



Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Mathematics as vertieft studiertes Fach (studied with a focus on the scientific discipline) with the degree "Erste Staatsprüfung für das Lehramt an Gymnasien"

Responsible: Faculty of Mathematics and Computer Science Responsible: Institute of Mathematics Examination regulations version: 2019 Examination regulations version: 2019

Abbreviations used:	Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\ddot{\mathbf{U}}$ = exercise, \mathbf{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 cre- ditable 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 me- thod 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:

LASPO2015

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

07-Nov-2018 (2018-66)

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	Du	uration	(in semesters)	Method of grading		Module level			
	Courses		To be spe	b be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y						
	Method of as	ssessmen	t							
	Only after su completion of		if applica	ble						
	Other prereq	uisites	if applica	if applicable						
	Participants on of places		ati- if applica	ble						
	Additional in	formation	if applica	ble						
	Referred to in	n LPO I	if applica	ble (examination r	egulations for teaching	g-degree programmes)				

Scientific Disciplin	ne (92 ECTS cree	dits)										
Compulsory Cours	es (46 ECTS cre	edits)										
10-M-MDAL-152-	Introduction into Mathematical Thinking and Working for Teaching Degree (German Gymnasium)											
m01	ECTS 5	Duratio	n 1 semester	Method of grading (not) success	fully completed	Modul level	undergraduate					
	Courses		$V(1) + \ddot{U}(1) + V(1) + \ddot{U}$	(1)								
	Method of as	sessment	project (10 to 15 pages) Language of assessment: German and/or English									
	Additional Inf	ormation	Additional information	on module duration: includes block t	aught sessions pri	or to the begi	nning of the lecture period.					
	Referred to in	LPO I		§ 73 Nr. 2 (1 ECTS credits) § 73 Nr. 3 (2 ECTS credits) § 73 Nr. 5 (2 ECTS credits)								
10-M-LNL-Ü-191-	Overview Linear Algebra for Teaching Degree (German Gymnasium)											
m01	ECTS 13	Duratio	n 2 semester	Method of grading numerical gra	ade	Modul level	undergraduate					
	Courses		V (4) + V (4) + Ü (2)									
	Method of assessment		oral examination of one candidate each (20 to 40 minutes) Language of assessment: German and/or English Assessment will have reference to the contents of modules 10-M-LNL1 und 10-M-LNL2									
	Referred to in LPO I		§ 73 Nr. 2									
10-M-ANL-Ü-191-	Overview Analysis for Teaching Degree (German Gymnasium)											
m01	ECTS 16	Duratio	n 2 semester	Method of grading numerical gra	ade	Modul level	undergraduate					
	Courses		V (4) + V (4) + Ü (2)	· · · · · ·								
	Method of as	sessment	oral examination of one candidate each (20 to 40 minutes) Language of assessment: German and/or English Assessment will have reference to the contents of modules 10-M-ANL1 und 10-M-ANL2									
	Referred to in	LPO I	§ 73 Nr. 1									
10-M-DFL-Ü-191-	Overview Diff	erential Ec	uations and Complex A	nalysis for Teaching Degree (German	Gymnasium)							
m01	ECTS 12	Duratio	n 2 semester	Method of grading numerical gra	ade	Modul level	undergraduate					
	Courses	,	V (4) + V (4) + Ü (2)									
	Method of as	sessment	oral examination of one candidate each (20 to 40 minutes) Language of assessment: German and/or English Assessment will have reference to the contents of modules 10-M-DGLL und 10-M-FTHL									
	Referred to in	LPO I	§ 73 Nr. 1									

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Compulsory Electiv	es (46 ECTS cre	dits)								
Subfield Basics in	Linear Algebra (5 ECTS cr	edits)							
10-M-LNL1-191-	Linear Algebra 1 for Teaching Degree (German Gymnasium)									
m01	ECTS 5 Duration		n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)							
	Method of asse	essment	each)	written examination (approx. 90 to 180 minutes) and written exercises (approx. 10 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English						
	Referred to in L	.PO I	§731							
10-M-LNL2-191-	Linear Algebra	2 for Tea		Degree (German Gy	mnasium)					
m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)							
Method of assessmen		essment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 10 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English							
	Referred to in L	.PO I	§ 73 Nr. 2							
Subfield Basics in A	Analysis (5 ECTS	credits)								
10-M-ANL1-191-	Analysis 1 for T	eaching	Degree	e (German Gymnasiu	um)					
m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)	J (2)						
	Method of assessment			written examination (approx. 90 to 180 minutes) and written exercises (approx. 10 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English						
	Referred to in L	.PO I	§ 73 Nr. 1							
10-M-ANL2-191-		Feaching	Degree	e (German Gymnasi						
m01	ECTS 5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)							
	Method of asse	essment	written examination (approx. 90 to 180 minutes) and written exercises (approx. 10 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English							
	Referred to in L	.PO I	§731	Nr. 1						

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Subfield Basics in	Higher Analysis	(5 ECTS o	redits)						
10-M-DGLL-191-	Ordinary Differ	rential Eq	quations for Teaching Degree (German Gymnasium)							
m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully compl	eted Modul le	evel undergraduate		
	Courses		Ü (2)		·		·			
	Method of asse	essment	nutes Langi	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 mi- nutes) 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						
	Referred to in L	PO I	§731	Nr. 1						
10-M-FT-	Introductory Co	omplex A	nalysi	s for Teaching Degr	ee (German Gymnasi	um)				
HL-191-m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully compl	eted Modul le	evel undergraduate		
	Courses		Ü (2)	•	•		·			
	Method of asse	essment	nutes Langı	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 mi- nutes) 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						
	Referred to in L	POI	§ 73 Nr. 1							
Subfield Stochasti	cs and Basics in	Algebra	and Ap	plied Mathematics	(11 ECTS credits)					
Focus Basics in Alg	ebra and Applie	ed Mathe	matics	(5 ECTS credits)						
10-M-AL-	Introductory A	lgebra fo	r Teach	ning Degree (Germa	n Gymnasium)					
GL-191-m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully compl	eted Modul le	evel undergraduate		
	Courses		Ü (2)	Ü (2)						
	Method of asse	essment	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 mi- nutes) 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							
	Referred to in L	PO I	§731	§ 73 Nr. 2 (2 LP), § 73 Nr. 5 (3 LP)						
10-M-AALL-191-	Applied Algebr	r <mark>a for Tea</mark>	ching Degree (German Gymnasium)							
m01	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully compl	eted Modul le	evel undergraduate		
	Courses		Ü (2)							
	Method of asse		nutes Langu credit	a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 mi- nutes) 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						
	Referred to in L	101	9 73	Nr. 2 (2 LP), § 73 I N	NF. 5 (3 LP)					

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10-M-NUL1-191-	Numer	Numerical Mathematics 1 for Teaching Degree (German Gymnasium)									
m01	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Course	s		Ü (2)	•						
	Metho	d of ass	essment						one candidate each (15 to 30 mi-		
				nutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate)							
					age of assessmen able for bonus	t: German and/or Eng	ISh				
	Referre	ed to in L	POI		Nr. 2 (2 LP), § 73 l	Nr c (2 P)					
Focus Stochastics				3751	111. 2 (2 Li), 3 / 3 /						
	-		r Toachin		ee (German Gymna	cium)		_			
10-10-10-191-1101	ECTS	6	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course		Duration		+ Ü (2)		numencai giade	Modul level	undergraduate		
			accmont			approx on to 180 min	utes) or b) oral examination of	ne candidate e	each (approx. 15 to 30 minutes) or		
	Metho	u 01 assi	essment				to 15 minutes per candidate)		each (approx. 15 to 30 minutes) of		
				Language of assessment: German and/or English							
				credit	creditable for bonus						
		ed to in L			§ 73 l Nr. 3						
10-M-STOL-191-	Stocha	stics 1 f	or Teachi	eaching Degree (German Gymnasium)							
m01	ECTS	6	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course				+ Ü (2)						
	Metho	d of asso	essment	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (approx. 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							
					able for bonus	t: German and/or Eng	1511				
	Referre	ed to in L	POI	§ 73 l							
Subfield Geometrie			-	3751							
10-M-EGEL-191-				r Teac	hing Degree (Germ	an Gymnasium)					
mo1	ECTS	10	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course		Duration		+ Ü (2)	method of grading	numencal grade	Modulievei	undergraduate		
			occmont			approx on to 190 min	utac) or b) oral examination of	ano candidato d	each (approx. 15 to 30 minutes) or		
	Metho	u 01 assi	essment				to 15 minutes per candidate)		each (approx. 15 to 30 minutes) of		
						t: German and/or Engl					
				credit	able for bonus						
	Referre	ed to in L	POI	§ 73 l Nr. 4							

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10-M-DGEL-191-	Introd	uctory D	ifferentia	l Geometry for Teaching Degree (German Gymnasium)						
m01	ECTS	10	Duratio	n	1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Course	es		V (4)	+ Ü (2)					
	Method of assessment			c) ora Langi Asses	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (approx. 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					
	Referre	ed to in l	POI	§ 73 l						
10-M-PGEL-191-						egree (German Gymn	asium)			
mo1	ECTS	10	Duratio		1 semester	Method of grading	· · · · · · · · · · · · · · · · · · ·	Modul level	undergraduate	
	Course	es		V (4)	+ Ü (2)					
Method of assessmen				c) ora Langu credi	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (approx. 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: Only when announced in the semester in which the courses are offered and in the subsequent semester					
	Referre	ed to in l	POI	§731	Nr. 4					
Subfield Overview	Algebra	and Ap	olied Mat	hemat	ics (10 ECTS credits	5)				
10-M-AALL-Ü-191-	Overvi	ew Alge	bra and A	d Applied Algebra for Teaching Degree (German Gymnasium)						
m01	ECTS	10	Duratio	n	2 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Course	es		V (4)	$V(4) + V(4) + \ddot{U}(2)$					
	Method of assessment			oral examination of one candidate each (20 to 40 minutes) Language of assessment: German and/or English Assessment will have reference to the contents of modules 10-M-ALGL und 10-M-AALL						
	Referred to in LPO I		PO I	§ 73 Nr. 2 (5 LP), § 73 Nr. 5 (5 LP)						
10-M-ANUL-Ü-191-	Overvi	ew Alge	bra and N	umeri	umerical Mathematics 1 for Teaching Degree (German Gymnasium)					
m01	ECTS	10	Duratio		2 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Course	es		V (4)	+ V (4) + Ü (2)					
	Metho	d of ass	essment	Langi	oral examination of one candidate each (20 to 40 minutes) Language of assessment: German and/or English Assessment will have reference to the contents of modules 10-M-ALGL und 10-M-NUL1					
	Referre	ed to in l	POI	§731	Nr. 2 (5 LP), § 73 1	Nr. 5 (5 LP)				

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Teaching (10 ECTS	credits)										
Compulsory Cours	ses (10 EC	TS cred	lits)								
10-M-DGY1-191-	Didacti	ics of Ma	athematio	s: Alge	bra and Analysis (G	German Gymnasium)					
n01	ECTS	6	Duration	1	2 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (2) +	$(2) + \ddot{U}(2) + V(2) + \ddot{U}(2)$						
	Methoo	Method of assessment			a) written examination (approx. 60 to 120 minutes) or b) oral examination of one candidate each (approx. 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						
	Referred to in LPO I § 73 I Nr. 6										
10-M-DGY2-191-	Didactics of Mathematics: Geometry (German Gymnasium)										
n01	ECTS	ECTS 4 Duration		n	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (2) + Ü (2)							
	Method of assessment		a) written examination (approx. 60 to 120 minutes) or b) oral examination of one candidate each (approx. 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								
	Referred to in LPO I		§ 73 Nr. 6								

Paper (4 ECTS credits)

Students studying for a teaching degree Gymnasium must complete a practical training in didactics and teaching methodology (studienbegleitendes fachdidaktisches Praktikum) which refers to one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) pursuant to Section 34 Subsection 1 No. 4 LPO I (examination regulations for teaching-degree programmes). The obligatory accompanying tutorial is offered by the respective subject. The ECTS credits obtained are counted in the subject Erziehungswissenschaften pursuant to Section 10 Subsection 3 LASPO (general academic and examination regulations for teaching-degree programms).

10-M-SFDP-	Practical Training in Classroom Teaching including Theory (German Gymnasium)									
GY-152-m01	ECTS	4	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses P (0) + S (2)									
	Method of assessment			Conte for tea	nts and duration of p	placement as specifi		Sentence 1 No. 4	5 pages) LPO I (examination regulations of all set tasks as specified by	
	Referre	d to in L	PO I	§ 34 I	1 Nr. 4					

Freier Bereich (general as well as subject-specific electives) (0-15 ECTS credits)

Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below.

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Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".

Thefeir Defeicht III	- Runner	1 405 51	.uulullis li		cilianit .						
Mathematics (Freier Bereich (gen	neral as v	vell as s	subject-sp	pecific	electives) subje	ct specific)					
Module group Mat	hematics	and Di	idactics o	f Math	ematics						
10-M-SCH-152-m01	School	Mathe	matics fro	m a Hi	gher Perspective						
	ECTS	5	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	5		V (2) ·	+ Ü (2)						
	Method	ofass	essment	Asses	a) talk (approx. 45 minutes) or b) term paper (10 to 15 pages) or c) project (15 to 25 hours) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English						
	Referre	Referred to in LPO I			Nr. 1 h) Nr. 2 f) Nr. 3 f)						
10-M-DCMU-152-	Comput	ters in l	Mathema	tical Te	aching						
m01	ECTS	3	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			V (2)	V (2)						
	Method of assessment			project (10 to 15 pages) Assessment offered: Every two years, winter semester							
	Referred to in LPO I			§ 22 Nr. 2 f § 22 Nr. 1 h § 22 Nr. 3 f)							
10-M-PRM1-152-	Introdu	ction to	o Hands-o	n Mathematics							
m01	ECTS 3 Duratio		n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate			
	Courses	5		S (2)							
	Method of assessment			project (10 to 15 pages) Assessment offered: Every two years, winter semester							
	Referred to in LPO I			§ 22 Nr. 2 f § 22 Nr. 3 f)							
10-M-PRM2-152-	Practica	al Cours	se Hands-	on Ma	on Mathematics						
m01	ECTS	3	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	-		P (2)							
	Method	of ass	essment			roject plan (5 to 10 pag ery two years, summer	es) and practical implementati semester	on with pupils			
	Referre	d to in I	LPO I		Nr. 2 f Nr. 3 f)						

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10-M-D3GY-152-	Didactics of Mathematics: Analytic Geometry and Stochastics									
m01	ECTS	3	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			V (2)	•			•		
	Method	of ass	essment	a) wri	tten examination (a	pprox. 60 to 90 minu	tes) or b) oral examination of o	ne candidate e	ach (approx. 15 to 20 minutes) or	
							lates (approx. 10 minutes per c	andidate)		
				Assessment offered: Every two years, summer semester						
	Referred			-	I Nr. 3 f)					
10-M-PRA-152-m01	Hands-o	n Sem	inar Math	iemati	cs					
	ECTS	3	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			S (2)						
	Method	of ass	essment	proje	ct: drawing up a pro	ject plan (10 to 15 pag	ges)			
						ry two years, summer	semester			
	Referred	to in l	_PO I	§ 22	I Nr. 3 f)					
10-M-GES-152-m01	Selected	d Topic	s in Histo	ry of N	Mathematics					
	ECTS 5 Duratio		า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		V (2) + Ü (2)							
	Method of assessment			a) talk (45 to 90 minutes) or b) term paper (10 to 15 pages) or c) project (15 to 25 hours)						
				Assessment offered: In the semester in which the course is offered and in the subsequent semester						
				Language of assessment: German and/or English						
	Referred			§ 22 Nr. 3 f)						
10-M-MSC-152-	Mathem					1				
m01	ECTS	5	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			V (2) + Ü (2)						
	Method	of ass	essment	a) talk (45 to 90 minutes) or b) term paper (10 to 15 pages) or c) project (15 to 25 hours)						
				Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English						
	Deferred	4		_	-	: German and/or Engl	1511			
	Referred		-	§ 22 I	§ 22 II Nr. 3 f)					
10-M-SEM-152-	Seminar				1					
m01	ECTS	-	Duration		1 semester	Method of grading	numerical grade	Modul level	undergraduate	
	Courses			S (2)		_				
	Method	of ass	essment		60 to 120 minutes)	· · · · ·				
				-		: German and/or Engl	ISh			
	Referred to in LPO I			§ 22 II Nr. 3 f)						

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10-M-COM-152-	Computational Mathematics									
m01	ECTS 4	Duratio	n	1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		V (1) -	V (1) + Ü (2)						
	Method of asso	essment			gramming exercises (approx. 20 to 25 hours)					
					e a year, winter semester : German and/or English					
	Referred to in L	PO I	<u> </u>	<u> </u>						
10-M-PRG-152-m01	Referred to in LPO I § 22 II Nr. 3 f) Programming course for students of Mathematics and other subjects									
	ECTS 3	Duratio		1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		P (2)							
	Method of ass	essment	proje	ct in the form of pro	gramming exercises (approx. 20 to 25 hours)					
			Asses	ssment offered: Onc	e a year, summer semester					
			_	-	: German and/or English	_				
	Referred to in L	-		l Nr. 3 f)						
10-M-Tu- Ko-152-m01				g in Mathematics						
K0-152-1101	ECTS 5	Duratio		1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		T (o)							
	Method of ass	essment		ssment of tutoring a ox. 5 pieces of corre	ctivities or correcting work by supervising lecturers or exercise supe cting work)	ervisors (1 to 2 teaching units or				
	Additional Info	rmation	Pleas	e direct application	to teaching coordinator Mathematics, he/she will select participan	its.				
	Referred to in L	PO I	§ 22	I Nr. 3 f)						
10-M-FAN-152-m01	Introduction to	• Functior	nal Ana	llysis						
	ECTS 9	Duratio		1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		1,12	+ Ü (2)						
	Method of ass	essment			pprox. 90 to 180 minutes, usually chosen) or b) oral examination o	f one candidate each (15 to 30 mi-				
					tion in groups (groups of 2, 10 to 15 minutes per candidate) : German and/or English					
				able for bonus						
	Referred to in L	POI	§ 22	I Nr. 3 f)						
10-M-ORS-152-m01	Operations Re	search								
_	ECTS 9	Duratio	n	1 semester	Method of grading (not) successfully completed Modul level	undergraduate				
	Courses		V (4)	+ Ü (2)						
	Method of ass	essment			pprox. 90 to 180 minutes, usually chosen) or b) oral examination o	f one candidate each (15 to 30 mi-				
					tion in groups (groups of 2, 10 to 15 minutes per candidate)					
					ne semester in which the course is offered and in the subsequent so : German and/or English	emester				
				able for bonus						
	Referred to in L	POI	§ 22	l Nr. 3 f)						

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10-M-DV-	Advanc	ed Did	actics of M	Nather	lathematics (German Gymnasium)					
GY-191-m01	ECTS	2	Duratio	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate				
	Course	S		S (2)	-					
	Method	d of ass	essment	talk (approx. 60 minutes) Language of assessment: German Assessment offered: Once a year, summer term						
	Referre	d to in	LPO I	§ 22	I Nr. 3 f)					
10-M-RE-	Review	Course	e for Teacl	ning Do	egree (German Gyr	/mnasium)				
PL-191-m01	ECTS	3	Duratio	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate				
	Course	S		S (2)						
	Method	d of ass	essment			utes) or b) project (10 to 15 pages) nt: German and/or English				
	Referre	Referred to in LPO I			§ 22 Il Nr. 3 f)					
Module group V	irtual Cours	ses								
10-M-DV-	E-Learn	ning and	d Blended	Learn	earning in Mathematical Teaching (virtual Course)					
HB-152-m01	ECTS	ECTS 3 Duratio		n	1 semester	Method of grading (not) successfully completed Modul level undergraduate				
	Course	Courses		Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester					
	Referred to in LPO I			§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 3 f)						
10-M-VHBA-	Basics	in Arith	metics (v	irtual course)						
ri-152-m01	ECTS	2	Duratio	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate				
	Course	Courses			Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)					
	Method	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester					
	Referred to in LPO I		§ 22	§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 3 f)						

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10-M-VHBGeo-152-	Basics	asics in School Geometry (virtual course)											
m01	ECTS	2	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			Ü (2)					_				
						nostly Virtuelle Hochs	chule Bayern (vhb)						
	Metho	d of asse	essment		ct (web-based, 15 to								
	Deferme			Assessment offered: Once a year, summer semester									
	Referre	ed to in L	.PU I	•	Nr. 1 f) Nr. 2 f)								
					I Nr. 3 f)								
10-M-VHBBr-152-	Start-u	ip Tutori	al Mathe	matics	(virtual course)								
m01	ECTS	2	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Course	:S		Ü (2)				•					
	-					nostly Virtuelle Hochs	chule Bayern (vhb)	-					
	Metho	d of asse	essment	project (web-based, 15 to 20 hours)									
	Referred to in LPO I			Assessment offered: Every two years, winter semester § 22 Il Nr. 3 f)									
			-	rstufe I (virtual course)									
10-M-VH- BSto-152-m01		-											
		2	Duration	ı Ü (2)	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)									
	Method of assessment			project (web-based, 15 to 20 hours)									
				Assessment offered: Once a year, winter semester § 22 Il Nr. 1 h)									
	Referre	ed to in L	.PO I										
				§ 22 II Nr. 2 f) § 22 II Nr. 3 f)									
10-M-VHBM10-152-	Mathe	matics i	n grade 10	-	al course)								
mo1	ECTS	2	Duration	<u>י</u>	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Course	!S		Ü (2)									
		_		Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)									
	Method of assessment			project (web-based, 15 to 20 hours)									
						e a year, summer sem	lester						
	Referre	ed to in L	.PO I		Nr. 1 h) Nr. 2 f)								
					INT. 21) INT. 3 f)								

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10-M-VHBDAL-191-	School	chool Mathematics from a Didactical Point of View: Algebra online (virtual course)									
m01	ECTS	2	Duratio	n	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Course	S		Ü (2)	Ü (2)						
	Method of assessment				ct (web-based, 15 to						
				Assessment offered: Once a year, winter semester							
	Deferre	ed to in I			Other: E-Learning, Vhb § 22 II Nr. 3 f)						
				-	n a Didactical Point of View: Analysis online (virtual course)						
10-M-VHBDAN-191- mo1		1					Modul level	un devene duete			
		2	Duratio		1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses			Ü (2)							
	Method of assessment				ct (web-based, 15 to						
					Assessment offered: Once a year, winter semester Other: E-Learning, Vhb						
	Referred to in LPO I			I Nr. 3 f)							
10-M-VHBDST-191-	Didact	ics of St	ochastics	s (virtual course)							
m01	ECTS 2 Duratio		n	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate				
	Courses		Ü (2)								
	Method of assessment										
				Assessment offered: Once a year, winter semester							
	Deferred to in LDO L			Other: E-Learning, Vhb							
	Referred to in LPO I			-	§ 22 II Nr. 3 f) of Mathematics (virtual course)						
10-M-VH- BEx-191-m01					1						
DEX-191-11101	ECTS 3 Duratio										
	Courses										
	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester							
				Other: E-Learning, Vhb							
	Referred to in LPO I		§ 22 Il Nr. 3 f)								
10-M-VH-				virtual course)							
BExA-191-mo1	ECTS 3 Duratio				1 semester	Method of grading (not) successfully completed	Modul level	undergraduate			
	Courses			Ü (4)							
	Method of assessment				ct (web-based, 15 to	20 hours)					
				Assessment offered: Once a year, summer semester							
				Other	Other: E-Learning, Vhb						
	Referred to in LPO I			§ 22 Nr. 3 f)							

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10-M-VHBMa1-152-	Mathematics 1	(virtual o	course)							
m01	ECTS 2 Duration		1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	_	Ü (2)							
				Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of asse	essment		ct (web-based, 15 to sment offered: Ever	o 20 hours) ry two years, winter so	emester				
				Nr. 1 h) Nr. 2 f)						
				I Nr. 3 f)						
10-M-	Mathematics 2	e (virtual o	course							
VHBMa2-152-mo1	ECTS 2	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2) Cours	e type: eLearning, n	nostly Virtuelle Hochs	schule Bayern (vhb)				
	Method of asse	essment		ct (web-based, 15 to sment offered: Ever	o 20 hours) ry two years, summer	semester				
	Referred to in L	POI	§ 22	l Nr. 1 h)	, , ,					
				§ 22 Nr. 2 f) § 22 Nr. 3 f)						
10-M-VH-	Introduction to	Element	ary Number Theory (virtual course)							
BZth-191-mo1	ECTS 3 Duration			1 semester		(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)	I	00					
	Method of asse	essment								
			Assessment offered: Once a year, winter semester Other: E-Learning, Vhb							
	Referred to in LPO I		§ 22	I Nr. 3 f)						
10-M-VH-	Analytic Geom	etry (virtu	al course)							
BAnG-191-m01	ECTS 3	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2)							
	Method of asse	essment	project (web-based, 15 to 20 hours)							
			Assessment offered: Once a year, summer semester Other: E-Learning, Vhb							
	Referred to in L	POI	§ 22	I Nr. 3 f)						
10-M-	Computer and	Mathema	itics (virtual course)							
VHBCom-152-mo1	ECTS 2	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of asse	essment	proje	ct (web-based, 15 to	20 hours)					
		DO 1			ry two years, summer	semester				
	Referred to in L	101	§ 22	l Nr. 3 f)						
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10-M-VHBFT-191-	Exan	Exam Tutorial Complex Analysis (virtual course)											
m01	ECTS 3 Duration		۱	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate					
	Courses			Ü (4)									
	Meth	nod of asse	essment	project (web-based, 30 to 40 hours) Assessment offered: Once a year, winter semester Other: E-Learning, Vhb									
	Pofo	rred to in L	DO I	§ 22 Nr. 3 f)									
10-M-VHBD-			-	-	ifferential Equations (virtual course)								
GL-191-mo1													
		-	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Cour			Ü (3)					_				
	Method of assessment			project (web-based, 20 to 30 hours) Assessment offered: Once a year, summer semester Other: E-Learning, Vhb									
	Referred to in LPO I		§ 22 Nr. 3 f)										
10-M-VHBDG-191-	School Mathematics from a Didactical Point of View: Geometry online (virtual course)												
m01	ECTS 2 Duration		ו	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate					
	Courses			Ü (2)									
	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester Other: E-Learning, Vhb									
	Referred to in LPO I			§ 22 II Nr. 3 f)									
10-M-VHBHM-191-	Histo	ory of Matl	nematics	(virtual course)									
m01	ECTS 5 Duration		۱	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate					
	Courses			Ü (2) Module taught in: English									
	Method of		Lang Asse		erm paper (approx. 10 to 20 pages) anguage of assessment: German and/or English Assessment offered: Once a year, summer term Other: E-Learning, Vhb								
		rred to in L	.PO I	§ 22 Nr. 3 f)									

Paper (10 ECTS credits)

Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequi-site for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students study-ing for a teaching degree Gymnasium may write this thesis in one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific dis-

cipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.

10-M-HM-	Thesis	in Math	ematics ((Teaching Degree at German Gymnasium)						
GY-152-m01	ECTS	10	Duratior	า		Method of grading	numerical grade	Modul level	undergraduate	
	Course	S		No coi	No courses assigned to module					
	Method of assessment Hausarbeit (thesis) pursuar hours) Language of assessment: G ching-degree programmes)					German; exceptions) I (examination regulations for pursuant to Section 29 Subsec			
	Referre	d to in L	.PO I	§ 29						

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