & Digital Transformation**						
	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		a) written examination (approx. 60 minutes) or b) 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-212-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) Language of assessment: German and/or English				

12-IntUR-G-212-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) Language of assessment: German and/or English				

12-BPL-G-212-m01	**Supply, Production and Operations Management**						
	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) Language of assessment: German and/or English				

12-I&F-G-212-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) Language of assessment: German and/or English				

12-Mark-G-212-m01	**Marketing**						
	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) Language of assessment: German and/or English				

12-WiPo-G-212-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 pages) Language of assessment: German and/or English					

12-Mik2-G-212-m01	**Microeconomics 2**							
	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) Language of assessment: German and/or English					

Linguistics (0-10 ECTS credits)

04-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) Language of assessment: German					
	Referred to in LPO I		§ 43 I Nr. 2 b) § 63 I Nr. 2 b)					

04-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) Language of assessment: German					
	Referred to in LPO I		§ 43 I Nr. 2 b) § 63 I Nr. 2 b)					

Biology (0-10 ECTS credits)

07-1A1Tl-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				
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 (0-10 ECTS credits)

02-J1-171-m01	**Introduction to the German Legal System**						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (4)				
	Method of assessment		written examination (approx. 120 minutes)				
	Participants and allocation of places		max. 80 places. Students applying after not having successfully completed assessment in the past two semesters will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available. Places on all courses of the module with a restricted number of places will be allocated in the same procedure.				

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					

Geography (0-10 ECTS credits)

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 (0-5 ECTS credits)

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 (0)					
	Method of assessment		written examination (approx. 60 to 90 minutes)					

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-SEM-KIDS-222-m01	**Seminar - Selected Topics in Artificial Intelligence and Data Science**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		term paper (10 to 15 pages) and presentation (30 to 45 minutes) with subsequent discussion Language of assessment: German and/or English					

10-I-KIDS-PW-232-m01	**Artificial Intelligence and Data Science Project Workshop**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		R (3) Module taught in: German or English					
	Method of assessment		presentation of project results (30 to 45 minutes) Language of assessment: German and/or English creditable for bonus					

10-I-PV-152-m01	**Project Presentation**							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (5)					
	Method of assessment		presentation of a project developed by the candidate analogous to a presentation for laypersons with a knowledge of computer science at a trade fair as well as discussion (approx. 10 to 15 minutes total) Language of assessment: German and/or English					
	Referred to in LPO I		§ 22 II Nr. 3b					

Thesis (10 ECTS credits)

10-I-KIDS-BA-222-m01	**Bachelor-Thesis Artificial Intelligence and Data Science**							
	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.					