



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: 2015 Examination regulations version: 2015

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, $\mathbf{\ddot{U}}$ = 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)):

03-Nov-2015 (2015-190)

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 spe	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	ssessme	ent								
	Only after su completion of		Il if applica	fapplicable							
	Other prereq	uisites	if applica	if applicable							
	Participants on of places		ocati- if applica	ble							
	Additional in	formati	on if applica	if applicable							
	Referred to in	n LPO I	if applica	ble (examination re	gulations for teaching	g-degree programmes)					

Compulsory Cours	es (28 FCTS	Scredite	5)									
10-M-MDAL-152-	Introduction into Mathematical Thinking and Working for Teaching Degree (German Gymnasium)											
mo1	ECTS 5 Duration			-		(not) successfully completed	Modul level	undergraduate				
	Courses			$V(1) + \ddot{U}(1) + V(1) + \ddot{U}$								
		fassess	sment	project (10 to 15 pages) Language of assessment: German and/or English								
	Additiona	l Inform	nation	Additional information on module duration: includes block taught sessions prior to the beginning 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-152-	Overview Linear Algebra and Number Theory for Teaching Degree (German Gymnasium)											
m01	ECTS 10	D C	Juration	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses			V (6) + Ü (2)	/ (6) + Ü (2)							
	Method of assessment			oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-LNL1 and 10-M-LNL2. Language of assessment: German and/or English								
	Referred to in LPO I			§ 73 Nr. 2								
10-M-ANL-Ü-152-	Overview	Analysi	is for Te	eaching Degree (German Gymnasium)								
m01	ECTS 8	C	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate				
	Courses			V (4) + Ü (2)			•					
				oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-ANL1 and 10-M-ANL2. Language of assessment: German and/or English								
	Referred t	o in LPC)	§ 73 Nr. 1								
10-M-RE-	Review Co	ourse fo	r Teach	ing Degree (German G	ymnasium)							
PL-152-m01	ECTS 5	C	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate				
	Courses			S (2)								
	Method of	fassess	sment	a) talk (approx. 45 minutes) or b) project (10 to 15 pages) Language of assessment: German and/or English								
	Referred to in LPO I						§ 73 special branch of science without assignment					

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Compulsory Electiv	Compulsory Electives (64 ECTS credits)									
Subfield Basics of Linear Algebra and Number Theory (8 ECTS credits)										
10-M-LNL1-152-	Linear	Algebra	1 for Tea	ching [hing Degree (German Gymnasium)					
m01	ECTS	8	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses		V (4) +	+ Ü (2)						
	Method of assessment		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 LPO I		PO I	§731	Nr. 2					
10-M-LNL2-152-	Linear	Algebra	2 for Tea	ching l	Degree (German Gyr	nnasium)				
m01	ECTS	8	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Course	es		V (4) +	+ Ü (2) + V (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						
	Referre	ed to in L	PO I	§731	§ 73 Nr. 2					
Subfield Basics of	Analysis	5 (7 ECTS	credits)							
10-M-ANL1-152-	Analys	is 1 for T	eaching	aching Degree (German Gymnasium)						
m01	ECTS	7	Duration	ı	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Course	es		V (4) + Ü (2)						
	Metho	d 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					
		ed to in L	-	- , ,	§ 73 Nr. 1					
10-M-ANL2-152-	-	is 2 for T			e (German Gymnasiı					
m01	ECTS	7	Duration		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Course	-		ч	V (4) + Ü (2)					
	Metho	d 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 LPO I			§ 73 Nr. 1						

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Subfield Basics of	cs of Higher Analysis (7 ECTS credits)										
10-M-DGLL-152-	Ordinary Differ	ential Eq	uation	s for Teaching Degr	ee (German Gymnas	ium)					
m01	ECTS 7	Duratio	n	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate			
	Courses	- F	V (4) -	+ 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 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 L		§731								
10-M-FT-		· ·			ee (German Gymnasi			_ .			
HL-152-m01	ECTS 7	Duration		1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate			
	Courses		V (4) -	+ Ü (2)							
			b) ora c) ora Langu credit	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							
	Referred to in L		§731								
10-M-VANL-152-			Feaching Degree (German Gymnasium)								
m01	ECTS 5 Duratio			1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate			
	Courses		V (4) + Ü (2)								
	Method of assessment		written exercises (approx. 10 exercise sheets with approx. 4 exercises each) Language of assessment: German and/or English								
	Referred to in LPO I		§731	§ 73 Nr. 1							
Subfield Basics of	Algebra and Geo	ometry (8	ECTS of	credits)							
10-M-AL-	Introductory A	lgebra fo	r Teach	ing Degree (Germa	n Gymnasium)						
GL-152-m01	ECTS 8	Duratio	n	1 semester	Method of grading	(not) successfully complete	d Modul level	undergraduate			
	Courses		V (4) -	+ Ü (2)							
	Method of assessment		b) ora c) ora Langu credit	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							
	Referred to in LPO I			Nr. 2 (4 ECTS credit Nr. 4 (4 ECTS credit							

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10-M-DGEL-152-	Introdu	ictory D	ifferentia	Geon	etry for Teaching D	egree (German Gymnas	sium)			
m01	ECTS	8	Duratio	า	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate	
	Course	S		V (4) ·	V (4) + Ü (2)					
	Method	d of ass	essment	b) ora c) ora Langu	 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 					
	Referre	d to in l	PO I		73 Nr. 2 (4 ECTS credits) 73 Nr. 4 (4 ECTS credits)					
10-M-PGEL-152-	Introdu	ictory P	rojective	Geome	etry for Teaching De	gree (German Gymnasi	um)			
m01	ECTS	8	Duratio	า	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate	
	Course	S		V (4) ·	$f(4) + \ddot{U}(2)$					
	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						
	Referred to in LPO I			§ 73 Nr. 2 (4 ECTS credits) § 73 Nr. 4 (4 ECTS credits)						
Subfield Basics of	Stochast	tic and A	Applied N	athem	atics (6 ECTS credit	ts)				
10-M-STL-152-m01	Stocha	stics fo	r Teaching	g Degr	ee (German Gymnas	sium)				
	ECTS	6	Duration	า	1 semester	Method of grading (not) successfully completed	Modul level	undergraduate	
	Course	S		V (4) + Ü (2)						
	Methoo	d of ass	essment	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						
	Referre	d to in l	PO I		Nr. 3 (3 ECTS credits Nr. 5 (3 ECTS credits					

10-M-NUL1-152-	Numeri	ical Mat	hematics	1 for 1	eaching Degree (German Gymnasium)		-			
m01	ECTS	6	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			V (4)	/ (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) or							
				Langi	Language of assessment: German and/or English creditable for bonus						
	Referred to in LPO I				§ 73 l Nr. 3 (3 ECTS credits) § 73 l Nr. 5 (3 ECTS credits)						
10-M-DIML-152-	Introdu	ictory D	iscrete M	athem	atics for Teaching	Degree (German Gym	nasium)				
m01	ECTS	6	Duration	า	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Course	S		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							
				credi	table for bonus						
	Referre	d to in l	PO I		Nr. 3 (3 ECTS cred Nr. 5 (3 ECTS cred						
Subfield Overview	Higher A	nalysis	(10 ECTS	credit	s)						
10-M-DFL-Ü-152-	Overview Differential Equations and Complex Analysis for Teaching Degree (German Gymnasium)										
m01	ECTS	10	Duration	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S	_	V (4) + Ü (2)							
	Method of assessment			oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-DGLL and 10-M-FTHL. Language of assessment: German and/or English							
	Referre	d to in l	POI	§ 73 l	Nr. 1						
10-M-FVL-Ü-152-	Overvie	ew Com	plex Anal	ysis aı	nd Advanced Analy	sis for Teaching Degr	ee (German Gymnasium)				
m01	ECTS	10	Duration	า	1 semester	Method of grading	numerical grade	Modul level	undergraduate		
	Course	S		V (4)	+ Ü (2)						
	Method of assessment			Asses	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-FTHL and 10-M-VANL. Language of assessment: German and/or English						
	Referred to in LPO I			§ 73 l	Nr. 1						

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Subfield Overview	iew Algebra and Geometry (10 ECTS credits)									
10-M-ADGL-Ü-152-	Overview Alg	ebra and D	Differential Geometry for Teaching Degree (German Gymnasium)							
m01	ECTS 10	Duratio	n	1 semester	Method of grading numerical grade		Modul level	undergraduate		
	Courses	,	V (4) ·	+ Ü (2)	· · ·		•			
	Method of as	sessment	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-ALGL and 10-M-DGEL. Language of assessment: German and/or English							
	Referred to in	LPO I		§ 73 I Nr. 2 (5 ECTS credits) § 73 I Nr. 4 (5 ECTS credits)						
10-M-APGL-Ü-152-	Overview Alg	ebra and P	rojecti	ve Geometry for Te	aching Degree (German Gymnasium)					
m01	ECTS 10	Duratio	n	1 semester	Method of grading numerical grade	2	Modul level	undergraduate		
	Courses		V (4) ·	+ Ü (2)				_		
	Method of as	sessment	Asses	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-ALGL and 10-M-PGEL. Language of assessment: German and/or English						
	Referred to in	LPO I		Nr. 2 (5 ECTS credi Nr. 4 (5 ECTS credi						
Subfield Overview	Stochastics an	d Applied	Mathe	matics (8 ECTS cre	dits)					
10-M-SNL-Ü-152-	Overview Sto	chastics a	and Numerical Mathematics 1 for Teaching Degree (German Gymnasium)							
m01	ECTS 8	Duratio	n	1 semester	Method of grading numerical grade	2	Modul level	undergraduate		
	Courses		V (4) ·	V (4) + Ü (2)						
	Method of as	sessment	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-STL and 10-M-NUL1. Language of assessment: German and/or English							
	Referred to in	LPO I		§ 73 Nr. 3 (4 ECTS credits) § 73 Nr. 5 (4 ECTS credits)						
10-M-SDL-Ü-152-	Overview Sto	chastics a	nd Dise	crete Mathematics	for Teaching Degree (German Gymnasi	ium)				
m01	ECTS 8	Duratio	n	1 semester	Method of grading numerical grade	2	Modul level	undergraduate		
	Courses		V (4) ·	+ Ü (2)						
	Method of as	sessment	Asses	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-STL and 10-M-DIML. Language of assessment: German and/or English						
	Referred to in	LPO I		Nr. 3 (4 ECTS credi Nr. 5 (4 ECTS credi						

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Compulsory Cour	ses (10 ECTS	credits)									
10-M-DGY1-152-	Didactics of Mathematics: Geometry and Analysis (German Gymnasium)										
n01	ECTS 6	Duratio		2 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses		V (2)	+ Ü (2) + V (2) + Ü (2	2)						
			b) ora c) ora Langu credit	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 to 3 candidates, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus							
	Referred to	-	§731								
10-M-DGY2-152-				ebra (German Gymr							
m01	ECTS 4	Duratio		1 semester	Method of grading numerical grade	Modul level	undergraduate				
	Courses			+ Ü (2)	50 to 120 minutes) or						
			c) oral examination in groups (groups of 2 to 3 candidates, 10 to 15 minutes per candidate) Language of assessment: German and/or English creditable for bonus								
	Referred to	in LPO I	§ 73 l	Nr. 6							
Praktikum) which Subsection 1 No.	g for a teachir refers to one 4 LPO I (exam are counted in gramms).	of the subject nination regul n the subject	cts they ations Erziehu	y selected as vertief for teaching-degree ungswissenschafter	practical training in didactics and teaching metho t studiertes Fach (subject studied with a focus on programmes). The obligatory accompanying tutor n pursuant to Section 10 Subsection 3 LASPO (gen	the scientific disc rial is offered by th	ipline) pursuant to Section 34 ne respective subject. The ECTS				
,	Practical Training in Classroom Teaching including Theory (German Gymnasium)										
lo-M-SFDP-											
o-M-SFDP-	ECTS 4	Duratio	n	1 semester	Method of grading (not) successfully complete	d Modul level	undergraduate				
IO-M-SFDP-	ECTS 4 Courses	Duratio	n P (o)	+ S (2)		d Modul level	undergraduate				
10-M-SFDP- GY-152-m01	ECTS 4 Courses	Duratio	n P (o) a) pre b) ter Conte for te	+ S (2) esentation (30 to 45 m paper (10 to 15 pa ents and duration of	minutes) with position paper (1 to 2 pages) or	1 Sentence 1 No	4 LPO I (examination regulation				
.o-M-SFDP-	ECTS 4 Courses	Duratio	n P (o) a) pre b) ter Conte for te place	+ S (2) esentation (30 to 45 m paper (10 to 15 pa ents and duration of aching-degree progr	minutes) with position paper (1 to 2 pages) or ages) placement as specified in Section 34 Subsection	1 Sentence 1 No	4 LPO I (examination regulation				

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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".

Mathematics											
(Freier Bereich (gen	ieral as v	vell as s	subject-sp	pecific	electives) subjec	t specific)					
Module Group Mat	hematics	s and Te	eaching o	f Math	ematics						
10-M-SCH-152-m01	School	Mather	natics fro	om a Hi	m a Higher Perspective						
	ECTS	5	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses				V (2) + Ü (2)						
	Method	l of asso	essment	a) talk (approx. 45 minutes) or b) term paper (10 to 15 pages) or c) project work (15 to 25 hours) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester							
	Referred to in LPO I			§ 22 § 22	Nr. 1 h) Nr. 2 f) Nr. 3 f)						
10-M-DCMU-152-	Comput	ters in I	Mathema	tical Te	aching						
m01	ECTS	3	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			V (2)							
	Method of assessment			Assessment offered: Every two years, winter semester							
	Referred to in LPO I			§ 22 II Nr. 2 f) § 22 II Nr. 1 h) § 22 II Nr. 3 f)							
10-M-PRM1-152-	Introdu	ction to	Hands-o	n Mathematics							
m01	ECTS	3	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses		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	thematics						
m01	ECTS	3	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses	5		P (2)							
	Method	l of ass	essment			oject plan (5 to 10 pag ery two years, summer	es) and practical implementati semester	on with pupils			
	Referre	d to in L	PO 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	Duratio	n	1 semester	Method of grading (no	t) successfully completed	Modul level	undergraduate	
	Courses		V (2)	V (2)					
	Method of assessment		a) written examination (approx. 60 to 90 minutes) or b) oral examination of one candidate each (approx. 15 to 20 minutes) or c) oral examination in groups of up to 3 candidates (approx. 10 minutes per candidate)						
	Deferme data in l			Assessment offered: Every two years, summer semester					
	Referred to in L	-	-	§ 22 II Nr. 3 f)					
10-M-PKA-152-M01		minar Mathematics Duration 1 semester Method of grading (not) successfully completed Modul level undergraduate						undergreduete	
	ECTS 3 Courses	Duratio	S (2)	1 semester	Method of grading (no	t) successfully completed	Modul level	undergraduate	
			<u>``</u>	t. drawing up a prai	iant plan (10 to 15 pages)				
	Method of asse	essment			ject plan (10 to 15 pages) y two years, summer sem				
	Referred to in L	.PO I	§ 22	I Nr. 3 f)					
10-M-GES-152-m01	Selected Topic	s in Histo	ory of N	Mathematics					
	ECTS 5 Duratio			1 semester	Method of grading (no	t) successfully completed	Modul level	undergraduate	
	Courses		V (2) ·	+ Ü (2)					
	Method of assessment		b) term paper (10 to 15 pages) or c) project work (15 to 25 hours) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
	Referred to in L	PO I	§ 22	I Nr. 3 f)					
10-M-MSC-152-	Mathematical Writing								
m01	ECTS 5	Duratio	n	1 semester	Method of grading (no	t) 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 work (15 to 25 hours) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester						
	Referred to in L	.PO I	§ 22	I Nr. 3 f)					
10-M-SEM-152-	Seminar Mathe	-							
m01	ECTS 5	Duratio		1 semester	Method of grading nur	nerical grade	Modul level	undergraduate	
	Courses		S (2)						
	Method of assessment			50 to 120 minutes) lage of assessment:	German and/or English				
	Referred to in L	.PO I	§ 22	l Nr. 3 f)			-		

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10-M-COM-152-	Computational	omputational Mathematics									
m01	ECTS 4	Duratio	n	1 semester	Method of grading	(not) successfully completed	d Modul level	undergraduate			
	Courses	_	V (1) -	/ (1) + Ü (2)							
	Method of asse	essment	project in the form of programming exercises (approx. 20 to 25 hours) Language of assessment: German and/or English Assessment offered: Once a year, winter semester								
	Referred to in L	POI	§ 22	l Nr. 3 f)							
10-M-PRG-152-m01	Programming	course fo	r stude	ents of Mathematics	and other subjects						
	ECTS 3	Duration	n	1 semester	Method of grading	(not) successfully completed	d Modul level	undergraduate			
	Courses		P (2)	2)							
	Method of asse	essment	Langu	lage of assessment:	gramming exercises (: German and/or Engl e a year, summer sen						
	Referred to in L	PO I	§ 22	22 II Nr. 3 f)							
10-M-Tu-	Exercise tutor	or proof-ı	reading	g in Mathematics							
Ko-152-mo1	ECTS 5	Duratio	n	1 semester	Method of grading	(not) successfully completed	d Modul level	undergraduate			
	Courses		T (o)								
	Method of asse	essment		Assessment of tutoring activities or correcting work by supervising lecturers or exercise supervisors (1 to 2 teaching units or approx. 5 pieces of correcting work)							
	Additional Info	rmation	Pleas	e direct application	to teaching coordina	tor Mathematics, he/she will	select participar	nts.			
	Referred to in L	PO I	§ 22	I Nr. 3 f)							
10-M-FAN-152-m01	Introduction to	Functior	nal Ana	llysis							
	ECTS 9	Duration		1 semester	Method of grading	(not) successfully completed	d Modul level	undergraduate			
	Courses			+ 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 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 § 22 II Nr. 3 f)										
10-M-GAN-152-	Geometric Ana	lysis									
m01	ECTS 9	Duratio	-	1 semester	Method of grading	(not) successfully completed	d Modul level	undergraduate			
	Courses			+ Ü (2)							
	Method of asse		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								
	Referred to in L	POI	§ 22	l Nr. 3 f)							
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10-M-ORS-152-m01	Operat	ions Re	search							
	ECTS	9	Duratior	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Course	S		V (4) + I	Ü (2)			3		
	Methoo	d of asse		a) written examination (approx. 90 to 180 minutes, usually chosen) or b) oral examination of one candidate each (15 to 30 minutes) or c) oral examination in groups (groups of 2, 10 to 15 minutes per candidate) Language of assessment: German and/or English Assessment offered: In the semester in which the course is offered and in the subsequent semester creditable for bonus						
	Referred to in LPO I § 22 II Nr. 3 f)									
Module Group VHB	Courses	5								
10-M-DV-	E-Learn	ning and	l Blended	Learnin	g in Mathematica	l Teaching (virtual Co	urse)			
HB-152-m01	ECTS	3	Duratior	1	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses				Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)					
	Methoo	d of asse	essment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
	Referre	d to in L		§ 22 N § 22 N § 22 N	Nr. 2 f)					
10-M-VHBA-	Basics in Arithmetics (virtual course)									
ri-152-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 assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
		d to in L		§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 3 f)						
10-M-VHBGe0-152-		in Scho			ual course)					
m01	ECTS	2	Duratior		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate	
	Courses			Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
				Assess		20 hours) e a year, summer sen	nester			
	Referre	d to in L		§ 22 § 22 § 22	Nr. 2 f)					

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10-M-VH-	Stocha	stics in	Sekunda	undarstufe I (virtual course)							
BSto-152-m01	ECTS	2	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Course	es		Ü (2)							
		. <u></u>				nostly Virtuelle Hochs	chule Bayern (vhb)				
	Metho	d of asse	essment		t (web-based, 15 to		stor				
	Poforre	ed to in L			Assessment offered: Once a year, winter semester § 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
	Referre		.FU1								
10-M-VHBM10-152-	Mathe	matics i	n grade 1	o (virtu	al course)						
m01	ECTS	2	Duratio	n	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Course	es		Ü (2)							
						nostly Virtuelle Hochs	chule Bayern (vhb)		_		
	Metho	d of asse	essment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester							
	Poforra	ed to in L			Nr. 1 h)	e a year, summer sem					
	Kelene		.101		§ 22 II Nr. 2 f)						
					I Nr. 3 f)						
10-M-VHBDG-152-	Didactics of Geometry (virtual course)										
m01	ECTS	2	Duratio		1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate		
	Courses			Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Metho	d of asse	essment	project (web-based, 15 to 20 hours)							
				Assessment offered: Once a year, summer semester							
	Referre	ed to in L	.PO I		l Nr. 1 h)						
				§ 22 Nr. 2 f)							
	Didaat	ice of AL	rahra (uis	§ 22 II Nr. 3 f) tual course)							
10-M-VHBDA-152- m01	ECTS	2	Duratio		1 semester	Mathad of grading	(not) successfully completed	Modul level	undergraduate		
			Duration	Ü (2)	1 semester			Modul level	undergraduate		
	Courses			U (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Metho	d of asse	essment		ct (web-based, 15 to						
						e a year, winter seme	ster				
			§ 22 Nr. 1 h), § 22 Nr. 2 f) § 22 Nr. 3 f)								

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10-M-VH-	Exam	Tutorial	Didactics	actics of Mathematics (virtual course)						
BEx-152-m01	ECTS	2	Duration	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate	3			
	Cours	es		Ü (2)						
						mostly Virtuelle Hochschule Bayern (vhb)				
	Metho	od of ass	essment	project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
	Deferr	ad to in l			§ 22 ll Nr. 1 h)					
	Referred to in LPO I			§ 22 Nr. 1 fl) § 22 Nr. 2 f)						
					§ 22 Nr. 3 f)					
10-M-VH-	Exam	Tutorial	Algebra (v	virtual	course)					
BExA-152-m01	ECTS	2	Duration	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate	3			
	Courses			Ü (2)	~					
					Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)					
	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Once a year, summer semester						
	Deferr	ed to in I			I Nr. 3 f)					
10-M-VHBMa1-152-		_	virtual c	-						
mo1	ECTS	2	Duration		1 semester	Method of grading (not) successfully completed Modul level undergraduate				
			Ϊ Ü (2)	1 semester		:				
	Courses			Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Metho	Method of assessment			project (web-based, 15 to 20 hours)					
				Assessment offered: Every two years, winter semester § 22 Nr. 1 h)						
	Referr	ed to in l	LPOT		I Nr. 1 h) I Nr. 2 f)					
					I Nr. 3 f)					
10-M-	Mathe	Mathematics 2 (virtual course)								
VHBMa2-152-mo1	ECTS	2	Duration	n	1 semester	Method of grading (not) successfully completed Modul level undergraduate	5			
	Cours	es		Ü (2)	•					
				Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Metho	Method of assessment			ct (web-based, 15 to					
						ry two years, summer semester				
	Referr	ed to in l	LPO I		l Nr. 1 h) l Nr. 2 f)					
				I Nr. 3 f)						

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10-M-	Computer and Mathematics (virtual course)										
VHBCom-152-mo1	ECTS 2 Duration		n	1 semester	Method of grading (n	not) successfully completed	Modul level	undergraduate			
	Courses			Ü (2)							
				Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
				project (web-based, 15 to 20 hours) Assessment offered: Every two years, summer semester							
	Referre	ed to in L	PO I	§ 22 Nr. 3 f)							
10-M-VH- BZth-152-m01	Introd	uction to	Element	ary Nu	rry Number Theory (virtual course)						
	ECTS 2 Duration		n	1 semester	Method of grading (n	not) successfully completed	Modul level	undergraduate			
	Courses			Ü (2)							
			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							
		ed to in L	-	§ 22 Nr. 3 f)							
10-M-VH-		1	1		al course)						
BAnG-152-mo1	ECTS 2 Duration			1 semester	Method of grading (n	not) successfully completed	Modul level	undergraduate			
	Courses			Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
				project (web-based, 15 to 20 hours)							
				Assessment offered: Once a year, summer semester							
		ed to in L		§ 22 II Nr. 3 f)							
10-M-VHBBr-152-		ıp Tutori	al Mathe	matics (virtual course)							
m01	ECTS 2 Duration		-	1 semester	Method of grading (n	not) successfully completed	Modul level	undergraduate			
	Courses		Ü (2)								
				Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)							
	Method of assessment			project (web-based, 15 to 20 hours) Assessment offered: Every two years, winter semester							
	Referred to in LPO 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 prerequisite 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 studying 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 discipline) 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 Mathematics (Teaching Degree at German Gymnasium)									
GY-152-m01	ECTS	10	Duratior	า		Method of grading	numerical grade	Modul level	undergraduate	
Courses				No courses assigned to module						
	Method of assessment			Hausarbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) (250 to 300 hours) Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for tea- ching-degree programmes)						
	Referre	d to in L	.PO I	§ 29						

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