

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Emerging Educational Technologies for Science Technology Engineering Mathematics STEM (EET4STEM) as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

Responsible: Faculty of Biology
Responsible: Faculty of Chemistry and Pharmacy
Responsible: Faculty of Mathematics and Computer Science
Responsible: Faculty of Physics and Astronomy

Examination regulations version: 2026
Examination regulations version: 2026
Examination regulations version: 2026
Examination regulations version: 2026

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)):

??-???-2026 (2026-??)

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 (55 ECTS credits)								
Digital Foundations of Emerging Educational Technologies (30 ECTS credits)								
10-I=EI-NEET-262-m01	Introduction to Informatics for EET4STEM							
	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		Written examination (approx. 60 to 120 minutes) Language of assessment: German and/or English creditable for bonus					
10-I=PEET1-262-m01	Programming for Emerging Educational Technologies 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		Ü (2) Module taught in: German and/or English					
	Method of assessment		portfolio (approx. 30 pages in total) Language of assessment: German and/or English creditable for bonus					
10-I=PEET2-262-m01	Programming for Emerging Educational Technologies 2							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		Ü (2) Module taught in: German and/or English					
	Method of assessment		portfolio (approx. 30 pages in total) Language of assessment: German and/or English creditable for bonus					
10-HCI=WOT-262-m01	Web and Online Technologies							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V/S (2) + Ü (1) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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					

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)						
Emerging Educational Technologies (25 ECTS credits)								
19-EET=E-LET1-262-m01	Educational Technologies Development Lab 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V/S (2) + Ü (1) Module taught in: German and/or English						
	Method of assessment	a) report (approx. 30 pages) or b) portfolio (approx. 30 pages in total) Language of assessment: German and/or English creditable for bonus						
19-EET=E-LET2-262-m01	Educational Technologies Development Lab 2							
	ECTS	20	Duration	2 semester	Method of grading	numerical grade	Modul level	
	Courses	V/S (4) + Ü (6) Module taught in: German and/or English						
	Method of assessment	portfolio (approx. 500 hours in total) Language of assessment: German and/or English creditable for bonus						
Compulsory Electives (35 ECTS credits)								
Subfield Specialization (10 ECTS credits)								
10-AI=ML-242-m01	Machine Learning							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	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-AI=IAI-262-mo1	Introduction to AI							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	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-HCI-B-HAI-242-mo1	Human-AI Interaction							
	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 (60 to 120 minutes) or b) project work (examination of one candidate each or in groups of up to 4 candidates, approx. 150 hours per candidate) with final presentation in groups of up to 4 candidates (approx. 15 minutes per candidate) or c) term paper (10 to 15 pages) Language of assessment: German and/or English creditable for bonus					
10-MK-Dig-Med1-212-mo1	Digital media 1							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 50 minutes) or b) oral examination of one candidate each (approx. 20 minutes) Language of assessment: German and/or English creditable for bonus					
	Additional Information		Instead of an exercise, a tutorial with 2 SWS can be offered.					
	Referred to in LPO I		§ 22 II Nr. 3 b)					
10-MK-Dig-Med2-212-mo1	Digital media 2							
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + Ü (2)					
	Method of assessment		a) written examination (approx. 100 minutes) or b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
	Referred to in LPO I		§ 22 II Nr. 3 b)					

10-HCI-3DUI-212-mo1	3D User Interfaces							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		a) presentation of project results (approx. 30 minutes) or b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
10-HCI-PRIS-212-mo1	Principles of Interactive Systems							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	graduate
	Courses		V (2) + Ü (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 90 minutes) or b) oral examination of one candidate each (approx. 30 minutes) Language of assessment: German and/or English creditable for bonus					
Subfield Subject didactics (15 ECTS credits)								
Subject didactics Biology (0 or 15 ECTS credits)								
07-GY-FD-BIO-1-152-mo1	Didactics in Biology I: Basics							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		V (2) + S (3)					
	Method of assessment		written examination (approx. 60 minutes) creditable for bonus					
	Referred to in LPO I		§ 61 I Nr. 8					
07-GY-FD-BIO-2-152-mo1	Didactics Biology II: Special Didactics							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2) + S (2)					
	Method of assessment		portfolio (approx. 30 hours) creditable for bonus					
	Referred to in LPO I		§ 61 I Nr. 8					

o7-GY-FDB-V-262-mo1	Advanced Biology Education							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V (2) + Ü/S (2) Module taught in: German and/or English						
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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						
Subject didactics Chemistry (0 or 15 ECTS credits)								
o8-FD1-LAGY-152-mo1	Introduction into Teaching Chemistry for High School							
	ECTS	5	Duration	2 semester	Method of grading	numerical grade	Modul level	unknown
	Courses	V (2) + S (2)						
	Method of assessment	a) written examination (approx. 90 minutes) and b) presentation (approx. 20 minutes) Language of assessment: German and/or English						
	Referred to in LPO I	§ 62 I Nr. 6						
o8-FD2-LAGY-152-mo1	Teaching Chemical Practice for High School							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	unknown
	Courses	S (2) + S (2)						
	Method of assessment	a) written examination (approx. 60 minutes) and b) portfolio (approx. 15 pages) Language of assessment: German and/or English						
	Referred to in LPO I	§ 62 I Nr. 6						
o8-FDC-V-262-mo1	Advanced Chemistry Education							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V (2) + Ü/S (2) Module taught in: German and/or English						
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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						

Subject didactics Computer Science (0 or 15 ECTS credits)								
10-I-DDI1-152-m01	Computer Science Education 1 (incl. Practical Course in the Application of Computer Science Systems form an Educational Point of View)							
	ECTS	6	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2) + P (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. 2 § 69 I Nr. 2						
10-I-DDI2-GY-152-m01	Computer Science Education 2							
	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 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	§ 69 I Nr. 2 and § 69 I Nr. 1 c): Rechnerarchitektur						
10-I-FDI-V-262-m01	Advanced Computer Science Education							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V (2) + Ü/S (2) Module taught in: German and/or English						
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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						
Subject didactics Mathematics (0 or 15 ECTS credits)								
10-M-DGY1-232-m01	Didactics of Mathematics: Algebra and Analysis (German Gymnasium)							
	ECTS	6	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2) + V (2) + Ü (2)						
	Method of assessment	written examination (approx. 60 minutes) and written exercises (approx. 10 exercise sheets with approx. 3 exercises each from the didactics of algebra and approx. 10 exercise sheets with approx. 3 exercises each from the didactics of analysis) Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 73 I Nr. 6						

10-M-DGY2-191-m01	Didactics of Mathematics: Geometry (German Gymnasium)							
	ECTS	4	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	a) written examination (60 to 120 minutes) or b) oral examination of one candidate each (approx. 30 minutes) or c) oral examination in groups (groups of 2 or 3, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I	§ 73 I Nr. 6						
10-M-FDM-V-262-m01	Advanced Mathematics Education							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses	V (2) + Ü/S (2) Module taught in: German and/or English						
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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						
Subject didactics Physics (0 or 15 ECTS credits)								
11-L-PD-172-m01	Physics Teaching Concepts							
	ECTS	5	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (2) + V (2) + Ü (1)						
	Method of assessment	a) written examination (approx. 60 minutes) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 2, approx. 15 minutes per candidate) or d) term paper (approx. 8 pages) Language of assessment: German and/or English						
	Referred to in LPO I	§ 36 I Nr. 7 § 38 I Nr. 1 § 53 I Nr. 2 § 77 I Nr. 2						

11-L-PDS-152-m01	Physics Teaching Concepts Seminar							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) or d) term paper (approx. 8 pages) Language of assessment: German and/or English					
	Referred to in LPO I		§ 77 I Nr. 2					
11-L-L3S-GY-152-m01	Student Lab Preparation Course (Physics) German Gymnasium							
	ECTS	3	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		S (2)					
	Method of assessment		a) written examination (approx. 45 minutes) or b) oral examination of one candidate each (approx. 10 minutes) or c) oral examination in groups (groups of 2, approx. 10 minutes per candidate) or d) term paper (approx. 8 pages) Language of assessment: German and/or English					
	Referred to in LPO I		§ 77 I Nr. 2					
11-L-FDP-V-262-m01	Advanced Physics Education							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	
	Courses		V (2) + Ü/S (2) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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					
	Subfield Profession-specific key competencies (10 ECTS credits)							
19-EET-SK1-262-m01	Key Competencies EET4STEM 1							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	
	Courses		V/S (2) + Ü (1) Module taught in: German and/or English					
	Method of assessment		a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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					

19-EET-SK2-262-m01	Key Competencies EET4STEM 2						
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level
	Courses	V/S (2) + Ü (1) Module taught in: German and/or English					
	Method of assessment	a) written examination (approx. 60 to 90 minutes) or b) project work: report (approx. 20 pages) with presentation (30 to 45 minutes) and subsequent discussion on the topic or c) oral examination of one candidate each (approx. 20 minutes) 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					
Thesis (30 ECTS credits)							
19-EET-MA-262-m01	Master-Thesis						
	ECTS	25	Duration	1 semester	Method of grading	numerical grade	Modul level
	Courses	No courses assigned to module					
	Method of assessment	Master's thesis (approx. 60 pages) Language of assessment: German and/or English					
	Additional Information	Time to complete: 6 months.					
19-EET-MK-262-m01	Concluding Colloquium						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level
	Courses	K (o)					
	Method of assessment	final colloquium (approx. 60 minutes) Language of assessment: German and/or English					
	Additional Information	Time to complete: 6 months.					