

Subdivided Module Catalogue for the Subject

Mathematics

as Unterrichtsfach with the degree "Erste Staatsprüfung für das Lehramt an Mittelschulen"

> Examination regulations version: 2015 Responsible: Faculty of Mathematics and Computer Science Responsible: Institute of Mathematics

JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record L7/105/-/-/H/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, $\ddot{\mathbf{U}}$ = 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

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

Notes

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 the 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)):

05-Oct-2015 (2015-188)

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.

LA Mittelschulen Mathematics (2015)

The subject is divided into

	Module title	ECTS credits	Method of grading	page
Scientific Discipline (54 E	CTS credits)			
Cumpulsory Courses (54	ECTS credits)			
10-M-ELZT-152-m01	Elementary Number Theory	6	NUM	19
10-M-ELGE-152-m01	Elementary Geometry	6	NUM	17
10-M-ELST-152-m01	Elementary Stochastics	5	NUM	18
10-M-GRLA-152-m01	Basic Linear Analysis	9	NUM	24
10-M-GRAN-152-m01	Basic Analysis	12	NUM	22
10-M-ANGE-152-m01	Analytic Geometry	6	NUM	5
10-M-GRDG-152-m01	Basic Differential Equations	5	NUM	23
	Review Course Mathematics (German Grundschule/Mittelschu-	-		
10-M-M3GMR-152-m01	le/Realschule)	5	B/NB	26
Teaching (12 ECTS credits	;)			,
Compulsory Courses (12	ECTS credits)			
	Didactics of Mathematics - Geometry (German Mittelschu-			
10-M-DGMR1-152-m01	le/Realschule)	5	NUM	8
	Didactics of Mathematics - Stochastics and Algebra (German			
10-M-DGMR2-152-m01	Mittelschule/Realschule)	7	NUM	9
neral academic and examinat	Inted in the subject Erziehungswissenschaften pursuant to Secti ion regulations for teaching-degree programms). Practical Training in Classroom Teaching including Theory (Ger- man Mittelschule)	ion 10 Sub	section 3 LASP B/NB	0 (ge-
Fraior Poraich (gaparal ac wa	Il as subject-specific electives)			
Teaching degree students mu ject-specific electives) (Sectio To achieve the required numb Freier Bereich interdisciplin	st take modules worth a total of 15 ECTS credits in the area Freie on 9 LASPO (general academic and examination regulations for to per of ECTS credits, students may take any modules from the area	er Bereich (eaching-de		
nex "Ergänzende Bestimmung	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel	as below. an be four	egree programr	nes)).
nex "Ergänzende Bestimmung Mathematics	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel	as below. an be four	egree programr	nes)).
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific)	as below. an be four hramt".	egree programr	nes)). ctive An
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching	as below. an be four	egree programr	nes)).
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific)	as below. an be four hramt".	egree programr	nes)). ctive An
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel-	as below. an be four hramt". 3	egree programr nd in the respec B/NB	nes)). ctive An 6
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DMMS2-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel-	as below. an be four hramt". 3 3	egree programm nd in the respect B/NB B/NB	nes)). ctive An 6 11
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DMMS2-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel- schule)	as below. an be four hramt". 3 3 3	egree programm nd in the respect B/NB B/NB B/NB	nes)). ctive An 6 11 12
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DMMS2-152-m01 10-M-DVMS1-152-m01 10-M-DVMS2-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel- schule) Advanced Didactics of Mathematics 1 (German Mittelschule)	as below. an be four hramt". 3 3 3 2	egree programm nd in the respect B/NB B/NB B/NB B/NB	nes)). ctive An 6 11 12 15
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DVMS1-152-m01 10-M-DVMS1-152-m01 10-M-DVHB-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel- schule) Advanced Didactics of Mathematics 1 (German Mittelschule) Advanced Didactics of Mathematics 2 (German Mittelschule) E-Learning and Blended Learning in Mathematical Teaching	as below. an be four hramt". 3 3 3 2 2 2	egree programm nd in the respect B/NB B/NB B/NB B/NB B/NB	nes)). ctive An 6 11 12 15 16
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DMMS2-152-m01 10-M-DVMS1-152-m01 10-M-DVHB-152-m01 10-M-VHBAri-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel- schule) Advanced Didactics of Mathematics 1 (German Mittelschule) Advanced Didactics of Mathematics 2 (German Mittelschule) E-Learning and Blended Learning in Mathematical Teaching (virtual Course)	as below. an be four hramt". 3 3 3 2 2 2 3	egree programm nd in the respect B/NB B/NB B/NB B/NB B/NB B/NB	nes)). ctive An 6 11 12 15 16 13
nex "Ergänzende Bestimmung Mathematics (Freier Bereich (general as w 10-M-DCMU-152-m01 10-M-DMMS1-152-m01 10-M-DMMS2-152-m01 10-M-DVMS1-152-m01 10-M-DVHB-152-m01 10-M-VHBAri-152-m01	ary: The interdisciplinary additional offer for a teaching degree c gen für den "Freien Bereich" im Rahmen des Studiums für ein Lel rell as subject-specific electives) subject specific) Computers in Mathematical Teaching Methodology of Teaching in Mathematics 1 (German Mittel- schule) Methodology of Teaching in Mathematics 2 (German Mittel- schule) Advanced Didactics of Mathematics 1 (German Mittelschule) Advanced Didactics of Mathematics 2 (German Mittelschule) E-Learning and Blended Learning in Mathematical Teaching (virtual Course) Basics in Arithmetics (virtual course)	as below. an be four hramt". 3 3 3 2 2 2 3 2 2 3 2	egree programm nd in the respect B/NB B/NB B/NB B/NB B/NB B/NB B/NB	nes)). ctive An 6 11 12 15 16 13 30

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Julius-Maximilians- UNIVERSITÄT WÜRZBURG	Subdivided Mo	odule Catalogue for the Subject Mathematics LA Mittelschulen		
10-M-DGMS-152-m01	Didactics of Elementary School Mathematics for Teachers at	2	B/NB	10

10-M-DGM5-152-1101	German Mittelschule and Special Education	2	D/ND	10
10-M-GBM-152-m01	Basic Notions and Methods of Mathematical Reasoning	2	B/NB	20
10-M-VHBDG-152-m01	10-M-VHBDG-152-mo1 Didactics of Geometry (virtual course)		B/NB	34
10-M-VHBDA-152-m01	Didactics of Algebra (virtual course)	2	B/NB	32
10-M-VHBEx-152-m01	Exam Tutorial Didactics of Mathematics (virtual course)	2	B/NB	36
10-M-VHBMa1-152-m01	Mathematics 1 (virtual course)	2	B/NB	42
10-M-VHBMa2-152-m01	10-M-VHBMa2-152-mo1 Mathematics 2 (virtual course)		B/NB	44
10-M-SCH-152-m01	School Mathematics from a Higher Perspective	5	B/NB	27
Paper (10 ECTS credits)	· ·			
	sarbeit (thesis) in accordance with the provisions of Section 29			

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 Mittelschule may write this thesis in the subject Didaktik einer Fächergruppe der Mittelschule (Didactics of a Group of Subjects of Mittelschule), in the subject they selected as Unterrichtsfach (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-HMMS-152-m01Inesis in Mathematics (German Mittelschule)10NUM25	10-M-HMMS-152-mo1 Thesis in Mathematics (German Mittelschule)	10	NUM	25
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Module	e title				Abbreviation
Analyti		-			10-M-ANGE-152-m01
Module coordinator				Module offered by	
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
6	L	rical grade			
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten	ts				
		of linear algebra to analyt clidean spaces (scalar pro			f affine maps and isometries, dis-
Intende	ed learı	ning outcomes			
try. He/ presen	She is them	able to comprehend the	central proof method . He/She can analyse	s, can perform easy	ear algebra and analytic geome- mathematical arguments and l problems and employ methods
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (4) +	Ü (2)				
ster, in written If anno examin	formati examin unced ation o 5 minut	on on whether module canation (approx. 60 to 90 n by the lecturer at the beg of one candidate each (ap es per candidate).	an be chosen to earn minutes) inning of the course,	a bonus) the written examina	tion offered — if not every seme- tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
	•				
Additio	nal inf	ormation			
Worklo	ad				
180 h					
Teachi		۹			
reacini	is cycu	6			
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)	
§ 51 N		· · · · · · · · · · · · · · · · · · ·			
Module		ars in			
First sta First sta First sta First sta 2015))	ate exa ate exa ate exa ate exa	mination for the teaching mination for the teaching mination for the teaching	g degree Realschule M g degree Mittelschule g degree Mittelschule	Nathematics (2015) Mathematics (2015)	

Module	title			Abbreviation	
Comput	ters in Mathematical Teachi	ng		10-M-DCMU-152-m	01
Module	coordinator		Module offered by		
	f Studies Mathematik (Mathe	matics)	Institute of Mathem	atics	
ECTS	Method of grading	Only after succ. con		alles	
3	(not) successfully complete	· _ · _ ·			
Duratio	T I I	Other prerequisites			
1 semes					
Conten		J			
Discuss	ion of possible ways to use	computers in teaching n	nathematics as well a	as discussion of con	nmon com-
puter to	ools.				
	ed learning outcomes				
	dent is acquainted with basi well as with the potential ar			ters in the teaching	of mathema-
Courses	s (type, number of weekly co	ntact hours, language –	- if other than Germa	n)	
V (2)					
	l of assessment (type, scope formation on whether modul			tion offered — if not	every seme-
	(10 to 15 pages)				
	ment offered: Every two year	s, winter semester			
Allocati	ion of places				
Additio	nal information				
Worklo	ad				
90 h					
-	ıg cycle				
Referre	d to in LPO I (examination r	egulations for teaching-	degree programmes)		
§ 22 N § 22 N § 22 N	Vr. 2 f) Vr. 1 h)	<u> </u>			
Module	appears in				
	te examination for the teach				
	te examination for the teach		-		
First sta (2015)	ate examination for the teach	ling degree Sonderpada	igogik Didactics in Ma	athematics (Middle	School)
	ate examination for the teach	ning degree Mittelschule	Mathematics (2015)		
	ate examination for the teach				ol) (2015)
First sta	ate examination for the teach	ning degree Gymnasium	Mathematics (2019)		
	ate examination for the teach	ing degree Mittelschule	e Mathematics (2020	(Prüfungsordnungs	version
2015)) First sta	ate examination for the teach	ning degree Mittelschule	e Didactics in Mathem	natics (Middle Scho	ol) (2020
	gsordnungsversion 2015))				
		ing dogroo Sondornäda	gogik Didactics in Ma	athematics (Middle	
First sta (2020 (ate examination for the teach Prüfungsordnungsversion 20 ge program Mathematics (20	D15))			School)



First state examination for the teaching degree Gymnasium Mathematics (2023)

LA Mittelschulen Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Lehramt Mittelschulen (Unterrichtsfach) Mathematik - 2015

	<u>e title</u>				Abbreviation
Didacti	cs of M	athematics - Geometry (German Mittelschule	/Realschule)	10-M-DGMR1-152-m01
Module	e coord	inator		Module offered b	y
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Math	ematics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		netry at Mittelschule and netry, constructions, proc			ctic aspects into account: goals c tion in geometry.
Intende	ed learn	ning outcomes			
ning an them.	id analy	ysing teaching of geomet	ry, masters different	strategies for teac	knows important aspects of plar hing and learning und can asses
Course	s (type,	, number of weekly conta	ict hours, language —	if other than Geri	nan)
V (2) +	Ü (2)				
ster, in	formati	on on whether module ca	an be chosen to earn		nation offered — if not every sem
ster, in written If anno examin prox. 1 <u>9</u>	formati examir unced l ation o 5 minut	on on whether module canation (approx. 60 to 90 by the lecturer at the beg of one candidate each (appression) es per candidate).	an be chosen to earn minutes) inning of the course,	a bonus) the written exami	nation offered — if not every sem nation may be replaced by an ora on in groups of 2 candidates (ap-
ster, in written If anno examin prox. 19 credita	formati examir unced l ation o 5 minut ble for	on on whether module canation (approx. 60 to 90 by the lecturer at the beg of one candidate each (ap es per candidate). bonus	an be chosen to earn minutes) inning of the course,	a bonus) the written exami	nation may be replaced by an ora
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Module					Abbreviation
		lathematics - Stochastics	s and Algebra (Germa	an Mittelschule/Re-	10-M-DGMR2-152-m01
alschu					
Module				Module offered by	
		es Mathematik (Mathema		Institute of Mathem	atics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
7		rical grade			
Duratio		Module level	Other prerequisites		
2 seme		undergraduate			
Conten					
(goals o	of teacl		tive statistics, probab		s, equations) and stochastics atorics, basics in inferential stati
Intende	ed lear	ning outcomes			
stics, a aspects ning ur	nd is a s of pla id can a	ble to take into account t nning and analysing teac assess them.	he students' perception thing of mathematics	ion of mathematical , masters different s	niques in algebra and stocha- topics. He/She knows important trategies for teaching and lear-
		, number of weekly conta	ict hours, language —	- if other than Germa	n)
V (2) +	Ü (1) +	V (2) + Ü (2)			
		sessment (type, scope, la ion on whether module ca			tion offered — if not every seme-
b) oral	examir	nation of one candidate e nation in groups (groups o mination (60 to 120 minu	of 2, approx. 15 minut		·
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
210 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	degree programmes)	
§ 51 N			0		
Module		ars in			
		mination for the teaching	g degree Realschule N	Aathematics (2015)	
		mination for the teaching	-	-	
	ate exa	mination for the teaching	g degree Mittelschule	Mathematics (2020	(Prüfungsordnungsversion
2015))	~~ ~~ ~	gram Mathematics (2023)	\		

LA Mittelschulen Mathematics (2015)

Module	e title				Abbreviation
		lementary School Mathe	matics for Teachers a	t German Mittel-	10-M-DGMS-152-m01
		ecial Education			
	e coord			Module offered by	
	1	es Mathematik (Mathem		Institute of Mathen	natics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio		Module level	Other prerequisites		
ı seme	ster	undergraduate			
Conten	ts				
Discus	sion of	selected methods for tea	aching mathematics in	n Mittelschule.	
intende	ed lear	ning outcomes			
their re	spectiv				erman Mittelschule, can assess appropiate method depending o
Course	s (type	, number of weekly conta	act hours, language —	if other than Germa	an)
S (2)					
					ation offered — if not every seme
ster, in	formati	on on whether module c	an be chosen to earn	a bonus)	
		x. 45 minutes) or			
		(5 to 10 pages) or to 15 pages)			
		ffered: Every two years, v	winter semester		
	ion of J				
Allocat					
Aditio	nal inf	ormation			
Auuitio	nat iii				
Worklo					
	au				
60 h					
Teachiı	ng cycl	e			
Referre	d to in	LPOI (examination regu	ulations for teaching-c	legree programmes)	
§ 22 § 22					
Module	e appea	ars in			
		mination for the teaching			
(2015)					lathematics (Middle School)
		mination for the teaching			-
					matics (Middle School) (2015)
2015))) (Prüfungsordnungsversion
(Prüfun	igsordr	ungsversion 2015))			matics (Middle School) (2020
		mination for the teaching gsordnungsversion 2015	, ,	gogik Didactics in N	lathematics (Middle School)
		0 0 9	0)		

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Module	title				Abbreviation
Methodology of Teaching in Mathematics 1 (German Mitte				schule)	10-M-DMMS1-152-m01
Module	e coord	inator		Module offered by	
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Mathen	natics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Discuss	sion of	selected methods for tea	ching mathematics in	n Mittelschule.	
Intende	ed learn	ning outcomes			
their re the situ	spectiv lation a	e advantages and disade and the subject.	vantages, and can se	lect and employ an	erman Mittelschule, can assess appropiate method depending on
	s (type,	, number of weekly conta	ct nours, language —	If other than Germa	an)
S (2)					
		s essment (type, scope, la on on whether module ca			ation offered — if not every seme-
b) term c) proje	paper ect (10 t	k. 45 minutes) or (5 to 10 pages) or 10 15 pages) ffered: Every two years, v	vinter semester		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
90 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)
§ 22					
Module		irs in			
First sta			g degree Sonderpäda	gogik Didactics in N	Aathematics (Middle School)
(2015) First sta	ate exa	mination for the teaching	degree Mittelschule	Mathematics (2015)
First sta	ate exa	mination for the teaching	g degree Mittelschule	Didactics in Mather	, matics (Middle School) (2015) o (Prüfungsordnungsversion
First sta (Prüfun	gsordn	ungsversion 2015))			matics (Middle School) (2020
(2020 (Prüfun	mination for the teaching gsordnungsversion 2015) gram Mathematics (2023)))	gogik Didactics in N	lathematics (Middle School)

Module	title	<u>.</u>			Abbreviation
Method	lology	of Teaching in Mathema	schule)	10-M-DMMS2-152-m01	
Module coordinator				Module offered by	
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Mathen	natics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
3	· · · · · ·	successfully completed			
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten					
Discuss	sion of	selected methods for tea	ching mathematics in	n Mittelschule.	
Intende	ed learn	ning outcomes			
their re	spectiv				erman Mittelschule, can assess appropiate method depending on
Course	s (type,	number of weekly conta	ct hours, language —	if other than Germa	an)
S (2)					
		essment (type, scope, la on on whether module ca			ation offered — if not every seme-
b) term c) proje Assess	paper ect (10 t ment o	x. 45 minutes) or (5 to 10 pages) or o 15 pages) ffered: Every two years, s	ummer semester		
Allocat		naces			
Additio	nal Info	ormation			
Worklo	ad				
90 h					
Teachi	ng cycl	9			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes))
§ 22	Vr. 1 h)				
Module					
First sta (2015)	ate exa	mination for the teaching	g degree Sonderpäda;	gogik Didactics in M	lathematics (Middle School)
First sta	ate exa	-	g degree Mittelschule	Didactics in Mather) matics (Middle School) (2015) o (Prüfungsordnungsversion
First sta (Prüfun	gsordn	ungsversion 2015))			matics (Middle School) (2020
(2020 (Prüfun	gsordnungsversion 2015) gram Mathematics (2023)))	שטענונא אומכנונא וח M	lathematics (Middle School)

Module	title			Abbreviation	
E-Learn	ing and Blended Learning ir	Mathematical Teaching	(virtual Course)	10-M-DVHB-152-m0	1
	coordinator		Module offered by		
ï	Studies Mathematik (Mathe	I	Institute of Mathem	atics	
	Method of grading	Only after succ. com	pl. of module(s)		
3	(not) successfully complete				
Duratio		Other prerequisites			
1 semes	ster undergraduate				
Content	ts				
	rse offered by Virtuelle Hocl ues in e-learning and blend			acquainted with and	reflects on
Intende	d learning outcomes				
	dent is acquainted with bas their potentials and limitation		and blended learnir	ng in teaching methe	matics, as
Courses	s (type, number of weekly co	ntact hours, language —	if other than Germa	n)	
Ü (2)					
• •	type: eLearning, mostly Virtu	uelle Hochschule Bayern	(vhb)		
Method	l of assessment (type, scope formation on whether modul	e, language — if other tha	in German, examina	tion offered — if not	every seme-
	(web-based, 15 to 20 hours)				
Assess	ment offered: Once a year, w	inter semester			
Allocati	ion of places				
Additio	nal information				
Workloa	ad				
90 h					
Teachin	ig cycle				
Referre	d to in LPO I (examination r	egulations for teaching-d	egree programmes)		
§ 22 N § 22 N § 22 N § 22 N	Vr. 2 f)				
	appears in	ing dogroe Cruce de about-	Mathomatics (as)	
	te examination for the teach te examination for the teach				(2015)
	ite examination for the teach			natics (Finnary Sch	101) (2015)
	ite examination for the teach				
	ate examination for the teach		-	athematics (Primary	School)
-	te examination for the teach	ning degree Sonderpädag	gogik Didactics in M	athematics (Middle	School)
	te examination for the teach				
	te examination for the teach			natics (Middle Schoo	ol) (2015)
	te examination for the teach		-		
	te examination for the teach	ning degree Mittelschule	Mathematics (2020	(Prüfungsordnungs	version
2015))					

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

Module	e title				Abbreviation
Advanc	ed Did	actics of Mathematics 1 ((German Mittelschule	e)	10-M-DVMS1-152-m01
AA - J. J.		•		Mandala afferred has	
Module				Module offered by	·
		es Mathematik (Mathema	<u>í í í í í í í í í í í í í í í í í í í </u>	Institute of Mathen	natics
ECTS		od of grading successfully completed	Only after succ. con	npl. of module(s)	
2	<u> </u>	, i			
Duratio		Module level undergraduate	Other prerequisites		
		undergraduate			
Conten					
lar matl	hemati		analyses, contempo		nt different aspects, in particu- mathematics didactics as well as
		ning outcomes			
			opics and issues on t	teaching mathemati	cs in German Mittelschule, consi-
		-specific, didactical and			
Course	s (type	, number of weekly conta	ict hours, language –	- if other than Germa	an)
S (2)		· · · ·	· · · · · ·		
	d of ass	essment (type, scope, la	nguage — if other tha	an German, examina	ation offered — if not every seme-
		on on whether module ca			·····,···,
c) proje Assess	ect (10 t ment o	(5 to 10 pages) or to 15 pages) ffered: Every two years, v	vinter semester		
Allocat		Jaces			
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachir	ıg cycl	e	<u>.</u>		
Referre	d to in	LPOI (examination regu	lations for teaching-o	degree programmes))
§ 22	Nr. 1 h)				
Module	e appea	ars in			
First sta	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in M	lathematics (Middle School)
(2015)					
		mination for the teaching			-
		-	-		matics (Middle School) (2015) o (Prüfungsordnungsversion
First sta		mination for the teaching ungsversion 2015))	g degree Mittelschule	Didactics in Mather	matics (Middle School) (2020
(2020 (Prüfun	mination for the teaching gsordnungsversion 2015 gram Mathematics (2023))	gogik Didactics in M	lathematics (Middle School)

Module	title				Abbreviation
		actics of Mathematics 2	(German Mittelschule	e)	10-M-DVMS2-152-m01
		•			
Module				Module offered by	
		es Mathematik (Mathema	, <u>, , , , , , , , , , , , , , , , , , </u>	Institute of Mathem	natics
ECTS		od of grading successfully completed	Only after succ. com	ipl. of module(s)	
2 Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten					
Discuss lar mat	sion of hemati		analyses, contempo		nt different aspects, in particu- mathematics didactics as well as
Intende	ed lear	ning outcomes			
		able to discuss central t t-specific, didactical and		eaching mathemation	cs in German Mittelschule, consi-
Course	s (type	, number of weekly conta	ict hours, language —	if other than Germa	an)
S (2)	-				
		sessment (type, scope, la ion on whether module ca			ation offered — if not every seme-
	ment o	to 15 pages) ffered: Every two years, s blaces	ummer semester		
Additio	nal inf	ormation			
Additio	inat init				
Worklo	ad				
60 h					
Teachi	ng cycl	e			
	.5 .,	•			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes))
§ 22					
Module		ars in			
			g degree Sonderpäda	gogik Didactics in M	athematics (Middle School)
First sta First sta First sta 2015))	ate exa ate exa	mination for the teaching	g degree Mittelschule g degree Mittelschule	Didactics in Mather Mathematics (2020	natics (Middle School) (2015)) (Prüfungsordnungsversion
(Prüfun First sta (2020 (igsordn ate exa (Prüfun	nungsversion 2015)) mination for the teaching gsordnungsversion 2015)	g degree Sonderpäda))		natics (Middle School) (2020 Iathematics (Middle School)
exchan	ge prog	gram Mathematics (2023)		

Module title Abbreviation Elementary Geometry 10-M-ELGE-152-m01 Module coordinator Module offered by Dean of Studies Mathematik (Mathematics) Institute of Mathematics	
Module coordinator Module offered by	1
ECTS Method of grading Only after succ. compl. of module(s)	
6 numerical grade	
Duration Module level Other prerequisites	
1 semester undergraduate	
Contents	
Fundamental topics in elementary and Euclidean geometry: axiomatic foundations of Euclidean geomet gruence geometry, imaging geometry, similarity geometry, basics in analytic geometry in R^3, introduct sic mathematical techniques.	
Intended learning outcomes	
The student knows the basic ways of thinking and working in mathematics, as well as the fundamental matical proof methods. He/She is able to apply these skills to basic problems in Euclidean geometry.	mathe-
Courses (type, number of weekly contact hours, language — if other than German)	
V (4) + Ü (2)	
Method of assessment (type, scope, language — if other than German, examination offered — if not ever ster, information on whether module can be chosen to earn a bonus)	ery seme-
written examination (approx. 60 to 90 minutes) If announced by the lecturer at the beginning of the course, the written examination may be replaced by oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 cand (approx. 15 minutes per candidate) and written exercises (approx. 12 exercise sheets, approx. 3 exercise sheet).	didates
Allocation of places	
Additional information	
Workload	
180 h	
Teaching cycle	
Referred to in LPO I (examination regulations for teaching-degree programmes)	
§ 51 Nr. 3	
Module appears in	
First state examination for the teaching degree Grundschule Mathematics (2015)	
First state examination for the teaching degree Realschule Mathematics (2015)	
First state examination for the teaching degree Mittelschule Mathematics (2015) First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsvers 2015))	ion
exchange program Mathematics (2023)	

Module					Abbreviation
Elemen	itary S	tochastics			10-M-ELST-152-m01
Module	e coord	linator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	1	od of grading	Only after succ. con	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		topics in elementary stoc tochastic modelling, intro			/ theory, combinatorics, inferenti- es
		ning outcomes		<u></u>	
			inking and working i	n mathematics, as w	vell as the fundamental mathe-
		methods. He/She is able			
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)
V (3) +	Ü (1)				
Method	d of as	sessment (type, scope, la	nguage — if other tha	an German, examina	tion offered — if not every seme-
		ion on whether module ca			
		nation (approx. 60 to 90			
					tion may be replaced by an
					ation in groups of 2 candidates neets, approx. 3 exercises per
sheet).	x. 15 III	inutes per candidate) and	a witten exercises (a	pprox. 12 exercise si	leets, applox. 3 exercises per
Allocat	ion of	places			
Additio	onal inf	ormation			
	_				
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	lations for teaching-o	degree programmes)	
§ 51 N	r. 3				
Module	e appea	ars in			
First sta	ate exa	mination for the teaching	g degree Grundschule	Mathematics (2015)
		mination for the teaching	-	-	
		mination for the teaching			
	ate exa	mination for the teaching	g degree Mittelschule	Mathematics (2020	(Prüfungsordnungsversion
2015))					

exchange program Mathematics (2023)

Module	title				Abbreviation
Elemen	tary Nı	Imber Theory			10-M-ELZT-152-m01
Module	coord	inator		Module offered by	
Dean of		es Mathematik (Mathema		Institute of Mathem	atics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
6		rical grade			
Duratio		Module level	Other prerequisites		
1 semes		undergraduate			
Conten					
		o fundamental technique ics in elementary number			er as a basic theme in mathema-
		ning outcomes	theory and the struc		ystem.
			inking and working i	n mathematics as w	ell as the fundamental mathe-
matical	proof				the fields of number theory and
Courses	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (4) + l	Ü (2)				
		s essment (type, scope, la on on whether module ca			tion offered — if not every seme-
If annou oral exa	unced l aminati	on of one candidate each	inning of the course, n (approx. 20 minutes	s) or an oral examina	tion may be replaced by an ation in groups of 2 candidates aeets, approx. 3 exercises per
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
180 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)	
§ 51 N	r. 3				
Module	appea	irs in			
First sta First sta First sta 2015))	ate exa ate exa ate exa		degree Realschule M degree Mittelschule degree Mittelschule	Nathematics (2015) Mathematics (2015)	
exchan	ge prog	gram Mathematics (2023)			

Module	title			Abbreviation	
Basic No	otions and Methods of Math	ematical Reasoning		10-M-GBM-152-m01	
Modulo	coordinator		Module offered by		
			Institute of Mathem		
	Studies Mathematik (Mathe Method of grading			latics	
	(not) successfully completed	Only after succ. con			
2 Duration	· · / /				
1 semes		Other prerequisites			
Content					• •
	tion to the basic notions an	d proof techniques in m	athematics: approa	ch to sets, formal log	fic and maps.
	d learning outcomes				
	dent gets acquainted with th nelor's degree study progran		ues which are prere	quisites for the furth	er courses in
Courses	(type, number of weekly co	ntact hours, language –	- if other than Germa	ın)	
V (1) + Ü	(1)				
	of assessment (type, scope ormation on whether module			tion offered — if not	every seme-
	(10 to 15 pages) ge of assessment: German a	nd/or English			
Allocatio	on of places				
	•				
Addition	nal information				
	nal information on module d	uration: block taught pr	ior to the beginning	of the lecture period	
Workloa				or the tecture period	•
60 h	lu				
Teaching	g cycle				
Referred	to in LPO I (examination re	gulations for teaching-	legree programmes)		
§ 22 N § 22 N	r. 1 h)	3	<u></u>		
	appears in				
	r's degree (1 major) Mathem	atics (2015)			
	r's degree (1 major) Econom				
	r's degree (1 major) Mathem				
Bachelo	r's degree (1 major) Comput	ational Mathematics (20	015)		
First stat	te examination for the teach	ing degree Grundschule	Mathematics (2015)	
	te examination for the teach				
	te examination for the teach		Mathematics (2015)		
	r's degree (1 major) Mathem				
	r's degree (1 major) Econom		Mathomatics (ac	Drüfungeardaus	vorcion
FIRST STAT 2015))	te examination for the teach		mathematics (2020	(Fininingsorannings)	151011
-	r's degree (1 major) Mathem	atical Physics (2020)			
	r's degree (1 major) Econom				
	r's degree (1 major) Econom				
		atical Data Science (20	22)		
Bachelo	i s degree (i major) matrien		,		
	ge program Mathematics (20	23)	,		

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Economathematics (2025)

Module	e title				Abbreviation
Basic A					10-M-GRAN-152-m01
Module	e coord	inator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	ntics)	Institute of Mathem	atics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
12	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	undergraduate			
Conten	ts				
mann ii tiability	ntegral v, inver), Taylor approximation a	nd power series, func heorem, curves in R^	tions in several vari n, curve integrals, in	ferentiation and integration (Rie- ables, total and partial differen- itegration theorems in higher di-
Intende	ed lear	ning outcomes			
compre form. H	ehend t e/She	he central proof methods	, can perform easy m	athematical argume	eral variables. He/She is able to ents and present them in written f analysis in one and several va-
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (4) +	Ü (2) +	V (2) + Ü (2)			
ster, inf written If annot examin	formati examin unced ation c 5 minut	ion on whether module canation (approx. 60 to 120 by the lecturer at the beg of one candidate each (ap tes per candidate).	an be chosen to earn minutes). inning of the course,	a bonus) the written examina	tion offered — if not every seme- tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of _l	olaces			
Additio	nal inf	ormation			
Worklo	ad				
360 h					
Teachir	ng cycl	ρ			
Poforro	d to in	LPOI (examination regu	lations for teaching	legree programmes)	
		LI UT (examination regu			
§ 51 N		··· •			
Module			dogroo Crundashulo	Mathamatics (2017)	<u></u>
		mination for the teaching mination for the teaching	-		
		mination for the teaching	-		
		-	-	-	(Prüfungsordnungsversion
exchan	ge pro	gram Mathematics (2023))		

Module	title				Abbreviation
Basic D	ifferen	tial Equations			10-M-GRDG-152-m01
Module	coord	inator		Module offered by	
Dean of	fStudie	es Mathematik (Mathema	tics)	Institute of Mathem	atics
ECTS		od of grading	Only after succ. com	pl. of module(s)	
5	<u> </u>	rical grade			
Duratio		Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
		natural appearances of o Peano), systems of linea			and uniqueness theorems (Pi- examples.
Intende	ed learr	ning outcomes			
prehen	d the c	entral proof methods, car	n perform easy mathe	ematical arguments a	uations. He/She is able to com- and present them in written form. rential equations to solve them.
Courses	s (type,	number of weekly conta	ct hours, language —	if other than Germa	n)
V (3) + ĺ	Ü (2)				
		essment (type, scope, la on on whether module ca			tion offered — if not every seme-
lf annou examin	unced l ation o 5 minut	f one candidate each (ap es per candidate).	inning of the course,		tion may be replaced by an oral in groups of 2 candidates (ap-
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teachir	ng cycle	e			
Referre	d to in	LPOI (examination regu	lations for teaching-d	legree programmes)	
§ 51 N	r. 1				
Module	appea	rs in			
First sta First sta First sta 2015))	ate exa ate exa ate exa	mination for the teaching mination for the teaching mination for the teaching mination for the teaching gram Mathematics (2023)	degree Realschule M degree Mittelschule degree Mittelschule	Nathematics (2015) Mathematics (2015)	

Module title				Abbreviation
Basic Linear A	nalysis			10-M-GRLA-152-m01
Module coord	inator		Module offered by	
Dean of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	atics
1	od of grading	Only after succ. com	pl. of module(s)	
- 1	rical grade			
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
	ar algebra: groups, rings, naps, examples and appl		ear equations, vecto	r spaces, matrices and determi-
Intended lear	ning outcomes			
the central pro		easy mathematical a	arguments and prese	. He/She is able to comprehend ent them in written form. He/She a to solve them.
Courses (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (4) + Ü (2)				
	sessment (type, scope, la on on whether module ca			tion offered — if not every seme-
If announced examination of	of one candidate each (ap es per candidate).	inning of the course,		tion may be replaced by an oral in groups of 2 candidates (ap-
Allocation of	olaces			
Additional inf	ormation			
Workload				
270 h				
Teaching cycl	e			
Referred to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§ 51 Nr. 2				
Module appea	urs in			
First state exa First state exa First state exa 2015))	mination for the teaching mination for the teaching mination for the teaching mination for the teaching gram Mathematics (2023)	g degree Realschule N g degree Mittelschule g degree Mittelschule	Aathematics (2015) Mathematics (2015)	

Modul					Abbreviation
Thesis	in Mat	hematics (German Mittel	lschule)		10-M-HMMS-152-m01
Modul	e coord	inator		Module offered by	<u> </u>
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
2 seme	ester	undergraduate			
Conter	nts				
		y researching and writing supervisor.	on a topic in mathen	natics or mathemati	cs didactics selected in consulta
Intend	ed lear	ning outcomes			
tained work ir	during 1 a suita	his/her studies in the tea able form, incorporating a	aching degree progra aspects of the didacti	mme. He/She can w ics of mathematics.	pply the skills and methods ob- rite down the result of his/her
Course	es (type	, number of weekly conta	act hours, language –	- if other than Germa	an)
No cou	irses as	signed to module			
ster, in Hausa to 300 Langua	iformat rbeit (th hours) age of a	ion on whether module c nesis) pursuant to Section	an be chosen to earn n 29 LPO I (examinati	a bonus) on regulations for te	ation offered — if not every seme eaching-degree programmes) (25 on 4 LPO I (examination regulati-
	tion of		-		
Allocu					
Additia		ormation			
Auditio					
 Worklo			-		
	Jau				
300 h					
Teachi	ng cycl	е			
Referre	ed to in	LPO I (examination regu	llations for teaching-o	degree programmes)	
§ 29					
Modul	e appea	are in			
Mouut					

	e title				Abbreviation
Reviev	v Cours	e Mathematics (German	Grundschule/Mittelscl	nule/Realschule)	10-M-M3GMR-152-m01
Modul	e coord	linator	1	Nodule offered by	<u></u>
Dean o	of Studi	es Mathematik (Mathema	atics) I	nstitute of Mathen	natics
ECTS	Meth	od of grading	Only after succ. comp	l. of module(s)	
5	(not)	successfully completed			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts				
		consolidation of the topic completing exercises and			ons, linear algebra and analytic
Intend	ed lear	ning outcomes			
					regulations for teaching degree
		, §51 (2) 1, 2, and is able			
	es (type	, number of weekly conta	ict nours, language — l	r other than Germa	in)
Ü (4)					
					ition offered — if not every seme
		ion on whether module c	an de chosen lo eann a	Dollus)	
		x. 45 minutes) or to 15 pages)			
Alloca	tion of	places			
A .] .]***	1 * 4				
Additio	onal Ini	ormation			
		ormation			
 Workle		ormation			
 Workle		ormation			
 Workle 150 h					
 Workle 150 h	oad				
 Workle 150 h Teachi 	oad ing cycl		lations for teaching-de	gree programmes)	
 Workle 150 h Teachi Referre	oad ing cycl ed to in	e		gree programmes)	
 Worklo 150 h Teachi Referro § 51 sp	oad ing cycl ed to in	e LPO I (examination regu ranch of science without		gree programmes)	
 Worklo 150 h Teachi Referro § 51 sp Modul	oad ing cycl ed to in becial b e appe	e LPO I (examination regu ranch of science without	assignment		
 Workle 150 h Teachi & 51 sp Modul First st	oad ing cycl ed to in becial b e appea tate exa	LPO I (examination regunder and the second	assignment g degree Grundschule I	Mathematics (2015	
 Worklo 150 h Teachi § 51 sp Modul First st First st	ed to in becial b eate exa tate exa	LPO I (examination regunants of science without ars in and for the teaching	assignment g degree Grundschule I g degree Realschule Ma	Mathematics (2015 athematics (2015))

Module					Abbreviation
School	Mathe	matics from a Higher Pe	rspective		10-M-SCH-152-m01
Module	e coord	inator		Module offered by	<u> </u>
		es Mathematik (Mathem	atics)	Institute of Mather	natics
ECTS		od of grading	Only after succ. com		
5		successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		selected topics in schoo implementation at both		. –	ration into wider theories and
Intend	ed lear	ning outcomes			
	vancec	I mathematical theories.			between school mathematics athematical, didactical and me-
Course	s (type	, number of weekly conta	act hours, language —	- if other than Germa	an)
V (2) +	Ü (2)				
		s essment (type, scope, la ion on whether module c			ation offered — if not every seme
c) proje Langua	ect wor ige of a	(10 to 15 pages) or k (15 to 25 hours) ssessment: German and ffered: In the semester in	/or English	offered and in the s	ubsequent semester
c) proje Langua	ect wor ge of a ment o	k (15 to 25 hours) ssessment: German and ffered: In the semester in	/or English n which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat	ect wor age of a ment o ion of J	k (15 to 25 hours) ssessment: German and ffered: In the semester in	/or English h which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat	ect wor age of a ment o ion of J	k (15 to 25 hours) ssessment: German and ffered: In the semester in places	/or English n which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat Additio 	ect wor age of a ment o ion of p	k (15 to 25 hours) ssessment: German and ffered: In the semester in places	/or English h which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat	ect wor age of a ment o ion of p	k (15 to 25 hours) ssessment: German and ffered: In the semester in places	/or English n which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat Additio Worklo	ect wor ge of a ment o ion of p nal inf ad	k (15 to 25 hours) Issessment: German and Iffered: In the semester in places ormation	/or English n which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat Additio Worklo 150 h	ect wor ge of a ment o ion of p nal inf ad	k (15 to 25 hours) Issessment: German and Iffered: In the semester in places ormation	/or English n which the course is	offered and in the s	ubsequent semester
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin	ect wor ige of a ment o ion of j onal inf ad	k (15 to 25 hours) Issessment: German and Iffered: In the semester in places ormation	n which the course is		
c) proje Langua Assess Allocat Additio 150 h Teachin § 22 II I § 22 II	ect wor age of a ment o ion of p onal inf ad ad ad Nr. 1 h) Nr. 2 f)	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPOI (examination regu	n which the course is		
c) proje Langua Assess Allocat Additio 150 h Teachin § 22 II § 22 II § 22 II	ect wor ige of a ment o ion of j mal inf ad ad ing cycl ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f)	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu	n which the course is		
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II	ect wor ge of a ment o ion of j onal inf ad ad ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu	n which the course is		
c) proje Langua Assess Allocat Additio 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II Bachel	ect wor age of a ment o ion of j onal inf ad ad ad ad wr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu	n which the course is		
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II Bachel Bachel Bachel Bachel	ect wor ige of a ment o ion of j mal inf ad ad ad ad ad by cycl ad ad by cycl ad ad ad ad ad ad ad ad ad by cycl ad by cycl ad by cycl ad by cycl ad by cycl ad by cycl ad by cycl by cycl cycy	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu ars in gree (1 major) Mathemat gree (1 major) Computati	n which the course is allations for teaching-out ics (2015) ical Physics (2015) onal Mathematics (20	degree programmes)
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II § 22 II Bachel Bachel Bachel First sta	ect wor ige of a ment o ion of j onal inf ad ad ed to in Nr. 1 h) Nr. 2 f) Nr. 3 f) e appea or's de or's de or's de ate exa	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu ars in gree (1 major) Mathemat gree (1 major) Computati mination for the teaching	n which the course is ulations for teaching-out ics (2015) ical Physics (2015) onal Mathematics (20 g degree Grundschule	degree programmes)
c) proje Langua Assess Allocat Morklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II Bachel Bachel Bachel Bachel First sta First sta	ect wor age of a ment o ion of p mal inf ad ad ad ad ad ad ad ad ad ad	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu ars in gree (1 major) Mathemat gree (1 major) Mathemat gree (1 major) Computati mination for the teaching mination for the teaching	n which the course is ulations for teaching-out ics (2015) ical Physics (2015) onal Mathematics (20 g degree Grundschule g degree Realschule M	Dify) Mathematics (2015))
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II Bachel Bachel Bachel Bachel First sta First sta	ect wor ige of a ment o ion of j mal inf ad ad ad ad ad ad ad ad ad ad	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu ars in gree (1 major) Mathemat gree (1 major) Mathemat gree (1 major) Computati mination for the teaching mination for the teaching mination for the teaching	n which the course is ulations for teaching-out ics (2015) ical Physics (2015) onal Mathematics (20 g degree Grundschule g degree Realschule M g degree Gymnasium	degree programmes 2015) 9 Mathematics (2019) Mathematics (2015))
c) proje Langua Assess Allocat Additio Worklo 150 h Teachin § 22 II § 22 II § 22 II § 22 II § 22 II Bachel Bachel Bachel Bachel Bachel First sta First sta First sta	ect wor ige of a ment o ion of j mal inf ad ad ad ad ad ad ad ad ad ad	k (15 to 25 hours) ssessment: German and ffered: In the semester in places ormation e LPO I (examination regu ars in gree (1 major) Mathemat gree (1 major) Mathemat gree (1 major) Computati mination for the teaching mination for the teaching	n which the course is lations for teaching-out ics (2015) ical Physics (2015) onal Mathematics (20 g degree Grundschule g degree Gymnasium g degree Mittelschule	degree programmes 2015) 9 Mathematics (2019) Mathematics (2015))



First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))

Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Mathematical Data Science (2022) exchange program Mathematics (2023) First state examination for the teaching degree Gymnasium Mathematics (2023) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's degree (1 major) Mathematical Physics (2024)

LA Mittelschulen	Mathematics	(2015)	
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Module	title				Abbreviation
Practic	al Trair	ning in Classroom Teachi	ng including Theory	(German Mittel-	10-M-SFDPMS-152-m01
schule)					
Module	e coord	inator		Module offered by	
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Mathen	natics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
focus o specific ject-spo res wha dactic a cordan practico	n the s c teach ecific te at he/s aspects ce with e, also	cientific discipline) or Di- ing models, examples an echniques. In the univers he has learned during his s. In this context, the cou applicable guidelines ar taking into account aspe	daktikfach (subject si d projects in differen ity course accompany s/her teaching placer rse discusses selecte nd curricula. The cour cts of school pedago	tudied with a focus of t grades, the modul ying the placement, nent and explores a ed practical aspects rse focuses on recen gy and learning psyc	chtsfach (subject studied with a on teaching methodology). Using e introduces the student to sub- the student reflects and structu- dditional subject-specific and di- of teaching mathematics in ac- t developments in classroom chology that can support the suc-
	<u> </u>	cal implementation of su		tuat designs.	
		ning outcomes			
able to cationa cognisa	teach f Il syste ance ar	the relevant topics for dif m. He/She is able to con ad incorporate them in th	ferent forms, and car nect ideas from scho e mise-en-scène of h	n critically reflect the ol pedagogy and lea is/her teaching.	d organising teaching. He/She is recent developments in the edu- rning psychology with didactical
		, number of weekly conta	ct hours, language —	· if other than Germa	an)
P (o) +	S (2)				
		essment (type, scope, la on on whether module ca			ation offered — if not every seme-
b) term Conten regulat tasks a	paper ts and ions fo s speci	r teaching-degree progra fied by placement schoo	specified in Section mmes); participation	34 Subsection 1 Sei	ntence 1 No. 4 LPO I (examination ing practice, completion of all set
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
120 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes	
§ 34 1					
Module		urs in			
First sta	ate exa ate exa	mination for the teaching	-		e (2015) e (2020 (Prüfungsordnungsversi-

LA Mittelschulen Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg. data re-
	cord Lehramt Mittelschulen (Unterrichtsfach) Mathematik - 2015

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Module					Abbreviation
Basics	in Aritl	metics (virtual course)			10-M-VHBAri-152-m01
Module	e coord	inator		Module offered by	<u> </u>
		es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS		od of grading	Only after succ. con		
2		successfully completed		1 ()	
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conten	nts				
Basic t	opics o	n teaching arithmetics in	school, e. g. divisab	ility theory, prime nu	Imbers, set theory.
		ning outcomes		<u> </u>	
	-		eaching of arithmetic	s and the related m	athematical backgrounds and
					ching arithmetic in school.
Course	es (type	, number of weekly conta	act hours, language –	- if other than Germa	in)
Ü (2)					
Course	e type: e	Learning, mostly Virtuell	e Hochschule Bayern	(vhb)	
					tion offered — if not every seme-
		on on whether module c	an be chosen to earn	a bonus)	
		based, 15 to 20 hours)			
		ffered: Once a year, wint	er semester		
Allocat	tion of _l	olaces			
	_				
Additio	onal inf	ormation			
	_				
Worklo	oad		-		
60 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	llations for teaching-o	degree programmes)	
§ 22	Nr. 1 h)				
§ 22	-				
§ 22	-				
	e appea				
		mination for the teaching			
					matics (Primary School) (2015)
		mination for the teaching mination for the teaching			
					athematics (Primary School)
(2015)					
First st (2015)	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in M	athematics (Middle School)
		mination for the teaching			
					natics (Middle School) (2015)
	ate exa ate exa	mination for the teachinន	g degree Gymnasium	Mathematics (2019)	



First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module title			Abbreviation		
	Didactics of Algebra (virtual course) 10-M-VHBDA-152-m01				
Module	e coord	inator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS		od of grading	Only after succ. con	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		tics is about learning and algebra: extensions of n			n the central and important to- lations and functions.
Intende	ed lear	ning outcomes			
The students are acquainted with the subject-specific contents of school algebra, and are able to structure the notions and methods within a conceptual map. They know strategies of short, middle and long term development of understanding of the central concepts of algebra in teaching mathematics. They are able to develop and justify learning units and learning sequences for the important topics in school algebra independently. They are able to assess and value the importance of digital technology with respect to todays and future design of instruction. They know various fields of application of algebraic concepts, and are able to perform modelling (in the sense of modelling cycles) independently.					
Course	s (type	, number of weekly conta	ict hours, language –	· if other than Germa	n)
Ü (2) Course	type: e	Learning, mostly Virtuell	e Hochschule Bayern	(vhb)	
		e ssment (type, scope, la on on whether module c			tion offered — if not every seme-
		oased, 15 to 20 hours) ffered: Once a year, wint	er semester		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachi	ng cycl	٩			
reaction	is cyci	6			
Referre	d to in	LPOI (examination regu	lations for teaching.	legree programmes)	
		, § 22 Nr. 2 f)			
§ 22 § 22		, <u>y</u> zz ii iii. z i <i>j</i>			
Module	e appea	in and a second s			
		mination for the teachinន			
					natics (Primary School) (2015)
		mination for the teaching		-	
		mination for the teaching		-	
(2015)					athematics (Primary School)
First sta (2015)	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in Ma	athematics (Middle School)
First sta	ate exa	mination for the teachinន្	g degree Mittelschule	Mathematics (2015)	
					natics (Middle School) (2015)
LA Mittelsc	hulen Mat	hematics (2015)		enerated 18-Apr-2025 • exam schulen (Unterrichtsfach) Mat	



First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module	e title				Abbreviation	
Didacti	ics of G	eometry (virtual cours	e)		10-M-VHBDG-152-m	101
Madula	e coord	antor .		Module offered by		
	1	es Mathematik (Mathe	Ĩ.	Institute of Mathem	latics	
ECTS 2		od of grading successfully completed	Only after succ. con			
Duratio	·	Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate				
importa which a chapte Intende	ant for a are usu rs on sp ed lear	all of geometry and ma ally discussed only bri bace geometry, trigono hing outcomes	and teaching geometr thematics, namely prov efly or not at all in unive metry and similarity ge e subject-specific conte	ving and problem so ersity lectures and in ometry.	lving. It also address the literature. Amor	ses topics ng these are
ment of and jus They ar of instr (in the	of under stify lea re able ruction. sense o	standing of the central rning units and learnir to assess and value th They know various fiel of modelling cycles) in	ptual map. They know s concepts of geometry g sequences for the im e importance of digital ds of application of geo dependently. tact hours, language –	in teaching mathema portant topics in sch technology with resp ometric concepts, an	atics. They are able t nool geometry indep pect to todays and fu nd are able to perform	o develop endently. Iture design
Course			elle Hochschule Bayern			
			language — if other the can be chosen to earn		tion offered — if not	every seme-
		ased, 15 to 20 hours) ffered: Once a year, su	mmer semester			
Allocat	tion of p	olaces				
 Additio	onal inf	ormation				
Worklo	ad					
60 h						
	ng cycl	9				
Referre	ed to in	LPOI (examination re	gulations for teaching-o	degree programmes)		
§ 22 § 22 § 22	Nr. 1 h) Nr. 2 f)		<u> </u>			
Module	e appea	rs in				
	ate exa	mination for the teachi	ng degree Grundschule ng degree Grundschule ng degree Realschule M	e Didactics in Mather Mathematics (2015)		ool) (2015)
First sta First sta	ate exa	mination for the teachi	ng degree Gymnasium ng degree Sonderpäda		athematics (Primary	School)

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2015)

First state examination for the teaching degree Mittelschule Mathematics (2015)

First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module	e title				Abbreviation
Exam T	utorial	Didactics of Mathematic	s (virtual course)		10-M-VHBEx-152-m01
Module	e coord	inator		Module offered by	
		es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS		od of grading	Only after succ. con		lutics
2		successfully completed		<u> </u>	
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
the Ers as basi	tes Sta ic guide	atsexamen für Lehramt G elines for answering exan	ymnasium (first state	e examination for tea	g of theorems) in preparation for aching at a Gymnasium) as well state examination in Bavaria).
Intend	ed lear	ning outcomes			
The stu	ident le	arns about the structure	of the state exams a	nd different methods	s for solving the exam problems.
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	an)
Ü (2)	typore	Learning, mostly Virtuell	e Hochschulo Bauern	(vhb)	
					tion offered if not even come
		on on whether module ca			ation offered — if not every seme
		based, 15 to 20 hours)		/	
		ffered: Once a year, wint	er semester		
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
60 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	lations for teaching-o	degree programmes)	
§ 22 § 22 § 22	Nr. 2 f)				
Module	e appea	ars in			
First st	ate exa	mination for the teaching			.) matics (Primary School) (2015)
		mination for the teaching			
		mination for the teaching			
First sta (2015)	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in M	athematics (Primary School)
_	ate exa	mination for the teaching	g degree Sonderpäda	gogik Didactics in M	athematics (Middle School)
First sta First sta	ate exa		g degree Mittelschule	Didactics in Mather) matics (Middle School) (2015) 9 (Prüfungsordnungsversion

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

	title				Abbreviation
Basics in	n School	Geometry (virtual cou	ırse)		10-M-VHBGeo-152-mo1
Module	coordina	tor		Module offered by	<u> </u>
Dean of !	Studies	Mathematik (Mathema	atics)	Institute of Mathem	natics
		of grading	Only after succ. com		-
		cessfully completed			
Duration		odule level	Other prerequisites		
1 semest		ndergraduate			
Contents			J		
					nat are prerequisites for the sub- Hauptschule, Realschule) in geo-
Intended	d learnin	g outcomes			
		basic knowledge of sc quainted with the em			of mathematics and its didac- g geometry in school.
Courses	(type, n	umber of weekly conta	act hours, language –	· if other than Germa	in)
Ü (2) Course ty	ype: eLe	arning, mostly Virtuell	e Hochschule Bayern	(vhb)	
		sment (type, scope, la on whether module c			tion offered — if not every seme
		ed, 15 to 20 hours) red: Once a year, sum	mer semester		
Allocatio	on of pla	ces			
Addition	al inform	nation			
Workloa	d				
60 h					
Teaching			-		
	Scycie				
Referred	l to in I P	OI (examination regu	lations for teaching.	legree programmes)	
§ 22 Ni				- 0·	
	r. 2 f)				
9 Z Z 11 INI					
§ 22 NI § 22 NI					
	appears	in			
§ 22 II Ni Module a First stat	te exami	nation for the teaching			
§ 22 II Ni Module a First stat First stat	te exami te exami	nation for the teaching nation for the teaching	g degree Grundschule	Didactics in Mather) matics (Primary School) (2015)
§ 22 II Ni Module a First stat First stat First stat	te exami te exami te exami	nation for the teaching nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule N	e Didactics in Mather Nathematics (2015)	matics (Primary School) (2015)
§ 22 Nı Module a First stat First stat First stat First stat	te exami te exami te exami te exami	nation for the teaching nation for the teaching nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule A g degree Gymnasium	e Didactics in Mather Aathematics (2015) Mathematics (2015)	matics (Primary School) (2015)
§ 22 II Ni Module a First stat First stat First stat First stat First stat	te exami te exami te exami te exami	nation for the teaching nation for the teaching nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule A g degree Gymnasium	e Didactics in Mather Aathematics (2015) Mathematics (2015)	matics (Primary School) (2015)
§ 22 II Ni Module a First stat First stat First stat First stat First stat (2015) First stat	te exami te exami te exami te exami te exami te exami	nation for the teaching nation for the teaching nation for the teaching nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule A g degree Gymnasium g degree Sonderpäda	e Didactics in Mather Aathematics (2015) Mathematics (2015) gogik Didactics in M	matics (Primary School) (2015)
§ 22 II Ni Module a First stat First stat First stat First stat First stat (2015) First stat (2015)	te exami te exami te exami te exami te exami te exami	nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule M g degree Gymnasium g degree Sonderpäda g degree Sonderpäda	e Didactics in Mathen Aathematics (2015) Mathematics (2015) gogik Didactics in M gogik Didactics in M	matics (Primary School) (2015) athematics (Primary School) athematics (Middle School)
§ 22 II Ni Module a First stat First stat First stat First stat (2015) First stat (2015) First stat	te exami te exami te exami te exami te exami te exami te exami	nation for the teaching nation for the teaching	g degree Grundschule g degree Realschule M g degree Gymnasium g degree Sonderpäda g degree Sonderpäda g degree Mittelschule	e Didactics in Mathen Mathematics (2015) Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015)	matics (Primary School) (2015) athematics (Primary School) athematics (Middle School)

LA Mittelschulen Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg. data re-	page 38 / 47
	cord Lehramt Mittelschulen (Unterrichtsfach) Mathematik - 2015	



First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module	e title			Abbreviation	
Mather	matics in grade 10 (virtual cou	ırse)		10-M-VHBM10-152-	m01
Module	e coordinator		Module offered by		
Dean o	f Studies Mathematik (Mathe	matics)	Institute of Mathem	natics	
ECTS	Method of grading	Only after succ. con	npl. of module(s)		
2	(not) successfully completed	l			
Duratio	on Module level	Other prerequisites			
1 seme	ster undergraduate				
Conten	its				
Basic to	opics on teaching mathematic	s in tenth grade in Hau	ptschule, Realschul	e and Gymnasium.	
	ed learning outcomes				
			tion in touth forms at		and Deal
	ident learns basic topics in the , as well as the related mather				
	technologies for teaching mat			acquainteu with the	employment
	· · · · · · · · · · · · · · · · · · ·			n	
	s (type, number of weekly con	nact nours, language –	- n other than Germa	11 <i>)</i>	
Ü (2)	type: eLearning, mostly Virtue	alla Hachcebula Pauarr	(vhb)		
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
	d of assessment (type, scope,			tion offered — if not	every seme-
	formation on whether module	can be chosen to earn	a Donus)		
	(web-based, 15 to 20 hours)				
	ment offered: Once a year, su	mmer semester			
Allocat	ion of places				
Additio	onal information				
Worklo	ad				
60 h	<u></u>				
Teachi	ng cycle				
Referre	ed to in LPO I (examination reg	gulations for teaching-	degree programmes)		
§ 22	Nr. 1 h)				
§ 22					
§ 22	•				
Module	e appears in				
First sta	ate examination for the teachi	ng degree Grundschule	Mathematics (2015)	
	ate examination for the teachi			matics (Primary Scho	ool) (2015)
	ate examination for the teachi				
	ate examination for the teachi				
	ate examination for the teachi	ng degree Sonderpäda	gogik Didactics in M	athematics (Primary	School)
(2015)	ato over instian for the target	na doaroo Condoursed-	rogik Didoctica in M	athomatics (Middle	School
FIrst sta (2015)	ate examination for the teachi	ng degree Sonderpada	gogik Didactics in M	athematics (MIDDLe	501001)
-	ate examination for the teachi	ng degree Mittelschule	Mathematics (2015)		
	ate examination for the teachi				ol) (2015)
	ate examination for the teachi				
	ate examination for the teachi		-		version
2015))					
	· · · · · · · · · · · · · · · · · · ·				
LA Mittelsc	hulen Mathematics (2015)		enerated 18-Apr-2025 • exam schulen (Unterrichtsfach) Ma	-	page 40 / 47



First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module tit	tle			Abbreviation	
Mathemat	tics 1 (virtual course)			10-M-VHBMa1-152-	m01
Module co			Mandala afferradita		
			Module offered by		
	udies Mathematik (Mathe		Institute of Mathem	atics	
	ethod of grading	Only after succ. cor	npl. of module(s)		
	ot) successfully completed				
Duration	Module level	Other prerequisites	i		
1 semeste	r undergraduate				
Contents					
	n of basic topics on teachin tals concerning the organi	e ,	vmnasium, in particu	lar verbal and subje	ct-specific
Intended l	earning outcomes				
The stude	nt is able to discuss select ng both subject-related and		is on teaching mathe	matics at German G	ymnasium,
	ype, number of weekly cor		- if other than Germa	n)	
Ü (2) Course typ	be: eLearning, mostly Virtu	elle Hochschule Bayerr	ı (vhb)		
ster, inforr	f assessment (type, scope, mation on whether module			tion offered — if not	every seme-
Assessme	eb-based, 15 to 20 hours) nt offered: Every two years	, winter semester			
Allocation	of places				
Additional	linformation				
Workload					
60 h					
Teaching	cvcle				
Defermed t			d		
	o in LPO I (examination re	guiations for teaching-	degree programmes)		
§ 22 Nr. § 22 Nr. § 22 Nr.	2 f)				
Module ap					
	examination for the teach	ng degree Grundschule	e Mathematics (2015)	
	examination for the teach		-		ool) (2015)
	examination for the teach			- ,	
	examination for the teach		_		
First state (2015)	examination for the teach	ng degree Sonderpäda	ngogik Didactics in M	athematics (Primary	School)
(2015)	examination for the teach				School)
	examination for the teach				-1) ()
	examination for the teach				01) (2015)
	examination for the teach		-		vorcion
2015))	examination for the teach	ווא מפצופפ אווננפוגנוועופ	- mathematics (2020	(Fiulungsolunungs)	VEISIOII
LA Mittelschule	n Mathematics (2015)	IMU Würzburg • g	enerated 18-Apr-2025 • exam	. reg. data re-	page 42 / 47
			schulen (Unterrichtsfach) Ma		



First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module	e title			Abbreviation	
Mather	matics 2 (virtual course)			10-M-VHBMa2-152-	m01
Madula	e coordinator		Module offered by		
			· · · ·		
	f Studies Mathematik (Mathe	- i - i - i - i - i - i - i - i - i - i	Institute of Mathem	latics	
ECTS	Method of grading	Only after succ. con	npl. of module(s)		
2	(not) successfully completed				
Duratio		Other prerequisites	i		
1 seme	ster undergraduate				
Conten	ts				
	sion of central topics on teach of implementation in the clas		Gymnasium, in partic	ular didactic analys	es and possi-
Intende	ed learning outcomes				
	ident is able to discuss and a sium from a didactical point of	,	and questions on tea	ching mathematics	at German
	s (type, number of weekly cor		- if other than Germa	n)	
Ü (2)				,	
• •	type: eLearning, mostly Virtu	elle Hochschule Baverr	ı (vhb)		
Metho	d of assessment (type, scope, formation on whether module	, language — if other th	an German, examina	tion offered — if not	every seme-
	(web-based, 15 to 20 hours) ment offered: Every two years	summer comester			
	·	, summer semester			
Allocal	ion of places				
Additio	onal information				
Worklo					
60 h					
Teachi	ng cycle				
Referre	ed to in LPO I (examination re	gulations for teaching-	degree programmes)		
§ 22 § 22	Nr. 2 f)				
§ 22					
	e appears in				
	ate examination for the teach				
	ate examination for the teach			natics (Primary Scho	00l) (2015)
	ate examination for the teach				
	ate examination for the teaching			athomatics (Driman	(School)
(2015)	ate examination for the teach				
(2015)	ate examination for the teach				School)
	ate examination for the teach				\mathcal{N}
	ate examination for the teach				01) (2015)
	ate examination for the teach		-		
First sta 2015))	ate examination for the teach	ing degree Mittelschule	e mathematics (2020	(Prutungsordnungs	version
LA Mittelsc	hulen Mathematics (2015)		enerated 18-Apr-2025 • exam schulen (Unterrichtsfach) Ma	-	page 44 / 47



First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)

Module	title	Abbreviation			
Stocha	stics in Sekundarstufe I (virtu		10-M-VHBSto-152-m01		
	e coordinator		Module offered by		
	f Studies Mathematik (Mather		Institute of Mathem	atics	
ECTS	Method of grading	Only after succ. con	npl. of module(s)		
2	(not) successfully completed				
Duratio		Other prerequisites			
1 seme	ster undergraduate				
Conten	ts				
Revisio	n and consolidation of the fur	ndamental topics in sto	chastics that are pre	requisites for the su	bject-speci-
	didactic courses in stochastic			•	, ,
Intende	ed learning outcomes				
	dent has basic knowledge of	stochastics as require	d for the study of ma	thematics and its di	dar-
	/She is acquainted with the e	· ·			
	s (type, number of weekly con			-	
Ü (2)			in other than defina	'' <i>'</i>	
• •	type: eLearning, mostly Virtue	elle Hochschule Ravern	(vhb)		
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			tion offered if and	0100100000
	d of assessment (type, scope, formation on whether module			uon oherea — ir not	every seme-
-					
	(web-based, 15 to 20 hours) ment offered: Once a year, wit	ator comoctor			
	· · · · · · · · · · · · · · · · · · ·	inter semester			
Allocat	ion of places				
Additio	nal information				
Worklo	ad				
60 h					
Teachi	ng cycle				
Deferme					
	d to in LPO I (examination reg	gulations for teaching-	legree programmes)		
§ 22					
§ 22 § 22	-				
	e appears in				
	ate examination for the teachi				-1) ()
	ate examination for the teaching			natics (Primary Scho	01) (2015)
Eirct ct					
	ate examination for the teachi				
First sta	ate examination for the teachi	ng degree Gymnasium	Mathematics (2015)	athematics (Primary	School)
First sta First sta		ng degree Gymnasium	Mathematics (2015)	athematics (Primary	School)
First sta First sta (2015)	ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda	Mathematics (2015) gogik Didactics in M	-	
First sta First sta (2015)	ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda	Mathematics (2015) gogik Didactics in M	-	
First sta First sta (2015) First sta (2015)	ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda	Mathematics (2015) gogik Didactics in M gogik Didactics in M	athematics (Middle	
First sta First sta (2015) First sta (2015) First sta First sta	ate examination for the teachi ate examination for the teachi ate examination for the teachi ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule	Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015) Didactics in Mathem	athematics (Middle	School)
First sta First sta (2015) First sta (2015) First sta First sta First sta	ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule ng degree Gymnasium	Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015) Didactics in Mathen Mathematics (2019)	athematics (Middle s natics (Middle Schoo	School) ol) (2015)
First sta First sta (2015) First sta (2015) First sta First sta First sta First sta	ate examination for the teachi ate examination for the teachi ate examination for the teachi ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule ng degree Gymnasium	Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015) Didactics in Mathen Mathematics (2019)	athematics (Middle s natics (Middle Schoo	School) ol) (2015)
First sta First sta (2015) First sta (2015) First sta First sta First sta	ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule ng degree Gymnasium	Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015) Didactics in Mathen Mathematics (2019)	athematics (Middle s natics (Middle Schoo	School) ol) (2015)
First sta First sta (2015) First sta (2015) First sta First sta First sta First sta 2015))	ate examination for the teachi ate examination for the teachi	ng degree Gymnasium ng degree Sonderpäda ng degree Sonderpäda ng degree Mittelschule ng degree Mittelschule ng degree Gymnasium ng degree Mittelschule	Mathematics (2015) gogik Didactics in M gogik Didactics in M Mathematics (2015) Didactics in Mathen Mathematics (2019)	athematics (Middle s natics (Middle Schoo (Prüfungsordnungsv	School) ol) (2015)



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First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2020 (Prüfungsordnungsversion 2015))

exchange program Mathematics (2023)