

Module Catalogue

for the Subject

Mathematics

as a Bachelor's with 1 major with the degree "Bachelor of Science" (180 ECTS credits)

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 82|105|-|-|H|2015



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Learning Outcomes

German contents and learning outcome available but not translated yet.

Wissenschaftliche Befähigung

- Die Absolventinnen und Absolventen sind vertraut mit den Arbeitsweisen und der zugehörigen Fachsprache der Mathematik und beherrschen die Methoden mathematischen Denkens und Beweisens.
- Die Absolventinnen und Absolventen besitzen grundlegende Kenntnisse mindestens eines Gebiets der Angewandten Mathematik (Numerische Mathematik und/oder Stochastik) und können sicher mit den Methoden dieser Gebiete umgehen.
- Die Absolventinnen und Absolventen besitzen grundlegende Kenntnisse ausgewählter Gebiete der Reinen Mathematik und sind vertraut mit den grundlegenden Beweismethoden dieser Gebiete.
- Die Absolventinnen und Absolventen kennen die grundlegenden Denkweisen und Arbeitstechniken eines weiteren Fachs, in dem mathematische Methoden zum Einsatz kommen.
- Die Absolventinnen und Absolventen sind geschult in analytischem Denken, besitzen ein hohes Abstraktionsvermögen, universell einsetzbare Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge zu strukturieren.
- Die Absolventinnen und Absolventen sind in der Lage, sich selbständig mithilfe von Fachliteratur in weitere Gebiete der Mathematik einzuarbeiten.
- Die Absolventinnen und Absolventen sind in der Lage, ihre Kenntnisse, Ideen und Problemlösungen verständlich zu präsentieren.
- Die Absolventinnen und Absolventen besitzen die für ein weiterführendes, insbesondere Master-Studium, erforderlichen Grundkenntnisse, Denk- und Arbeitsweisen und Methodenkenntnisse.
- Die Absolventinnen und Absolventen kennen die Regeln guter wissenschaftlicher Praxis und sind in der Lage, sie in ihrer eigenen Arbeit zu beachten.

Befähigung zur Aufnahme einer Erwerbstätigkeit

- Die Absolventinnen und Absolventen sind geschult in analytischem Denken, besitzen ein hohes Abstraktionsvermögen, universell einsetzbare Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge zu strukturieren.
- Die Absolventinnen und Absolventen sind in der Lage, ihre Kenntnisse, Ideen und Problemlösungen zielgruppenorientiert verständlich zu formulieren und zu präsentieren.
- Die Absolventinnen und Absolventen sind in der Lage, konkrete Probleme aus anderen Gebieten zu erkennen, zu strukturieren, zu modellieren und mit mathematischen Methoden Lösungswege zu entwickeln.
- Die Absolventinnen und Absolventen besitzen ein ausgeprägtes Durchhaltevermögen bei der Lösung komplexer Probleme.
- Die Absolventinnen und Absolventen sind in der Lage, konstruktiv und zielorientiert in Teams zu arbeiten.
- Die Absolventinnen und Absolventen sind in der Lage, sich weitere Wissensgebiete selbständig, effizient und systematisch zu erschließen.
- Die Absolventinnen und Absolventen sind vertraut mit mindestens einer modernen Programmiersprache und können sicher mit mathematischer Software umgehen.
- Die Absolventinnen und Absolventen besitzen die Fähigkeit, in interdisziplinär zusammengesetzten Teams im Bereich der Informatik, Natur-, Ingenieurs- und Wirtschaftswissenschaften gestaltend mitzuwirken.

Persönlichkeitsentwicklung

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- Die Absolventinnen und Absolventen sind geschult in analytischem Denken, besitzen ein hohes Abstraktionsvermögen, universell einsetzbare Problemlösungskompetenz und die Fähigkeit, komplexe Zusammenhänge zu strukturieren.
- Die Absolventinnen und Absolventen sind in der Lage, gesellschaftliche, wirtschaftliche und historische Entwicklungen und Prozesse kritisch zu reflektieren und zu bewerten.
- Die Absolventinnen und Absolventen sind in der Lage, in partizipativen Prozessen gestaltend mitzuwirken.
- Die Absolventinnen und Absolventen besitzen ein ausgeprägtes Durchhaltevermögen bei der Lösung komplexer Probleme.
- Die Absolventinnen und Absolventen sind in der Lage, Ideen und Lösungsvorschläge allgemeinverständlich zu formulieren und präsentieren.

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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:

ASPO2015

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

05-Oct-2015 (2015-175)

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.

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Compulsory Courses

(40 ECTS credits)

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Module title Abbrevia				Abbreviation	
Overview Analysis 10-M-ANA-Ü-152-m			10-M-ANA-Ü-152-m01		
Module coordinator				Module offered by	
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
14	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
ries, dif	ferenti		n one variable, furthe		ivergence of sequences and se- erations, differential calculus
Intende	ed leari	ning outcomes			
them in	depen ckgrou	dently, He/She has an ov nd and geometric interpr	verview over the fund	amental notions and	analysis and is able to apply I concepts of analysis, their ana- xpress them adequately in writ-
Courses	5 (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) + (Ü (2)				
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to the contents of modules 10-M-ANA1 and 10-M-ANA2. Language of assessment: German and/or English					I-ANA2.
Allocation of places					
Additional information					
Workload					
420 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in				
		gree (1 major) Mathemati			
Bachelor's degree (1 major) Mathematics (2023)					

Module	title				Abbreviation	
Overvie	w Line	ar Algebra			10-M-LNA-Ü-152-m01	
Module	coord	inator		Module offered by		
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
14	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts					
	inants;	eigenvalue theory; biline			equations; theory of matrices and baces; diagonalisability and Jor-	
Intende	ed learr	ning outcomes				
ply ther knows a	n inde _l about t	pendently. He/She has a	n overview over the fi etric background, is a	undamental notions	linear algebra and is able to ap- and methods of linear algebra, each other and can present	
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) + l	Ü (2)					
		s essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Assessi	ment w	ion of one candidate each ill have reference to the o ssessment: German and,	contents of modules	10-M-LNA1 and 10-M	-LNA2.	
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
420 h						
Teachir	Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	appea	in in				
		gree (1 major) Mathemati				
Bachelo	or's deរ្	gree (1 major) Mathemati	cs (2023)			

Module title				Abbreviation	
Advanced Analysis				10-M-VAN-152-m01	
Module coord	Module coordinator			Module offered by	
Dean of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS Meth	od of grading	Only after succ. com	pl. of module(s)		
7 nume	rical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents					
Continuation	of analysis in several vari	ables, integration the	eorems.		
	ning outcomes				
The student is				of the Lesbegue integral, he or	
Courses (type,	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) + Ü (2)					
		ge — if other than German, e	examination offered — if no	t every semester, information on whether	
b) oral exami c) oral examir	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ussessment: German and, bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or		
Allocation of	places				
Additional in	ormation				
Workload					
210 h					
Teaching cyc	e				
Referred to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
			····· ,		
Module appe	ars in				
Bachelor's de Bachelor's de Bachelor's de Master's deg Master's deg Master's deg Master's deg Master's deg Master's deg Master's deg	gree (1 major) Mathemati gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Computati gree (1 major) Mathemati ee (1 major) Physics (201 ee (1 major) Nanostructur ee (1 major) Nanostructur ee (1 major) Physics (202 ee (1 major) Physics Inter ee (1 major) Quantum En ee (1 major) Quantum Teo gree (1 major) Mathemati	cal Physics (2015) onal Mathematics (20 cal Physics (2016) 6) re Technology (2016) re Technology (2020) o) national (2020) gineering (2020) chnology (2021)			

Module	e title				Abbreviation
Semina	ar Math	ematics			10-M-SEM-152-m01
Module	e coord	inator		Module offered by	<u> </u>
Dean o	f Studi	es Mathematik (Mathem	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites	;	
1 seme	ster	undergraduate			
Conten	Its		•		
A selec	ted top	ic in mathematics.			
Intend	ed lear	ning outcomes			
of a giv	en top	•	•	-	sters elaboration and structuring /She is able to participate active
	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
S (2)			_		
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether
•		o minutes)			
		ssessment: German and	l/or English		
Allocat	ion of _l	olaces			
			_		
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	ammes)	
§ 22	Nr. 3 f)				
Module	e appea	urs in			
		gree (1 major) Mathemat			
		gree (1 major) Computat		-	
		mination for the teachin	,		
		mination for the teachin		-	
		gree (1 major) Mathemat		22)	
		gram Mathematics (2023			
		mination for the teachin		iniatnematics (2023)	
васпеі	or s ae	gree (1 major) Mathemat	ics (2023)		



Mathematics

Compulsory Electives Mathematics

(79 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 16 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Subfield Basics of Analysis

(8 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 17 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation
Analysi	is 1				10-M-ANA1-152-m01
Module coordinator Module offe			Module offered by		
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
8		successfully completed		•	
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten		undergraduate	L		
Real nu ries; po	mbers wer se		sics in differential ca		ivergence of sequences and se- le; basics of integral calculus in
Intende	ed learr	ning outcomes			
central	proof r	nethods in analysis and o	can employ them to s	olve easy problems.	He/She is acquainted with the He/she is able to perform easy s precisely and clearly in written
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
exercis	es eacł			n exercises (approx.	12 exercise sheets with approx. 4
Allocat					
Additio	nal info	ormation			
Worklo	ad				
240 h					
Teachir	ng cycl	e			
	3 -)	-			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	ins in			
	Bachelor's degree (1 major) Mathematics (2015)				
	Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2015)				
		gree (1 major) Mathemati gree (1 major) Computatio	,))	
		gree (1 major) Computatio gree (1 major) Mathemati		112)	
		gree (1 major) Kathemati gree (1 major) Economath	•		
		gree (1 major) Economath			
		gram Mathematics (2023)			
		gree (1 major) Mathemati			
L					

Module	e title				Abbreviation	
Analysi	is 2				10-M-ANA2-152-m01	
Module	Module coordinator			Module offered by	Module offered by	
Dean of	fStudi	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
8	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		gical considerations, bas on theorem.	sics in differential cal	culus in several varia	ables, inverse function theorem,	
Intende	ed leari	ning outcomes				
central	proof r	nethods in analysis and o	can employ them to s	olve easy problems.	He/She is acquainted with the He/she is able to perform easy s precisely and clearly in written	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
Method	d of ass	Sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		le for bonus)				
exercis	es eacl			n exercises (approx.	12 exercise sheets with approx. 4	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
240 h						
Teachir	ıg cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	urs in				
-		gree (1 major) Mathemati	cs (2015)			
		gree (1 major) Computatio		015)		
		gram Mathematics (2023)				
Bachelo	Bachelor's degree (1 major) Mathematics (2023)					

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 19 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Subfield Basics of Linear Algebra

(8 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 20 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Linear	Algebra	11			10-M-LNA1-152-m01	
Module coordinator				Module offered by		
Dean of	f Studio	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
8	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Basic n termina		and structures; vector sp	aces, linear maps, sy	stems of linear equa	ations; theory of matrices and de-	
Intende	ed leari	ning outcomes				
ted witl	n the ce	entral proof methods in li	near algebra and can	apply them to solve	ear algebra. He/She is acquain- e easy problems. He/She is able m adequately in written form.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		e ssment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
exercis	es eacl			1 exercises (approx.	12 exercise sheets with approx. 4	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
240 h						
Teachir	ng cycl	9				
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	irs in				
	Bachelor's degree (1 major) Mathematics (2015)					
	Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2015)					
		gree (1 major) Mathemati gree (1 major) Computatio	,)15)		
		gree (1 major) Mathemati		/L + //		
		gree (1 major) Economath	•			
		gree (1 major) Economath				
		gram Mathematics (2023)				
Bachel	or's de	gree (1 major) Mathemati	cs (2023)			

Module title			Abbreviation		
Linear Algebra 2				10-M-LNA2-152-m01	
Module coordinator				Module offered by	
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
8	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
Eigenva	lue the	eory, bilinear forms, Eucli	dean and unitary vec	tor spaces, diagona	lisation and Jordan normal form.
Intende	ed learı	ning outcomes			
ted with	n the ce	entral proof methods in li	near algebra and can	apply them to solve	ear algebra. He/She is acquain- e easy problems. He/She is able m adequately in written form.
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) + ĺ	Ü (2)				
		e essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
exercise	es eacl			1 exercises (approx.	12 exercise sheets with approx. 4
Allocati					
Additio	nal inf	ormation			
Worklo	ad				
240 h					
Teachin	ng cycl	9			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	appea	irs in			
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) exchange program Mathematics (2023) Bachelor's degree (1 major) Mathematics (2023)					



Mathematics

Subfield Basics of Applied Mathematics

(9 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 23 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation				Abbreviation	
Numeri	ical Ma	thematics 1			10-M-NUM1-152-m01
Module	e coord	inator		Module offered by	
Dean of	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
9	(not) s	successfully completed			
Duratio	Duration Module level Other prerequisites				
1 seme	ster	undergraduate			
Contents					
		stems of linear equations tion with polynomials, sp			juations and systems of equati- rical integration.
Intende	ed lear	ning outcomes			
		acquainted with the fun oblems and knows about			erical mathematics, applies them
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +	Ü (2)				
module is a) writte	en exa	nle for bonus) mination (approx. 90 to 1	80 minutes, usually	chosen) or	ot every semester, information on whether
c) oral e	examin Ige of a	nation of one candidate e nation in groups (groups c ssessment: German and, bonus	of 2, 10 to 15 minutes	-	
Allocat	ion of _l	places			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	immes)	
Module	e appea	ars in			
		gree (1 major) Mathemati	cs (2015)		
		gree (1 major) Computati gree (1 major) Mathemati		015)	

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg ● generated 18-Apr-2025 ● exam. reg.	page 24 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation				Abbreviation	
Numer	ical Ma	thematics 2			10-M-NUM2-152-m01
Modul	e coord	inator		Module offered by	J
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mather	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
9	(not)	successfully completed			
Duratio	Duration Module level Other prerequisites				
1 seme	ester	undergraduate			
Conter	nts				
		oblems, linear programm ıe problems.	ing, methods for init	ial value problems f	or ordinary differential equations,
Intend	ed lear	ning outcomes			
about	their ad		concerning the poss		nerical mathematics and knows fon in different fields of natural
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if n	ot every semester, information on whether
b) oral c) oral Langua	examir examin	mination (approx. 90 to 1 nation of one candidate e lation in groups (groups o ssessment: German and bonus	ach (15 to 30 minute of 2, 10 to 15 minutes	s) or	
Allocat	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	oad				
270 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
		gree (1 major) Mathemati	ics (2015)		
Bachel	or's de	gree (1 major) Mathemati	ics (2023)		

Module title Abbreviation				Abbreviation	
Stocha	stics 1				10-M-STO1-152-m01
Module	e coord	inator		Module offered by	
Dean of	fStudi	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
9	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Contents				
continu chastic	ious di: indepe	stributions: normal distri	bution, random varia ditional probability, c	ble, distribution fun haracteristics of dis	asure and integration theory, ction, product measures and sto- tributions: expected value and
Intende	ed learı	ning outcomes			
		acquainted with fundam lems and knows about th			ics, applies these methods to
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
b) oral (c) oral (examin examin ge of a	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and/ bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or	
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachir	ıg cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
Bachelo	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)				

Module title					Abbreviation
Stocha	astics 2				10-M-STO2-152-m01
Modul	e coord	inator		Module offered by	<u>.</u>
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
9	(not) s	successfully completed			
Duration Module level Other prerequisites					
1 seme	ester	undergraduate			
Conter	nts				
Eleme	nts of d	ata analysis, statistics of	data in normal and c	other distributions, e	lements of multivariate statistics.
Intend	ed lear	ning outcomes			
		acquainted with fundam and knows about the ty			s, applies these methods to prac-
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
c) oral Langua	examin	ation of one candidate e ation in groups (groups o ssessment: German and, bonus	of 2, 10 to 15 minutes	-	
Alloca	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
270 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module appears in					
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)					
Bache	lor's de	gree (1 major) Mathemati	cs (2023)		



Subfield Pure Mathematics

(9 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 28 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module title					Abbreviation
Introdu	iction t	o Algebra			10-M-ALG-152-m01
Module	e coord	inator		Module offered by	
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
9	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Fundan	nental	algebraic structures (grou	ups, rings, fields), Gal	lois theory.	
Intende	ed learı	ning outcomes			
		nows and masters the est ncepts in this field, and is			ebra. He/She is acquainted with thods independently.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
b) oral c) oral	examin examin ge of a	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and, bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or	
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	in			
Bachel	or's de	gree (1 major) Mathemati gree (1 major) Computatio gree (1 major) Mathemati	onal Mathematics (20	015)	

Module title					Abbreviation	
Introdu	iction t	o Differential Geometry			10-M-DGE-152-m01	
Module	e coord	linator		Module offered by	·	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
9	1	successfully completed				
 Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten			<u> </u>			
particu face th	lar) in eory, s	Euclidean spaces, curvat pecial classes of surfaces	ure of hypersurfaces,		bmanifolds (hypersurfaces in es, main theorem on local sur-	
Intend	ed lear	ning outcomes				
					erential geometry. He/She is ac ental proof methods indepen-	
Course	S (type, 1	number of weekly contact hours, I	anguage — if other than Ger	rman)		
V (4) +	Ü (2)					
module is a) writt b) oral c) oral Langua Assess	en exa en exa examir examir ige of a ment c	ne for bonus) mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o nasessment: German and offered: In the semester ir	80 minutes, usually ach (15 to 30 minutes of 2, 10 to 15 minutes /or English	chosen) or s) or per candidate)	ot every semester, information on whether	
credita						
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
270 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Mathemati	cs (2015)			
		gree (1 major) Mathemati	-			
Bachel		3 (cal Fliysics (2015)			
	achelor's degree (1 major) Computational Mathematics (2015)					
Bachel Bachel	or's de	• • • •	onal Mathematics (20 cal Physics (2016)	015)		

Module	Module title				Abbreviation	
Ordina	ry Diffe	erential Equations			10-M-DGL-152-m01	
Module	e coord	linator		Module offered by		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
9	(not)	successfully completed				
Duratio	•	Module level	Other prerequisites	i		
1 seme	ster	undergraduate				
Conten	ts	1 0	Į.			
		l uniqueness theorem; cc tions; matrix exponentia			tial values; systems of linear dif igher order.	
Intend	ed lear	ning outcomes				
The stu	dent is				heory of ordinary differential	
Course	S (type, I	number of weekly contact hours,	anguage — if other than Ge	rman)		
V (4) +	Ü (2)					
		Sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
c) oral	examir age of a	nation of one candidate e nation in groups (groups o nssessment: German and bonus	of 2, 10 to 15 minutes	-		
Allocat	ion of	places				
Additio	onal inf	· · · · · · · · · · · · · · · · · · ·				
		ormation				
		ormation				
 Worklo	ad	ormation				
 Worklo 270 h	ad					
270 h						
270 h Teachi i 	ng cycl		s for teaching-degree progra	ammes)		
270 h Teachi i 	ng cycl	e	s for teaching-degree progra	ammes)		
270 h Teachi i 	ng cycl ed to in	e LPOI (examination regulation	s for teaching-degree progra	nmmes)		
270 h Teachin Referre Module	ng cycl ed to in e appea	e LPOI (examination regulation		ammes)		
270 h Teachin Referre Module Bachel Bachel	ng cycl ed to in e appea or's de or's de	e LPOI (examination regulation ars in gree (1 major) Mathemat gree (1 major) Mathemat	ics (2015) ical Physics (2015)			
270 h Teachin Referre Bachel Bachel Bachel Bachel	ng cycl ed to in e appea or's de or's de or's de	e LPO I (examination regulation ars in gree (1 major) Mathemat gree (1 major) Mathemat gree (1 major) Computati	ics (2015) ical Physics (2015) onal Mathematics (20			
270 h Teachin Referre Bachel Bachel Bachel Bachel Bachel	ng cycl ed to in e appea or's de or's de or's de or's de	e LPOI (examination regulation ars in gree (1 major) Mathemat gree (1 major) Mathemat	ics (2015) ical Physics (2015) onal Mathematics (20 ical Physics (2016)			

Module title Abbrevia					Abbreviation
Introdu	uction t	o Complex Analysis			10-M-FTH-152-m01
Module	e coord	inator		Module offered by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
9	(not)	successfully completed		-	
Duration Module level Other prerequisites					
1 seme	ster	undergraduate	, , , ,		
Contents					
rems, i	solated		hic functions and La	urent series, residue	grals and Cauchy integral theo- theorem and applications, Wei
Intend	ed lear	ning outcomes			
		acquainted with the fun ethods to practical probl		nd methods in comp	blex analysis. He/she is able to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (4) +	Ü (2)				
module is	s creditab	le for bonus)			ot every semester, information on whether
b) oral c) oral	examir examin age of a	mination (approx. 90 to 1 nation of one candidate e ation in groups (groups o ssessment: German and bonus	ach (15 to 30 minute of 2, 10 to 15 minutes	s) or	
Allocat	ion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
270 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	urs in			
Bachel	or's de	gree (1 major) Mathemati	ics (2015)		
		gree (1 major) Mathemati	,		
		gree (1 major) Computati		015)	
		gree (1 major) Mathemati	•		
Bachel	or's de	gree (1 major) Mathemati	ICS (2023)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.
	data record Bachelor (180 ECTS) Mathematik - 2015

Module title Abbreviation					Abbreviation
Geome	tric An	alysis			10-M-GAN-152-m01
Module	e coord	inator		Module offered by	<u>I</u>
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
9	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		s in analysis on manifolds tor analysis and topology		ulus of differential fo	orms, Stoke's theorem and appli-
Intend	ed lear	ning outcomes			
		acquainted with the fun nethods to practical probl		nd methods in geom	netric analysis. He/she is able to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (4) +	Ü (2)				
module is	s creditab	le for bonus)			ot every semester, information on whether
b) oral c) oral	examir examin Ige of a	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or	
Allocat		-			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
§ 22	Nr. 3 f)				
Module	e appea	ars in			
Bachel Bachel First sta	or's de or's de ate exa	gree (1 major) Mathemati gree (1 major) Mathemati gree (1 major) Computati mination for the teaching	cal Physics (2015) onal Mathematics (20 g degree Gymnasium	-	
		gree (1 major) Mathemati gree (1 major) Mathemati	•		
Dachel	or s ue	Siee (I major) mathemati	(2023)		

Module	e title			Abbreviation			
Introduction to Projective Geometry 10-M-PGE-152-m01							
Module	e coord	inator		Module offered by			
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathematics			
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
9	(not)	successfully completed					
Duration Module level		Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
	Projective and affine planes, projective and affine spaces, theorem of Desargues, fundamental theorems for pro- jective spaces, dualities and polarities of projective spaces.						
Intended learning outcomes							
The student is acquainted with the fundamental concepts and methods of projective geometry. He/she is able to apply these methods to practical problems.							
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)			
V (4) +	Ü (2)						
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)							
 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 							
Allocat	ion of _l	olaces					
Additio	nal inf	ormation					
Worklo	ad						
270 h							
Teachi	ng cycl	e					
Referred to in LPO I (examination regulations for teaching-degree programmes)							
-							
Module appears in							
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)							



Subfield Basics Specialization of Mathematics

(9 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 35 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation		
Numer	ical Ma	thematics 1			10-M-NUM1-152-m01		
Modul	e coord	inator		Module offered by			
Dean of Studies Mathematik (Mathema			atics)	Institute of Mathematics			
ECTS	Meth	ethod of grading Only after succ. compl. of module(s)					
9	(not)	successfully completed					
Duration Module level		Module level	Other prerequisites				
1 semester		undergraduate					
Conter	nts						
Solution of systems of linear equations and curve fitting problems, nonlinear equations and systems of equati- ons, interpolation with polynomials, splines and trigonometric functions, numerical integration.							
Intend	ed lear	ning outcomes					
The student is acquainted with the fundamental concepts and methods in numerical mathematics, applies them to practical problems and knows about their typical fields of application.							
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)			
V (4) +	Ü (2)						
module i a) writt b) oral c) oral Langua	s creditat ten exa examir examir	le for bonus) mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and,	80 minutes, usually ach (15 to 30 minutes of 2, 10 to 15 minutes	chosen) or s) or	ot every semester, information on whether		
Allocat	tion of _l	olaces					
Additio	onal inf	ormation					
Worklo	bad						
270 h							
Teachi	ng cycl	e					
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module appears in							
Bachelor's degree (1 major) Mathematics (2015)							
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	lor's de	gree (1 major) Mathemati	cs (2023)				

Module title Abbreviation						
Numerical Mathematics 2 10-M-NUM2-152-m01						
Modul	Module coordinator Modul				1	
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
9	(not)	successfully completed				
Durati	on	Module level	Other prerequisites	i		
1 seme	ester	undergraduate				
Conter	nts					
		oblems, linear programm ıe problems.	ing, methods for init	ial value problems fo	or ordinary differential equations,	
Intend	ed lear	ning outcomes				
about	their ad		concerning the poss		erical mathematics and knows on in different fields of natural	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
b) oral c) oral Langua	examir examin	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and bonus	ach (15 to 30 minute of 2, 10 to 15 minutes	s) or		
Alloca	tion of _l	places				
Additio	onal inf	ormation				
Worklo	oad					
270 h						
Teachi	ing cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Modul	e appea	ars in				
		gree (1 major) Mathemati gree (1 major) Mathemati				
			× 20			

Module title Abbreviation							
Stocha	stics 1				10-M-STO1-152-m01		
Module	e coord	inator		Module offered by			
Dean of	fStudi	es Mathematik (Mathema	atics)	Institute of Mathem	atics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
9	(not) s	successfully completed					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
continu chastic	ious di: indepe	stributions: normal distri	bution, random varia ditional probability, c	ble, distribution fun haracteristics of dis	asure and integration theory, ction, product measures and sto- tributions: expected value and		
Intende	ed learı	ning outcomes					
		acquainted with fundam lems and knows about th			ics, applies these methods to		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
b) oral (c) oral (examin examin ge of a	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and/ bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or			
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
270 h							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module	Module appears in						
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)							

Module title Abbreviation						
Stochastics 2 10-M-ST02-152-m01						
Modul	e coord	inator		Module offered by	<u>.</u>	
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
9	(not) s	successfully completed				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
Elemei	nts of d	ata analysis, statistics of	data in normal and c	other distributions, e	lements of multivariate statistics.	
Intend	ed lear	ning outcomes				
		acquainted with fundam and knows about the ty			s, applies these methods to prac-	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
c) oral Langua	examin	ation of one candidate e ation in groups (groups o ssessment: German and, bonus	of 2, 10 to 15 minutes	-		
Alloca	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	ad					
270 h						
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)						
Bache	lor's de	gree (1 major) Mathemati	cs (2023)			

Module title Abbreviation						
Operations Research					10-M-ORS-152-m01	
Module	e coord	inator		Module offered by		
Dean of	f Studie	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
9	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Linear	orogran	nming, duality theory, tra	nsport problems, inte	egral linear program	ming, graph theoretic problems.	
Intende	ed learr	ning outcomes				
for solv	ing ma		pecially in economics		n, as required as a central tool apply these methods to practical	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) 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 Allocation of places Workload						
270 h						
Teachir	ig tyti	e				
Poforro	d to in	LPO I (examination regulations	fortoching democratic	mmac)		
§ 22		LEVI (examination regulations	s for teaching-degree progra	inities)		
		rs in				
Bacheld Bacheld First sta First sta	Module appears in Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) First state examination for the teaching degree Gymnasium Mathematics (2019) First state examination for the teaching degree Gymnasium Mathematics (2023)					

Module title Abbreviation						
Introdu	iction t	o Algebra		10-M-ALG-152-m01		
Module	e coord	inator		Module offered by		
Dean o	f Studie	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
9	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Fundan	nental	algebraic structures (grou	ups, rings, fields), Gal	lois theory.		
Intende	ed learı	ning outcomes				
		nows and masters the est ncepts in this field, and is			ebra. He/She is acquainted with thods independently.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
b) oral c) oral	examin examin ge of a	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and, bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
270 h						
Teachir	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module	e title				Abbreviation
ntroduction to Differential Geometry					10-M-DGE-152-m01
Module	e coord	inator		Module offered by	l
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)	
9		successfully completed			
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten			<u> </u>		
particu	lar) in I		ure of hypersurfaces,		bmanifolds (hypersurfaces in es, main theorem on local sur-
Intende	ed lear	ning outcomes			
	ed with				erential geometry. He/She is ac ental proof methods indepen-
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Gei	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
b) oral c) oral Langua	examir examir age of a ment o	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o issessment: German and offered: In the semester in bonus	ach (15 to 30 minute: of 2, 10 to 15 minutes /or English	s) or per candidate)	ubsequent semester
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
270 h	uu				
Teachi		•			
	ig cycl	C			
Referre		LPO I (examination regulation	s for teaching-degree progra	immes)	
		•			
Module					
		gree (1 major) Mathemati	-		
		gree (1 major) Mathemati)	
		gree (1 major) Computati		515)	
		gree (1 major) Mathemati			
васпе	or s de	gree (1 major) Mathemati	CS (2023)		

Module title				Abbreviation	
Ordinary Differential Equations 10-M-DGL-152-mo1					
Module coor	dinator		Module offered by	l	
Dean of Stud	lies Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS Meth	nod of grading	Only after succ. con	npl. of module(s)		
9 (not)	successfully completed		· · · · · · · · · · · · · · · · · · ·		
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents		Į			
	d uniqueness theorem; co ations; matrix exponentia			tial values; systems of linear dif- igher order.	
Intended lea	rning outcomes	·			
	is acquainted with the fun e/she is able to apply the			heory of ordinary differential	
Courses (type,	, number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) + Ü (2)					
Method of as module is credita		ge — if other than German,	examination offered — if no	ot every semester, information on whether	
c) oral exami	ination of one candidate e nation in groups (groups o assessment: German and r bonus	of 2, 10 to 15 minutes			
Allocation of	places				
Additional in	formation				
-					
Workload					
270 h					
Teaching cyc	le				
-					
Referred to i	n LPO I (examination regulation	s for teaching-degree progra	mmes)		
Modulo ana					
Module appe					
	egree (1 major) Mathemati egree (1 major) Mathemati	-			
	egree (1 major) Mathemati	· ·	D15)		
	egree (1 major) Mathemati		/(± <i>\</i>		
	egree (1 major) Mathemati	•			
	egree (1 majoi) mathemati	(2023)			

Introdu					Abbreviation	
Introduction to Complex Analysis 10-M-FTH-152-mo1						
Module	e coord	inator	Module offered by	<u>I</u>		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
9		successfully completed		• • • •		
Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten			I			
rems, is	solated		hic functions and La	urent series, residue	grals and Cauchy integral theo- theorem and applications, Wei	
Intende	ed lear	ning outcomes				
		acquainted with the fun ethods to practical probl		nd methods in com	olex analysis. He/she is able to	
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
module is a) writt b) oral c) oral (en exal en exal examir examin ge of a	le for bonus) mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and	80 minutes, usually ach (15 to 30 minutes of 2, 10 to 15 minutes	chosen) or s) or	ot every semester, information on whether	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
270 h						
Teachiı	ng cycl	e				
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Module	appea	ars in				
		gree (1 major) Mathemati gree (1 major) Mathemati				

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	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Geome	tric An	alysis			10-M-GAN-152-m01
Module coordinator Module offered by					
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
9	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		s in analysis on manifolds tor analysis and topology		ulus of differential fo	orms, Stoke's theorem and appli-
Intend	ed lear	ning outcomes			
		acquainted with the fun nethods to practical probl		nd methods in geom	netric analysis. He/she is able to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (4) +	Ü (2)				
module is	s creditab	le for bonus)			ot every semester, information on whether
b) oral c) oral	examir examin Ige of a	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or	
Allocat		-			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
§ 22	Nr. 3 f)				
Module	e appea	ars in			
Bachel Bachel First sta	or's de or's de ate exa	gree (1 major) Mathemati gree (1 major) Mathemati gree (1 major) Computati mination for the teaching	cal Physics (2015) onal Mathematics (20 g degree Gymnasium	-	
		gree (1 major) Mathemati gree (1 major) Mathemati	•		
Dachel	or s ue	Siee (I major) mathemati	(2023)		

Module	e title				Abbreviation	
Introduction to Discrete Mathematics 10-M-DIM-152-mo1						
Module	e coord	inator	Module offered by	1		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
9	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	lts					
	•	om combinatorics, introd Ig codes.	uction to graph theo	ry (including applica	tions), cryptographic methods,	
Intend	ed lear	ning outcomes				
levant	proof te		ly methods from num		e mathematics, masters the re- bra to discrete mathematics and	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
b) oral c) oral	examir examin age of a	mination (approx. 90 to 1 nation of one candidate e ation in groups (groups o ssessment: German and, bonus	ach (15 to 30 minute of 2, 10 to 15 minutes	s) or		
Allocat	ion of	olaces				
Additio	onal inf	ormation				
Worklo	ad					
270 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in				
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module	e title				Abbreviation	
Introdu	Introduction to Functional Analysis 10-M-FAN-152-mo1					
Module	e coord	inator		Module offered by	1	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
9	(not) s	successfully completed		-		
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Banach	n space	s and Hilbert spaces, bo	unded operators, prir	ciples of functional	analysis.	
Intende	ed lear	ning outcomes				
methoo	ls, is a		n linear algebra and a	analysis to functiona	is as well as the pertinent proof al analysis, and realises the	
		number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Langua credita	ge of a ble for					
Allocat	ion of _l	olaces				
Additio	nal inf	ormation				
 Worklo						
Worklo 270 h	au					
Teachir		A				
	-3 -9 -1	-				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
§ 22						
Module	e appea	urs in				
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2016) First state examination for the teaching degree Gymnasium Mathematics (2019) First state examination for the teaching degree Gymnasium Mathematics (2023)						
		gree (1 major) Mathemati				

Module title Abbreviation						
Introdu	uction t	o Partial Differential Equ	lations		10-M-PAR-152-m01	
Module coordinator				Module offered by	*	
Dean o	f Studi	es Mathematik (Mathem	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
9	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		•			
	orems	, basic equations of mat			rst order, existence and uniquen ms, maximum principle and Di-	
Intend	ed lear	ning outcomes				
		acquainted with the fur is able to apply these m			neory of partial differential equa-	
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)		
V (4) +	Ü (2)					
		S essment (type, scope, langua	age — if other than German,	examination offered — if no	ot every semester, information on whether	
Langua	age of a ment o	ation in groups (groups ssessment: German and iffered: In the semester i bonus	l/or English		ubsequent semester	
Allocat	ion of _l	places				
Additio	onal inf	ormation	_			
Worklo	ad					
270 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	immes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Mathemat	ics (2015)			
Bachel		• • • •	· · · ·			
	Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)					
Bachel				015)		
Bachel Bachel	or's de	gree (1 major) Computat gree (1 major) Mathemat gree (1 major) Mathemat	ical Physics (2016)	015)		

Module title Abbreviation					
Introdu	uction t	o Projective Geometry			10-M-PGE-152-m01
Modul	e coord	inator		Module offered by	1
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)	
9	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites	i	
1 seme	ester	undergraduate			
Conter	nts				
		l affine planes, projective s, dualities and polarities			s, fundamental theorems for pro-
Intend	ed lear	ning outcomes			
		acquainted with the fun ethods to practical probl		nd methods of proje	ective geometry. He/she is able to
Course	es (type, i	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
b) oral c) oral Langua Assess	examir examir age of a	mination (approx. 90 to 1 nation of one candidate e nation in groups (groups o ssessment: German and, ffered: In the semester ir bonus	ach (15 to 30 minute of 2, 10 to 15 minutes /or English	s) or per candidate)	ubsequent semester
Allocat	tion of	places			
Additio	onal inf	ormation			
Worklo	bad				
270 h					
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	e appea	ars in			
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation					Abbreviation
Introdu	iction t	o Number Theory			10-M-ZTH-152-m01
Module	e coord	inator		Module offered by	
Dean of	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
9	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
tests ar	nd met		ructure of the residue	class rings, theory o	ation, modular arithmetics, prime of quadratic remainder, quadratic
Intende	ed lear	ning outcomes			
		acquainted with the fun methods and proof tech			per theory. He/she is able to em-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
b) oral (c) oral (examir examin ge of a	mination (approx. 90 to 1 lation of one candidate e ation in groups (groups c ssessment: German and, bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes	s) or	
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
270 h					
Teachir	ng cycl	e			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	appea	urs in			
Bachelo	Module appears in Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)				

Module title					Abbreviation	
Introdu	Introduction to Mathematical Logic				10-M-LOG-232-m01	
Module	e coord	inator		Module offered by		
			_	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
9	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster					
Conten	ts					
Intende	ed lear	ning outcomes				
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) + Module		t in: German and/or Engl	ish			
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
a) writt	en exai	mination (approx. 90 to 1 ation of one candidate e				
		ation in groups (groups o		per candidate)		
	ment o	ssessment: German and, ffered: In the semester in bonus		offered and in the su	ubsequent semester	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
270 h	270 h					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Bachelor's degree (1 major) Mathematics (2015)					
Bachel	or's de	gree (1 major) Mathemati	cs (2023)			



Subfield Overview Applied Mathematics

(12 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 52 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module	title		Abbreviation			
Overvie	ew Stoc	hastics 1 and Stochastic	5 2		10-M-STO-Ü-152-m01	
Module	coord	inator		Module offered by		
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
continu chastic varianc ta in no	ious di indepe e, limit ormal a	stributions: normal distri endence, elementary con	bution, random varia ditional probability, c umbers, central limit	ble, distribution fun characteristics of dis theorem; elements	asure and integration theory, ction, product measures and sto- stributions: expected value and of data analysis, statistics of da-	
le to rel	ate the				ods in stochastics. He/She is ab- nking across the borders of diffe-	
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Assess pic may	ment w / only b		topics in applied mat t of one examination		upon with the examiner. Each to- samtüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
		gree (1 major) Mathemati				
		gree (1 major) Computatio		015)		
Bachelo	Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation					Abbreviation
Overvi	ew Nun	nerical Mathematics 1 an	d Numerical Mathem	atics 2	10-M-NUM-Ü-152-m01
Module coordinator				Module offered	l by
Dean o	of Studi	es Mathematik (Mathem	atics)	Institute of Mat	hematics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts				
		stems of linear equation tion with polynomials, s			ar equations and systems of equati- umerical integration.
Intend	ed lear	ning outcomes			
He/Sh	e is abl		s with one another, a		ethods in numerical mathematics. advantages of thinking across the
Course	es (type, r	number of weekly contact hours,	language — if other than Gei	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered –	- if not every semester, information on whether
Assess pic ma	sment w y only b		topics in applied ma t of one examination		reed upon with the examiner. Each to 5 Gesamtüberblick (Overview).
Allocat	tion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
360 h			_		
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Modul	e appea	ars in			
		gree (1 major) Mathemat			
Bachel	lor's de	gree (1 major) Mathemat	ics (2023)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015	page 54 / 406
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Module title					Abbreviation	
Overvie	ew Num	erical Mathematics 1 and	d Stochastics 1		10-M-NUST-Ü-152-m01	
Module	coord	inator		Module offered by		
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
ons, int Laplace butions dence,	erpola e mode s: norm elemer	tion with polynomials, sp ls, selected discrete dist al distribution, random v	blines and trigonomed ributions, elementary ariable, distribution f lity, characteristics o	ric functions, numer measure and integr function, product me	uations and systems of equati- rical integration; combinatorics, ration theory, continuous distri- easures and stochastic indepen- cted value and variance, limit	
Intende	ed learr	ning outcomes				
He/She	e is able		s with one another, a		al mathematics and stochastics. ntages of thinking across the	
		umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +						
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
Assess pic may	ment w / only b		topics in applied mat t of one examination		upon with the examiner. Each to- samtüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
360 h						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module						
		gree (1 major) Mathemati				
Bachelor's degree (1 major) Mathematics (2023)						



Subfield Overview Pure Mathematics

(12 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 56 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title			Abbreviation		
Overvi	ew Alge	ebra and Ordinary Differe	ential Equations		10-M-ALGD-Ü-152-m01	
Modul	e coord	inator		Module offered by		
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mather	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
tinuou	s deper		itial values, systems		ce and uniqueness theorem, con- l equations, matrix exponential	
Intend	ed lear	ning outcomes				
rential	equation		late these concepts w	ith one another, an	and in the theory of ordinary diffe- d realises the advantages of thin-	
Course	es (type, r	number of weekly contact hours,	language — if other than Gei	rman)		
V (4) +	Ü (2)					
		Sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if n	ot every semester, information on whether	
Assess may or	sment w nly be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).	
Allocat	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	oad					
360 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Modul	e appea	ars in				
Bachel	Module appears in Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module	e title			Abbreviation	
Overvi	ew Diff	erential Geometry and O	rdinary Differential E	quations	10-M-DGGD-Ü-152-m01
Module	e coord	inator		Module offer	red by
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of N	lathematics
ECTS	Methe	od of grading	Only after succ. con	npl. of module	e(s)
12	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
face th ons on ons of Intende	eory, s initial higher ed lear	pecial classes of surfaces values, systems of linear order. ning outcomes	s; existence and uniq differential equation	ueness theore s, matrix expo	ometries, main theorem on local sur- em, continuous dependence of soluti- onential series, linear differential equati-
dinary	differei		s able to relate these	concepts with	fferential geometry and the theory of or- n one another, and realises the advan- 5.
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offere	ed — if not every semester, information on whether
Assess may or	ment w		topics in pure mathe one examination in t		eed upon with the examiner. Each topic Gesamtüberblick (Overview).
Allocat	<u> </u>		<u>.</u>		
Additio	onal inf	ormation			
Worklo	ad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Bachel	or's de	gree (1 major) Mathemat gree (1 major) Computati gree (1 major) Mathemat	onal Mathematics (2	015)	

Module title					Abbreviation		
Overvi	ew Alge	ebra and Complex Analys	is		10-M-ALFT-Ü-152-m01		
Module coordinator				Module offered by			
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conten	nts						
mann o functio	differen ons and	tial equations, path integ	grals and Cauchy inte	gral theorems, isola	 differentiability and Cauchy-Rie- ated singularities, meromorphic oduct theorem and theorem of 		
Intend	ed lear	ning outcomes					
able to	relate				and complex analysis. He/She is thinking across the borders of dif-		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate eacl vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	tion of p	olaces					
Additio	onal inf	ormation					
Worklo	oad						
360 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)			
Modul	e appea	ars in					
Bachel	Module appears in Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title					Abbreviation
Overvi	ew Con	plex Analysis and Differe		10-M-FTDG-Ü-152-m01	
Module coordinator Module offer					 ЭУ
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Math	ematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Durati	on	Module level	Other prerequisites	;	
1 seme	ester	undergraduate			
Conter	nts	<u>.</u>			
Frenet of hype Intend The stu	equation ersurface ed lear udent is	ons, local classification, s ces, geodesics, isometrie ning outcomes s acquainted with fundam	submanifolds (hypers s, main theorem on l nental concepts and	surfaces in particu ocal surface theor methods in compl	es in Euclidean spaces, curvature, Ilar) in Euclidean spaces, curvature y, special classes of surfaces. ex analysis and differential geome- e advantages of thinking across the
border	s of dif	ferent branches in mathe	matics.		
		number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — i	f not every semester, information on whether
Assess may or	sment v nly be s		topics in pure mathe one examination in t		upon with the examiner. Each topic amtüberblick (Overview).
	tion of				
Additio	onal inf	ormation			
Worklo	oad				
360 h					
Teachi	ing cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
Bachel	lor's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Mathemati	onal Mathematics (2	015)	

Module	e title				Abbreviation
Overvie	ew Con	plex Analysis and Ordina	tions	10-M-FTGD-Ü-152-m01	
Module coordinator Module off					y
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathe	ematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Duratio	on	Module level	Other prerequisites	i	
1 seme	ster	undergraduate			
Conten	ts				
erstraß continu al serie	produ Jous de s, linea	ct theorem and theorem of	of Mittag-Leffler, cont n initial values, syste	formal maps; exist	ue theorem and applications, Wei- ence and uniqueness theorem, ential equations, matrix exponenti-
The stu nary di	ident is fferenti	acquainted with fundam	able to relate these c	oncepts with one a	ex analysis and the theory of ordi- nother, and realises the advanta-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if	not every semester, information on whether
Assess may on	ment w Ily be s	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		upon with the examiner. Each topic Imtüberblick (Overview).
Allocat			<u> </u>		
Additio	onal inf	ormation			
Worklo	ad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
Bachel	or's de	gree (1 major) Mathemati gree (1 major) Computatio gree (1 major) Mathemati	onal Mathematics (2	015)	

Module title Abbreviation							
Overvie	ew Geo	metric Analysis and Diffe	erential Geometry		10-M-GADG-Ü-152-m01		
Module	coord	inator		Module offered by			
		es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS		od of grading	Only after succ. con	pl. of module(s)			
12	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
cations tion, su	in vec Ibmani	tor analysis and topology	r; curves in Euclidean articular) in Euclidea	spaces, curvature, n spaces, curvature	orms, Stoke's theorem and appli- Frenet equations, local classifica- of hypersurfaces, geodesics, iso-		
Intende	ed lear	ning outcomes					
metry. I	He/She		oncepts with one and		ic analysis and differential geo- ne advantages of thinking across		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether		
Assessi may on	ment w ly be s	ion of one candidate eacl vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic htüberblick (Overview).		
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
360 h							
Teachir	ıg cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module							
Bachelo	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overview Geometric Analysis and Ordinary Differential Equ				ations	10-M-GAGD-Ü-152-m01	
Module coordinator				Module offered by	<u> </u>	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics	
ECTS	r –	od of grading	Only after succ. com	pl. of module(s)		
12		rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
lication	is in ve initial v	ctor analysis and topolog values, systems of linear	gy; existence and uni	queness theorem; c	orms, Stoke's theorem and app- ontinuous dependence of soluti- al series, linear differential equati-	
Intende	ed lear	ning outcomes				
nary di	fferenti	•	able to relate these co	oncepts with one an	ic analysis and the theory of ordi- other, and realises the advanta-	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
Assess may on	ment w Iy be s	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module						
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation						
Overvi	ew Geo	metric Analysis and Com	plex Analysis		10-M-GAFT-Ü-152-m01	
Module coordinator				Module offered by	1	
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conten	nts					
licatior path in	ns in ve Itegrals	ctor analysis and topolog and Cauchy integral theo	gy; complex different prems, isolated singu	iability and Cauchy- Ilarities, meromorph	orms, Stoke's theorem and app- Riemann differential equations, nic functions and Laurent series, Mittag-Leffler, conformal maps.	
Intend	ed lear	ning outcomes				
sis. He	/She is		cepts with one anoth		ic analysis and complex analy- advantages of thinking across the	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).	
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	bad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in				
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Modul	e title				Abbreviation	
Overvi	ew Alge	ebra and Projective Geom	ietry		10-M-ALPG-Ü-152-m01	
Modul	e coord	inator		Module offered by		
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
and af		aces, theorem of Desargu			ve and affine planes, projective spaces, dualities and polarities	
Intend	ed lear	ning outcomes				
is able	to rela				and projective geometry. He/She of thinking across the borders of	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether	
Assess may or	sment v nly be s	ion of one candidate eac vill have reference to two elected as the subject of assessment: German and,	topics in pure mathe one examination in t		on with the examiner. Each topic Itüberblick (Overview).	
Allocat	tion of	places				
Additio	onal inf	ormation				
Worklo	oad					
360 h						
Teachi	ing cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	e appea	ars in				
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					



Subfield Overview Advanced Mathematics

(12 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 66 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
Overvi	ew Alge	ebra and Ordinary Differe	ntial Equations		10-M-ALGD-Ü-152-m01	
Modul	e coord	inator		Module offered by		
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conten	nts					
tinuou	s deper		itial values, systems		e and uniqueness theorem, con- equations, matrix exponential	
Intend	ed lear	ning outcomes				
rential	equation		ate these concepts w	vith one another, and	and in the theory of ordinary diffe- d realises the advantages of thin-	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic htüberblick (Overview).	
Allocat	tion of	olaces				
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in				
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Modul	e title		Abbreviation		
Overvi	ew Diff	erential Geometry and O	10-M-DGGD-Ü-152-m01		
Module coordinator Module offe					red by
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of N	Nathematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module	e(s)
12	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts	к.			
face th ons on ons of Intend The stu	eory, s initial higher ed lear udent is	pecial classes of surfaces values, systems of linear order. ning outcomes s acquainted with fundam	s; existence and uniq differential equation nental concepts and i	ueness theore s, matrix expo methods in dif	ometries, main theorem on local sur- em, continuous dependence of soluti- onential series, linear differential equati- fferential geometry and the theory of or-
		ntial equations. He/She i ing across the borders of			h one another, and realises the advan- 5.
Course	es (type, i	number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offere	ed — if not every semester, information on whether
Assess may or	sment v nly be s		topics in pure mathe one examination in t		eed upon with the examiner. Each topic Gesamtüberblick (Overview).
	tion of		<u> </u>		
Additio	onal inf	ormation			
Worklo	bad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
Bachel	lor's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Mathemati	onal Mathematics (2	015)	

Module title					Abbreviation		
Overvi	ew Alge	ebra and Complex Analys	is		10-M-ALFT-Ü-152-m01		
Module coordinator				Module offered by			
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conten	nts						
mann o functio	differen ons and	tial equations, path integ	grals and Cauchy inte	gral theorems, isola	 differentiability and Cauchy-Rie- ated singularities, meromorphic oduct theorem and theorem of 		
Intend	ed lear	ning outcomes					
able to	relate				and complex analysis. He/She is thinking across the borders of dif-		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate eacl vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	tion of p	olaces					
Additio	onal inf	ormation					
Worklo	oad						
360 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)			
Modul	e appea	ars in					
Bachel	Module appears in Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title					Abbreviation
Overvi	ew Con	plex Analysis and Differe		10-M-FTDG-Ü-152-m01	
Module coordinator Module offer					 ЭУ
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Math	ematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Durati	on	Module level	Other prerequisites	;	
1 seme	ester	undergraduate			
Conter	nts	<u>.</u>			
Frenet of hype Intend The stu	equation ersurface ed lear udent is	ons, local classification, s ces, geodesics, isometrie ning outcomes s acquainted with fundam	submanifolds (hypers s, main theorem on l nental concepts and	surfaces in particu ocal surface theor methods in compl	es in Euclidean spaces, curvature, Ilar) in Euclidean spaces, curvature y, special classes of surfaces. ex analysis and differential geome- e advantages of thinking across the
border	s of dif	ferent branches in mathe	matics.		
		number of weekly contact hours, l	anguage — if other than Ge	rman)	
V (4) +					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — i	f not every semester, information on whether
Assess may or	sment v nly be s		topics in pure mathe one examination in t		upon with the examiner. Each topic amtüberblick (Overview).
	tion of				
Additio	onal inf	ormation			
Worklo	oad				
360 h					
Teachi	ing cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
Bachel	lor's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Mathemati	onal Mathematics (2	015)	

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Module	e title			Abbreviation				
Overview Complex Analysis and Ordinary Differential Equations 10-M-FTGD-Ü-152-m01								
Module	e coord	inator		Module offered by				
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathematics				
ECTS	Meth	od of grading	Only after succ. con	ıpl. of module(s)				
12	nume	rical grade						
Duration		Module level	Other prerequisites	ther prerequisites				
1 semester		undergraduate						
Conten	ts							
rems, isolated singularities, meromorphic functions and Laurent series, residue theorem and applications, Wei- erstraß product theorem and theorem of Mittag-Leffler, conformal maps; existence and uniqueness theorem, continuous dependence of solutions on initial values, systems of linear differential equations, matrix exponenti- al series, linear differential equations of higher order.								
The student is acquainted with fundamental concepts and methods in complex analysis and the theory of ordi- nary differential equations. He/She is able to relate these concepts with one another, and realises the advanta- ges of thinking across the borders of different branches in mathematics.								
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Gei	rman)				
V (4) +	Ü (2)							
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)								
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English								
Allocation of places								
Additio	onal inf	ormation						
Worklo	ad							
360 h								
Teaching cycle								
Referred to in LPO I (examination regulations for teaching-degree programmes)								
Module	e appea	ars in						
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)								

Module	e title			·	Abbreviation			
Overvie	ew Geo	metric Analysis and Diffe	erential Geometry		10-M-GADG-Ü-152-m01			
Module	e coord	inator		Module offered by	,			
		es Mathematik (Mathema	atics)	Institute of Mathematics				
ECTS	Metho	od of grading	Only after succ. con	. compl. of module(s)				
12	numerical grade							
Duration Module level		Other prerequisites						
1 semester		undergraduate						
Conten	ts							
Fundamentals in analysis on manifolds, submanifolds, calculus of differential forms, Stoke's theorem and appli- cations in vector analysis and topology; curves in Euclidean spaces, curvature, Frenet equations, local classifica- tion, submanifolds (hypersurfaces in particular) in Euclidean spaces, curvature of hypersurfaces, geodesics, iso- metries, main theorem on local surface theory, special classes of surfaces.								
Intended learning outcomes								
The student is acquainted with fundamental concepts and methods in geometric analysis and differential geo- metry. He/She is able to relate these concepts with one another, and realises the advantages of thinking across the borders of different branches in mathematics.								
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Gei	man)				
V (4) +	Ü (2)							
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)								
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English								
Allocation of places								
Additional information								
Workload								
360 h								
Teaching cycle								
Referred to in LPO I (examination regulations for teaching-degree programmes)								
Module appears in								
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)								

Module	Module title Abbreviation						
Overvi	ew Geo	metric Analysis and Ordi	nary Differential Equ	ations	10-M-GAGD-Ü-152-m01		
Module	e coord	inator		Module offered by			
Dean o	of Studio	es Mathematik (Mathema	atics)	Institute of Mather	natics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Its						
ons on		values, systems of linear			ontinuous dependence of soluti- al series, linear differential equati-		
Intend	ed lear	ning outcomes					
nary di	fferenti	•	able to relate these co	oncepts with one ar	ic analysis and the theory of ordi- nother, and realises the advanta-		
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if n	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	ion of p	olaces					
Additio	onal inf	ormation					
Worklo	ad						
360 h	1						
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
	e appea						
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation							
Overview Geometric Analysis and Complex Analysis					10-M-GAFT-Ü-152-m01		
Module	e coord	inator		Module offered by	<u> </u>		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Its						
licatior path in	ns in ve Itegrals	ctor analysis and topolog and Cauchy integral theo	gy; complex different prems, isolated singu	ability and Cauchy- larities, meromorph	orms, Stoke's theorem and app- Riemann differential equations, nic functions and Laurent series, Mittag-Leffler, conformal maps.		
Intend	ed lear	ning outcomes					
sis. He	/She is		epts with one anoth		ic analysis and complex analy- advantages of thinking across the		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	ion of	olaces					
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	e appea	ars in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation							
Overvi	Overview Algebra and Projective Geometry 10-M-ALPG-Ü-152-m01						
Modul	e coord	inator		Module offered by			
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conter	nts						
and af		aces, theorem of Desargu			ve and affine planes, projective spaces, dualities and polarities		
Intend	ed lear	ning outcomes					
is able	to rela				and projective geometry. He/She of thinking across the borders of		
Course	es (type, i	number of weekly contact hours, l	anguage — if other than Ger	rman)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether		
Assess may or	sment v nly be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		on with the examiner. Each topic tüberblick (Overview).		
Allocat	tion of	places					
Additio	onal inf	ormation					
Worklo	oad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	e appea	ars in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation							
Overview Algebra and Discrete Mathematics 10-M-ALDI-Ü-152-mo1							
Module coordinator Module				Module offered by			
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conter	nts						
		algebraic structures (grou heory (including applicat			ues from combinatorics, introduc- ecting codes.		
Intend	ed lear	ning outcomes					
She is	able to		th one another, and r		and discrete mathematics. He/ ges of thinking across the bor-		
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)			
V (4) +	Ü (2)						
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Assess may or	sment w nly be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and	topics in pure mathe one examination in t		oon with the examiner. Each topic htüberblick (Overview).		
Allocat	tion of _l	olaces					
Additio	onal inf	ormation					
Worklo	oad						
360 h							
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)			
Modul	e appea	ars in					
		gree (1 major) Mathemati	-				
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	lor's de	gree (1 major) Mathemati	cs (2023)				

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 76 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation							
Overview Discrete Mathematics and Projective Geometry 10-M-DIPG-Ü-152-m01							
Module coordinator Module							
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
error-co mental	orrectir theore	ng codes; projective and a rms for projective spaces,	affine planes, project	ive and affine space	tions), cryptographic methods, s, theorem of Desargues, funda- aces.		
		ning outcomes					
matics.	. He/Sł		concepts with one an		e geometry and discrete mathe- he advantages of thinking across		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Assess may on	ment w Ily be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic htüberblick (Overview).		
Allocat	ion of j	places					
Additio	onal inf	ormation					
Worklo	ad						
360 h	_						
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	e appea	ars in					
	Bachelor's degree (1 major) Mathematics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation							
Overview	Functional Analysis and Diffe	erential Geometry		10-M-FADG-Ü-152-m01			
Module c	oordinator		Module offered by	1			
Dean of S	Studies Mathematik (Mathema	atics)	Institute of Mathen	natics			
ECTS N	Nethod of grading	Only after succ. con	npl. of module(s)				
12 N	umerical grade						
Duration	Module level	Other prerequisites					
1 semeste	er undergraduate						
Contents							
spaces, c	urvature, Frenet equations, lo urvature of hypersurfaces, ge	ocal classification, su	bmanifolds (hypersi	analysis; curves in Euclidean urfaces in particular) in Euclidean cal surface theory, special classes			
Intended	learning outcomes						
lysis. He/		ncepts with one anot		ial geometry and functional ana- e advantages of thinking across			
Courses (type, number of weekly contact hours, l	anguage — if other than Ge	rman)				
V (4) + Ü	(2)						
	of assessment (type, scope, langua reditable for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether			
Assessme may only	nination of one candidate each ent will have reference to two be selected as the subject of e of assessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).			
	n of places	<u>_</u>					
Additiona	al information						
Workload	1						
360 h							
Teaching	cycle						
Referred	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module a	ppears in						
	's degree (1 major) Mathemati	-					
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor	Bachelor's degree (1 major) Mathematics (2023)						

Modul	e title			Abbreviation		
Overview Functional Analysis and Ordinary Differential Equ				ations	10-M-FAGD-Ü-152-m01	
Module coordinator				Module offered b	by	
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Math		
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)		
12	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
ess the	eorem,		of solutions on initial	values, systems	nal analysis; existence and uniquen- of linear differential equations, ma-	
Intend	ed lear	ning outcomes				
nary di	ifferenti		able to relate these c	oncepts with one	onal analysis and the theory of ordi- another, and realises the advanta-	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — i	f not every semester, information on whether	
Assess may or	sment w nly be s		topics in pure mathe one examination in t		upon with the examiner. Each topic amtüberblick (Overview).	
Allocat	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	bad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	e appea	ars in				
Bache	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation							
Overvi	ew Fun	ctional Analysis and Com	plex Analysis		10-M-FAFT-Ü-152-m01		
Modul	e coord	inator		Module offered by	<u> </u>		
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites	i			
1 seme	ester	undergraduate					
Conter	nts						
lity and ties, m	d Cauch eromor	y-Riemann differential eo	quations, path integr nt series, residue the	als and Cauchy integ	analysis; complex differentiabi- gral theorems, isolated singulari- ons, Weierstraß product theorem		
Intend	ed lear	ning outcomes					
sis. He	/She is		cepts with one anoth		al analysis and complex analy- advantages of thinking across the		
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if n	ot every semester, information on whether		
Assess may or	sment w nly be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	tion of	places					
Additio	onal inf	ormation					
Worklo	oad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	e appea	ars in					
	Bachelor's degree (1 major) Mathematics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	ior's de	gree (1 major) Mathemati	cs (2023)				

Module title Abbreviation							
Overvi	ew Fun	ctional Analysis and Geo		10-M-FAGA-Ü-152-m01			
Modul	e coord	inator	Module offered by	<u> </u>			
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	undergraduate					
Conten	nts						
sis on		ds, submanifolds, calcul			analysis; fundamentals in analy- and applications in vector analy-		
Intend	ed lear	ning outcomes					
sis. He	/She is		cepts with one anothe		al analysis and geometric analy- advantages of thinking across the		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		on with the examiner. Each topic tüberblick (Overview).		
Allocat	tion of p	olaces					
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	e appea	ars in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module	title		Abbreviation				
Overvie	w Alge	bra and Number Theory		10-M-ALZT-Ü-152-m01			
Module	coord	inator		Module offered by			
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
12	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 semes	ster	undergraduate					
Conten	ts						
me nun structui	nbers a re of th	nd prime number factoris	sation, modular arith	metics, prime tests a	ary properties of divisibility, pri- and methods for factorisation, orms, diophantine approximation		
Intende	ed learn	ning outcomes					
le to rel	ate the				nd number theory. He/She is ab- hking across the borders of diffe-		
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) + l	Ü (2)						
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
Assessi may on	ment w ly be so	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and/	topics in pure mathe one examination in t		on with the examiner. Each topic tüberblick (Overview).		
Allocati	ion of p	olaces					
Additio	nal info	ormation					
Worklo	ad						
360 h							
Teachir	Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in							
Bachelo	or's deg	gree (1 major) Mathemati gree (1 major) Computatio gree (1 major) Mathemati	onal Mathematics (20	015)			
Dachell	Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overview Differential Geometry and Number Theory10-M-DGZT-Ü-152-m						
Module coordinator Module offered by						
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathe	ematics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on in the second	Module level	Other prerequisites	;		
1 seme	ster	undergraduate				
Conten	ts					
face the ber fac rings, t Intende The stu	eory, s torisati heory c ed lear ident is	pecial classes of surfaces on, modular arithmetics, of quadratic remainders, o ning outcomes acquainted with fundam	s; elementary propert prime tests and met quadratic forms, diop nental concepts and	ties of divisibility, p hods for factorisati bhantine approxim methods in differer	tries, main theorem on local sur- orime numbers and prime num- ion, structure of the residue class ation and diophantine equations. ntial geometry and number theo- advantages of thinking across the	
border	s of dif	ferent branches in mathe	matics.			
		number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (4) +	U (2)					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if	not every semester, information on whether	
Assess may on	ment v Ily be s	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and	topics in pure mathe one examination in t		upon with the examiner. Each topic Imtüberblick (Overview).	
Allocat	. <u> </u>					
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Mathemati	onal Mathematics (2	015)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzbı
	data record

Module	e title				Abbreviation	
Overvie	ew Ord	inary Differential Equatio	ory	10-M-GDZT-Ü-152-m01		
Module coordinator Module offer					/	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathe	matics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	Its					
ties of o thods f phantir Intende The stu	divisibi or facto ne appi ed lear ident is	lity, prime numbers and prisation, structure of the roximation and diophanti ning outcomes s acquainted with fundam	prime number factori residue class rings, ne equations. ental concepts and r	sation, modular ar theory of quadratic nethods in number	higher order; elementary proper- ithmetics, prime tests and me- remainders, quadratic forms, dio- remainders, quadratic forms, dio- remainders, quadratic forms, dio-	
		s the borders of different				
	_	number of weekly contact hours, l	anguage — If other than Gei	rman)		
V (4) +						
		GESSMENT (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if	not every semester, information on whether	
Assess may on	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		pon with the examiner. Each topic mtüberblick (Overview).	
Allocat			0			
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in				
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module	title		Abbreviation			
Overview Complex Analysis and Number Theory					10-M-FTZT-Ü-152-m01	
Module	coord	inator		Module offered by		
Dean of	fStudi	es Mathematik (Mathema	atics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
rems, is erstraß me nun structur	solated produc nbers a re of th	singularities, meromorp of theorem and theorem of nd prime number factoris	hic functions and Lau of Mittag-Leffler, conf sation, modular arith	urent series, residue ormal maps; elemer metics, prime tests a	grals and Cauchy integral theo- theorem and applications, Wei- ntary properties of divisibility, pri- and methods for factorisation, orms, diophantine approximation	
Intende	ed learı	ning outcomes				
She is a	able to		th one another, and r		analysis and number theory. He/ ges of thinking across the bor-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Assess may on	ment w ly be s	on of one candidate each ill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in tl		on with the examiner. Each topic tüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teachir	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in						
Bachelo	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation							
Overview Geometric Analysis and Number Theory 10-M-GAZT-Ü-152-m					10-M-GAZT-Ü-152-m01		
Module coordinator Module offered I							
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Its						
plicatio ber fac	ons in v torisati	ector analysis and topolo on, modular arithmetics,	ogy; elementary prop prime tests and met	erties of divisibility, hods for factorisatio	orms, Stoke's theorem and ap- prime numbers and prime num- n, structure of the residue class tion and diophantine equations.		
Intend	ed lear	ning outcomes					
He/She	e is abl	•	s with one another, a	-	ic analysis and number theory. antages of thinking across the		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)			
V (4) +	Ü (2)						
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate eacl vill have reference to two elected as the subject of ssessment: German and	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	ion of p	olaces					
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in						
	Bachelor's degree (1 major) Mathematics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						
Dachel	Sacheior S degree (1 major) Mathematics (2023)						

Module title					Abbreviation		
Overview Projective Geometry and Number Theory					10-M-PGZT-Ü-152-m01		
Module coordinator Module offer					y		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathe	matics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
and pri	me nur e class	nber factorisation, modu	lar arithmetics, prim	e tests and method	rties of divisibility, prime numbers Is for factorisation, structure of the tine approximation and diophanti-		
Intende	ed lear	ning outcomes					
He/She	e is abl		s with one another, a		r theory and projective geometry. vantages of thinking across the		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if	not every semester, information on whether		
Assess may on	ment w Ily be s	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		ipon with the examiner. Each topic mtüberblick (Overview).		
Allocat	. <u> </u>						
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teaching cycle							
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in						
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation							
Overview Discrete Mathematics and Number Theory					10-M-DIZT-Ü-152-m01		
Module	e coord	inator		Module offered by	<u> </u>		
		es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	1	od of grading	Only after succ. con	pl. of module(s)			
12		rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Its						
error-co dular a	orrectin	g codes; elementary pro	perties of divisibility, hods for factorisatior	prime numbers and , structure of the res	itions), cryptographic methods, l prime number factorisation, mo- sidue class rings, theory of qua- e equations.		
Intend	ed lear	ning outcomes					
tics. He	e/She i	•	cepts with one anoth		theory and discrete mathema- advantages of thinking across		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	man)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).		
Allocat	ion of j	olaces					
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teachi	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
	Module appears in						
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overview Functional Analysis and Number Theory 10-M-FAZT-Ü					10-M-FAZT-Ü-152-m01	
Module coordinator				Module offered by		
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
of divis	sibility, sation,	prime numbers and prim	e number factorisations in the second s	on, modular arithme	l analysis; elementary properties etics, prime tests and methods for rs, quadratic forms, diophantine	
Intend	ed lear	ning outcomes				
He/Sh	e is abl		s with one another, a		al analysis and number theory. antages of thinking across the	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	man)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
Assess may or	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).	
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	oad					
360 h						
Teachi	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	Module appears in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module	title				Abbreviation		
Overvie	ew Diffe	erential Geometry and Pa	10-M-DGPA-Ü-152-m01				
Module coordinator Module offer					ed by		
Dean of	f Studi	es Mathematik (Mathema	atics)	Institute of N	lathematics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module	(s)		
12	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
face the ons of f probler Intende	eory, sj first oro ns, ma ed lear dent is	pecial classes of surfaces ler, existence and unique ximum principle and Diri ning outcomes acquainted with fundam	s; examples of partial eness theorems, basi chlet problem. nental concepts and i	differential ec c equations o nethods in dif	ometries, main theorem on local sur- quations and partial differential equati- f mathematical physics, boundary value ferential geometry and the theory of h one another, and realises the advan-		
tages o	f think	ing across the borders of	different branches ir	mathematics			
		number of weekly contact hours, l	anguage — if other than Ge	rman)			
V (4) +	Ü (2)						
		essment (type, scope, langua le for bonus)	ge — if other than German,	examination offere	d — if not every semester, information on whether		
Assess may on	ment w ly be s		topics in pure mathe one examination in t		eed upon with the examiner. Each topic Gesamtüberblick (Overview).		
Allocat	-		Ŭ				
Additio	nal inf	ormation					
Worklo	ad						
360 h							
Teachir	ıg cycl	е					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in						
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overview Ordinary Differential Equations and Partial Differential Equations 10-M-GDPA-Ü-152-m01					10-M-GDPA-Ü-152-m01	
Module coordinator Module offered by					,	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mather	matics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
ferentia differer	al equa ntial eq	tions, matrix exponential uations and partial differ	l series, linear differe rential equations of fi	ntial equations of h rst order, existence	itial values, systems of linear dif- igher order; examples of partial and uniqueness theorems, basic iple and Dirichlet problem.	
Intende	ed lear	ning outcomes				
tial equ	uations		these concepts with		ory of ordinary and partial differen- ealises the advantages of thinking	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		s essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether	
Assess may on	ment w Iy be s	ion of one candidate eacl vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		pon with the examiner. Each topic ntüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
	Module appears in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation						
Overview Complex Analysis and Partial Differential Equations					10-M-FTPA-Ü-152-m01	
Module coordinator N				Module offered	by	
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Math		
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
erstraß ons and themat Intende The stu differen	produ d partia ical ph ed lear ident is ntial eq	ct theorem and theorem of al differential equations of ysics, boundary value pro ning outcomes acquainted with fundam	of Mittag-Leffler, conf of first order, existence oblems, maximum pr nental concepts and r to relate these conce	formal maps; exa e and uniquenes inciple and Dirich nethods in comp pts with one anot	due theorem and applications, Wei- mples of partial differential equati- s theorems, basic equations of ma- nlet problem. lex analysis and the theory of partial her, and realises the advantages of	
	<u> </u>	number of weekly contact hours, l				
V (4) +		· · · · · ·				
		Sessment (type, scope, langua ile for bonus)	ge — if other than German, o	examination offered —	if not every semester, information on whether	
Assess may on	ment w Ily be s		topics in pure mathe one examination in t		upon with the examiner. Each topic amtüberblick (Overview).	
Allocat			0,00			
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in						
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overvie	ew Geo	metric Analysis and Part	ial Differential Equat	ions	10-M-GAPA-Ü-152-m01	
Module coordinator				Module offered by		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mather	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	Its					
applica unique	ations i ness th	n vector calculus and top	ology, examples of fi	rst order partial diff	forms, Stoke's theorem and its erential equations, existence and ue theorems, maximum principle	
Intende	ed lear	ning outcomes				
al diffe	rential		e to relate these con	cepts with one anot	ic analysis and the theory of parti- her, and realises the advantages	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether	
Assess may on	ment w	ion of one candidate each vill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		oon with the examiner. Each topic ntüberblick (Overview).	
Allocat						
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
	Module appears in					
Bachel	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation							
Overview Functional Analysis and Partial Differential Equatio				ions	10-M-FAPA-Ü-152-m01		
Module coordinator M				Module offered by	<u> </u>		
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathen	natics		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)			
12	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Its						
ferentia	al equa	tions and partial differen	tial equations of first	order, existence an	analysis; examples of partial dif- d uniqueness theorems, basic ple and Dirichlet problem.		
Intend	ed lear	ning outcomes					
tial diff	erentia	•	ble to relate these co	ncepts with one and	al analysis and the theory of par- ther, and realises the advantages		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)			
V (4) +	Ü (2)						
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether		
Assess may or	ment w	ion of one candidate eac vill have reference to two elected as the subject of ssessment: German and	topics in pure mathe one examination in t		oon with the examiner. Each topic htüberblick (Overview).		
Allocat	ion of	places					
Additio	onal inf	ormation					
Worklo	ad						
360 h							
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)			
Module	e appea	ars in					
	Bachelor's degree (1 major) Mathematics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachel	Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation					
Overvi	ew Part	ial Differential Equations	and Number Theory		10-M-PAZT-Ü-152-m01
Module	e coord	inator		Module offered	by
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Matl	hematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	its				
richlet arithmo remain Intendo The stu differen	problen etics, p ders, q ed lear udent is ntial eq	n; elementary properties rime tests and methods f uadratic forms, diophant ning outcomes acquainted with fundam uations. He/She is able t	of divisibility, prime for factorisation, stru- tine approximation and mental concepts and no to relate these conce	numbers and pri cture of the resid nd diophantine e methods in numb pts with one ano	oblems, maximum principle and Di- me number factorisation, modular ue class rings, theory of quadratic quations. Der theory and the theory of partial ther, and realises the advantages of
	-	ss the borders of different number of weekly contact hours, l			
V (4) +	_	· · · · · · · · · · · · · · · · · · ·			
		Sessment (type, scope, langua ile for bonus)	ge — if other than German,	examination offered —	if not every semester, information on whether
Assess may or	ment w		topics in pure mathe one examination in t		l upon with the examiner. Each topic samtüberblick (Overview).
Allocat	ion of	olaces			
Additio	onal inf	ormation			
Worklo	ad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Bachel	or's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Mathemati	onal Mathematics (2	015)	

Module title Abbreviation							
Overvie	ew Stoc	hastics 1 and Stochastic	5 2		10-M-STO-Ü-152-m01		
Module	coord	inator		Module offered by			
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)			
12	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	Contents						
continu chastic varianc ta in no	ious di indepe e, limit ormal a	stributions: normal distri endence, elementary con	bution, random varia ditional probability, c umbers, central limit	ble, distribution fun characteristics of dis theorem; elements	asure and integration theory, ction, product measures and sto- stributions: expected value and of data analysis, statistics of da-		
		-	antal and advanced	concents and mathe	de in stachastics Us/Shais ab		
le to rel	ate the				ods in stochastics. He/She is ab- nking across the borders of diffe-		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
V (4) +	Ü (2)						
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether		
Assess pic may	ment w / only b		topics in applied mat t of one examination		upon with the examiner. Each to- samtüberblick (Overview).		
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
360 h							
Teachir	Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in						
		gree (1 major) Mathemati					
		gree (1 major) Computatio		015)			
васпе	Bachelor's degree (1 major) Mathematics (2023)						

Module title Abbreviation						
Overvi	ew Nun	nerical Mathematics 1 an	nd Numerical Mathem	atics 2	10-M-NUM-Ü-152-m01	
Modul	Module coordinator				ed by	
Dean c	of Studi	es Mathematik (Mathem	atics)	Institute of Ma	athematics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
		stems of linear equation tion with polynomials, s			ear equations and systems of equati- numerical integration.	
Intend	ed lear	ning outcomes				
He/Sh	e is abl		s with one another, a		nethods in numerical mathematics. advantages of thinking across the	
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered	- if not every semester, information on whether	
Assess pic ma	sment w y only b		topics in applied ma t of one examination		greed upon with the examiner. Each to ds Gesamtüberblick (Overview).	
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	ns for teaching-degree progra	immes)		
Modul	e appea	ars in				
Bachel	or's de	gree (1 major) Mathemat	ics (2015)			
Bachel	or's de	gree (1 major) Mathemat	ics (2023)			

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015	page 97 / 406
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Module title Abbreviation						
Overvi	ew Ord	inary Differential Equatio	ns and Numerical Ma	athematics 1	10-M-GDNU1-Ü-152-m01	
Module coordinator Mod				Module offered	l by	
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mat	thematics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s))	
12	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
ferenti of line	al equa ar equa	tions, matrix exponential	series, linear differe oblems, nonlinear eq	ntial equations of uations and systems	n initial values, systems of linear dif- of higher order; solution of systems tems of equations, interpolation with	
Intend	ed lear	ning outcomes				
ordina	ry diffe		e is able to relate the	se concepts with	erical mathematics and the theory of n one another, and realises the ad- cs.	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered –	 if not every semester, information on whether 	
Assess ner. Ea view).	sment w Ich topi		topics in pure and ap s the subject of one e		tics as agreed upon with the exami- ne sub-fields Gesamtüberblick (Over-	
Alloca	tion of p	olaces				
Additio	onal inf	ormation				
Worklo	bad					
360 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)		
Modul	e appea	ars in				
		gree (1 major) Mathemati				
Bache	lor's de	gree (1 major) Mathemati	cs (2023)			

Module title Abbreviation					
Overvi	ew Ord	inary Differential Equatio	ons and Numerical Ma	athematics 2	10-M-GDNU2-Ü-152-m01
Modul	e coord	inator		Module offered	by
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Mat	hematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts				
ferenti	al equa progran	tions, matrix exponentia	l series, linear differe	ntial equations o	n initial values, systems of linear dif- of higher order; eigenvalue problems, tial equations, boundary value pro-
Intend	ed lear	ning outcomes			
ordina	ry diffe		e is able to relate the	se concepts with	erical mathematics and the theory of one another, and realises the ad- cs.
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered –	- if not every semester, information on whether
Assess ner. Ea view).	sment w Ich topi		topics in pure and ap s the subject of one e		tics as agreed upon with the exami- ne sub-fields Gesamtüberblick (Over-
	tion of				
Additio	onal inf	ormation			
Worklo	bad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
		gree (1 major) Mathemati gree (1 major) Mathemati			

Module title					Abbreviation	
Overvi	ew Fun	ctional Analysis and Num	erical Mathematics	1	10-M-FANU1-Ü-152-m01	
Modul	e coord	inator		Module offered by	,	
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mather	natics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
linear	equatio		ems, nonlinear equa	tions and systems of	l analysis; solution of systems of of equations, interpolation with	
Intend	ed lear	ning outcomes				
matics	. He/Sł		concepts with one an		al analysis and numerical mathe- the advantages of thinking across	
Course	es (type, 1	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if n	ot every semester, information on whether	
Assess ner. Ea view).	sment v ach topi		topics in pure and ap s the subject of one e		as agreed upon with the exami- ub-fields Gesamtüberblick (Over-	
Alloca	tion of	places				
Additi	onal inf	ormation				
Worklo	oad					
360 h						
Teachi	Teaching cycle					
Referr	ed to in	LPO I (examination regulations	s for teaching-degree progra	immes)		
Modul	e appea	ars in				
		gree (1 major) Mathemati gree (1 major) Mathemati				
васпе	ior s de	gree (1 major) Mathemati	LS (2023)			

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	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
Overvi	ew Fun	ctional Analysis and Num	nerical Mathematics	2	10-M-FANU2-Ü-152-m01	
Modul	e coord	inator		Module offered by	,	
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Mathe	matics	
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conten	nts					
	progran				l analysis; eigenvalue problems, l equations, boundary value pro-	
Intend	ed lear	ning outcomes				
matics	.He/Sł		concepts with one an		al analysis and numerical mathe- the advantages of thinking across	
Course	S (type, 1	number of weekly contact hours, I	language — if other than Ger	rman)		
V (4) +	Ü (2)					
		s essment (type, scope, langua ble for bonus)	ge — if other than German, o	examination offered — if r	not every semester, information on whether	
Assess ner. Ea view).	sment v ich topi		topics in pure and ap s the subject of one e		as agreed upon with the exami- sub-fields Gesamtüberblick (Over-	
	tion of					
			-			
Additio	onal inf	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
	-					
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
		gree (1 major) Mathemati	ics (2015)			
		gree (1 major) Mathemati				

Module title Abbreviation					
Overvi	ew Ope	rations Research and N	umerical Mathematic	51	10-M-ORNU1-Ü-152-m01
Modul	Module coordinator M				/
Dean o	of Studi	es Mathematik (Mathem	atics)	Institute of Mathe	matics
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
12	1	rical grade		• • • •	
Duratio		Module level	Other prerequisites	6	
1 seme	ester	undergraduate			
Conter	nts		I		
ons, in	terpola		plines and trigonome	tric functions, num	equations and systems of equati- erical integration; linear program- heoretic problems.
Intend	ed lear	ning outcomes			
researd	ch.He/	•	se concepts with one		cal mathematics and operations es the advantages of thinking
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
V (4) +	Ü (2)				
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if	not every semester, information on whether
Assess pic ma	sment w y only b		o topics in applied ma ct of one examination		d upon with the examiner. Each to esamtüberblick (Overview).
Allocat	tion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
360 h					
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	ammes)	
Modul	e appea	urs in			
Bachel	or's de	gree (1 major) Mathemat	tics (2015)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 102 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
Overvi	ew Ope	rations Research and Nu	merical Mathematics	5 2	10-M-ORNU2-Ü-152-m01	
Module	e coord	inator		Module offered by	I	
Dean o	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
eigenv	alue pro				ming, graph theoretic problems; or ordinary differential equations,	
Intend	ed learı	ning outcomes	·			
researd	h.He/		e concepts with one a		al mathematics and operations s the advantages of thinking	
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
Assess pic ma	ment w y only b		topics in applied ma t of one examination		upon with the examiner. Each to samtüberblick (Overview).	
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
360 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	urs in				
		gree (1 major) Mathemati	cs (2015)			

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 103 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	Module title Abbreviation					
Overview Partial Differential Equations and Numerical Mathematics 1 10-M-PANU1-Ü-152-m01					10-M-PANU1-Ü-152-m01	
Module coordinator				Module offere	d by	
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Ma	athematics	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
12	nume	rical grade				
Durati	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
ess the richlet stems	eorems proble of equa	, basic equations of math m; solution of systems of ations, interpolation with	ematical physics, bo linear equations and	undary value p I curve fitting p	s of first order, existence and uniquen- roblems, maximum principle and Di- roblems, nonlinear equations and sy- etric functions, numerical integration.	
Intend	ed lear	ning outcomes				
partial	differe		s able to relate these	concepts with	nerical mathematics and the theory of one another, and realises the advan-	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
V (4) +	Ü (2)					
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered	— if not every semester, information on whether	
Assess ner. Ea view).	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure and applied mathematics as agreed upon with the exami- ner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Over- view). Language of assessment: German and/or English					
Alloca	tion of _l	places				
Additio	onal inf	ormation				
Worklo	oad					
360 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
		gree (1 major) Mathemati				
Bache	Bachelor's degree (1 major) Mathematics (2023)					

Module title Abbreviation					Abbreviation
Overview Partial Differential Equations and Numerical Mathematics 2 10-M-PANU2-Ü-152-mo1					10-M-PANU2-Ü-152-m01
Module coordinator				Module offere	d by
Dean c	of Studi	es Mathematik (Mathema	atics)	Institute of Ma	athematics
ECTS	Meth	od of grading	Only after succ. com	pl. of module(s)
12	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts	<u>.</u>			
ess the richlet rential	eorems problei equatio	, basic equations of math m; eigenvalue problems, ons, boundary value prob	ematical physics, bo linear programming,	undary value p	s of first order, existence and uniquen- roblems, maximum principle and Di- itial value problems for ordinary diffe-
Intend	ed lear	ning outcomes			
partial	differe		s able to relate these	concepts with	nerical mathematics and the theory of one another, and realises the advan-
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered	— if not every semester, information on whether
Assess ner. Ea view).	oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure and applied mathematics as agreed upon with the exami- ner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Over- view). Language of assessment: German and/or English				
	tion of		0		
Additio	onal inf	ormation			
Worklo	bad				
360 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)				

Module title Abbreviation					Abbreviation	
Overview Operations Research and Functional Analysis 10-M-ORFA-Ü-152-m01					10-M-ORFA-Ü-152-m01	
Module coordinator				Module offered by		
Dean of Studies Mathematik (Mathematics)			atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		s and Hilbert spaces, bou , transport problems, inte			analysis; linear programming, problems.	
Intende	ed lear	ning outcomes				
arch. H	e/She		ncepts with one anot		al analysis and operations rese- advantages of thinking across	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		Sessment (type, scope, langua Ile for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure and applied mathematics as agreed upon with the exami- ner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Over- view). Language of assessment: German and/or English						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)						

Ī

Module title					Abbreviation	
Overview Operations Research and Partial Differential Equa			rtial Differential Equa	ations	10-M-ORPA-Ü-152-m01	
Module coordinator				Module offered by		
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)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites	;		
1 seme	ester	undergraduate				
Conter	nts					
examp ess the	les of p	partial differential equation, basic equations of math	ons and partial differe	ential equations of fi	ming, graph theoretic problems; rst order, existence and uniquen- ms, maximum principle and Di-	
Intend	ed lear	ning outcomes				
tial dif	ferentia		ble to relate these co	ncepts with one and	ns research and the theory of par- ther, and realises the advantages	
Course	es (type, 1	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (4) +	Ü (2)					
		s essment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure and applied mathematics as agreed upon with the exami- ner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Over- view).						
		ssessment: German and,	/or English			
Allocat	tion of	places				
Additio	onal inf	ormation				
Workload						
360 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
		gree (1 major) Mathemati)		
Bachelor's degree (1 major) Computational Mathematics (2015)						

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 107 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

0 no AALLO-Ü-232-mo1Module offered bInstitute of MatheretereInstitute of MatheretereInstitute of MatheretereInstitute of MatheretereInstitute of MatheretereOnly after succ. colspan="2">Institute of MatheretereInstitute of MatheretereIn	Module title				Abbreviation		
Institute of Mathematics ECTS Meth d of grading Only after succ. compl. of module(s) 12 numerical grade	Overview Algebra and Logic				10-M-ALLO-Ü-232-m01		
ECTSMethew of gradingOnly after succ. compl. of module(s)12numetical gradeDurationModule levelOther prerequisites1 sem esterContentsIntended learning outcomesCourses (type, number of weekly contact hours, language – if other than German)V (a) + Ú (a)V (a) + Ú (b)Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)oral examination of one candidate each (20 to 40 minutes)Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or EnglishAlditional informationMotkle are in total and are in total are in total and are	Module coordinator				Module offered by		
12 numerical grade Duration Module level Other prerequisites 1 semester Contents Intended learning outcomes Contests Contests Intended learning outcomes Courses (type, number of weekly contact hours, language – if other than German) V (4) + Û (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment (upe, scope, language – if other than German, examination sa agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Adlitonal Information					Institute of Mathem	atics	
Duration Module level Other prerequisites 1 semester - 1 semester - Contents - Contents - - Intended learning outcomes - - Courses (type, number of weekly contact hours, language – if other than German) - V (a) + Û (2) - Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places - - Motklada - 360 h - Teaching cycle - - Referred to in LPO 1 (examination regulations for teaching-degree programmes) - Module appears in - Bachelor's degree (1 major) Mathematics (2015)	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
1 semester 1 semester Contents Intended learning outcomes Courses (type, number of weekly contact hours, language – if other than German) V (a) + Ü (z) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places	12	nume	rical grade				
Contents Con	Duratio	n	Module level	Other prerequisites			
Intended learning outcomes 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 every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	1 seme	ster					
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 every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Conten	ts					
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 every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)							
V (4) + Ú (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Intende	ed learr	ning outcomes				
V (4) + Ú (2) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)							
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)			umber of weekly contact hours, l	anguage — if other than Ger	man)		
module is creditable for bonus) oral examination of one candidate each (20 to 40 minutes) Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)							
Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview). Language of assessment: German and/or English Allocation of places Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)				ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Additional information Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Assess may on	Assessment will have reference to two topics in pure mathematics as agreed upon with the examiner. Each topic may only be selected as the subject of one examination in the sub-fields Gesamtüberblick (Overview).					
Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Allocat	ion of p	olaces				
Workload 360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)							
360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Additio	nal info	ormation				
360 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)							
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	Workload						
Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Bachelor's degree (1 major) Mathematics (2015)	360 h						
Module appears in Bachelor's degree (1 major) Mathematics (2015)	Teaching cycle						
Module appears in Bachelor's degree (1 major) Mathematics (2015)							
Bachelor's degree (1 major) Mathematics (2015)	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Bachelor's degree (1 major) Mathematics (2015)							
	Module appears in						

Module title Abbreviation					
Overview Applied Algebra and Logi	c		10-M-AALO-Ü-232-m01		
Module coordinator		Module offered by			
	F	Institute of Mathem	atics		
ECTS Method of grading	Only after succ. con	pl. of module(s)			
12 numerical grade					
Duration Module level	Other prerequisites				
1 semester					
Contents					
Intended learning outcomes					
Courses (type, number of weekly contact hou	urs, language — if other than Ger	man)			
V (4) + Ü (2)					
Method of assessment (type, scope, lar module is creditable for bonus)	nguage — if other than German,	examination offered — if no	t every semester, information on whether		
oral examination of one candidate e Assessment will have reference to t may only be selected as the subject Language of assessment: German a	wo topics in pure mathe of one examination in t				
Allocation of places					
Additional information					
Workload					
360 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor's degree (1 major) Mathen Bachelor's degree (1 major) Mathen					

Module	Module title Abbreviation				
Overview Discrete Mathematics and Logic 10-M-DILO-Ü-232-mo1				10-M-DILO-Ü-232-m01	
Module coordinator			Module offered by		
				Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
12	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster				
Conten	ts				
Intende	ed learn	ning outcomes			
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) + İ	Ü (2)				
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
Assessi may on	ment w ly be so	on of one candidate eacl ill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		on with the examiner. Each topic tüberblick (Overview).
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
360 h					
Teachir	ng cycl	9			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in				
	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)				

Module title Abbreviation					Abbreviation
Overview Logic and Number Theory 10-M-LOZT-Ü-232-mo1			10-M-LOZT-Ü-232-m01		
Module coordinator		Module offered by			
			_	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
12	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster				
Conten	ts				
Intende	ed learn	ning outcomes			
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
Assess may on	ment w ly be so	on of one candidate eacl ill have reference to two elected as the subject of ssessment: German and,	topics in pure mathe one examination in t		on with the examiner. Each topic tüberblick (Overview).
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
360 h					
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematics (2023)				



Compulsory Electives Application-oriented Subject

(30 ECTS credits)

Students must successfully complete modules worth 30 ECTS credits in a single one of the focuses listed below. In addition, students must successfully complete, in the area of mandatory electives application-oriented subject, modules with numerical grading worth no less than 15 ECTS credits, cf. Section 3 Subsection 2 Sentences 2 through 4 FSB (subject-specific provisions).

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 112 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Focus Biology (30 ECTS credits)

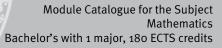
Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 113 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules General Biology I

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 114 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	Module title Abbreviation					
The Pla	The Plant Kingdom 07-1A1ZPF-152-m01					
Module coordinator				Module offered by		
Dean of Studies Biologie (Biology)			Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 semester undergraduate		exercises (minimum	Admission prerequisite to assessment: exercises. Regular attendance of exercises (minimum 80%) and successful completion of the respective exercises (approx. 25 to 30 hours) are prerequisites for admission to assessment.			
Conten	ts					
At the l derstar lutiona biologi cientist	evel of nd the f ry and cal org ts are o	groups in the plant kin orms and functions of ecological context. The anisation. Students wil ften required to posses	ts will be introduced to agdom, students will ac plant organisms, with a contents of the modul Il also acquire and prac ss.	quire the fundament norphology and cyto e are relevant for bio	al knowledge neces logy being discusse logical disciplines a	sary to un- d in an evo- it all levels of
Intende	ed lear	ning outcomes				
 A F II A F F 	 Knowledge of the specific characteristics of the intracellular and extracellular structures of plant cells and fungi. Ability to recognise evolution as the driving force behind the phylogeny of species. Familiarity with the concepts of phylogenetic relationships between plants/fungi. Familiarity with the distinguishing characteristics and major representatives of fungi as well as groups in the plant kingdom. Ability to select those plant and fungal organisms that are most suitable for particular scientific issues. Familiarity with the components and functioning of microscopes. Fundamental skills in the interpretation of macroscopic and histologic preparations by light microscopy. Fundamental preparation skills. 					ic issues.
Course	Courses (type, number of weekly contact hours, language — if other than German)					
V (1.5)	+ Ü (2.5	5)				
		sessment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
written credita		nation (approx. 60 min bonus	utes)			
Allocat	ion of _l	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
-						
Module appears in						
Bachelor's degree (1 major) Biology (2015)						
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 115 / 406



Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)
--

Modul	e title				Abbreviation
Evolution and the Animal Kingdom					07-1A1TI-152-m01
Modul	e coord	linator		Module offered by	
holder of the Professorship of Zoology at the Department of Faculty of Biology Electronmicroscopy					
ECTS	Meth	od of grading	Only after succ. compl. of module(s)		
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester		undergraduate	(minimum 80%) and		exercises. Regular attendance tion of exercises (approx. 25 to n to assessment.
Conter	te			,	

Contents

The lecture *Evolution* will acquaint students with fundamental concepts and mechanisms of evolutionary biology: the origins of diversity; natural and sexual selection; speciation; population genetics. It will provide students with an introduction to phylogenetic reconstruction and will thus enable them to develop an understanding of the system of plants and animals. During the exercise, students will complete exercises on mechanistic evolution and evolutionary history. The lecture *Tierreich (Animal Kingdom)* will discuss the diversity of animal organisms on the basis of the phyla of the animal kingdom focusing on phylogenetic criteria. It will address the ecological constraints that led to the development of different types of body plans with their different structures and functions. In this context, the lecture will also develop an awareness in students of how important a knowledge of the fundamental principles of zoology is for research and applications not only but in particular in biology and medicine. In the exercise, students will prepare and/or examine selected species and histological preparations and will thus become familiar with the functional and morphological characteristics of the major multicellular animal phyla. In this context, students will practise working with light microscopes and stereo microscopes and will acquire fundamental preparation skills. They will prepare drawings, documenting and interpreting what they have seen.

Intended learning outcomes

Students will be familiar with the fundamental concepts and mechanisms of evolutionary biology and will know that these are key to understanding biological processes. They will have gained an overview of the diversity of animals on the basis of different types of body plans and will understand important structures in both a functional and an ecological context.

Courses (type, number of weekly contact hours, language – if other than German)

V (2) + Ü (3)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes) creditable for bonus

Allocation of places

--

Additional information

--

Workload

150 h

Teaching cycle

--

Referred to in LPO I (examination regulations for teaching-degree programmes)

§ 41 | Nr. 1 (4 ECTS credits) and § 41 | Nr. 4 (1 ECTS credits)

§ 61 | Nr. 1 (4 ECTS credits) and § 61 | Nr. 4 (1 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 117 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Module appears in

Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Computer Science (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Computer Science (2017)
Bachelor's degree (1 major) Computer Science (2019)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
Bachelor's degree (1 major) Biology (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)
Bachelor's degree (1 major) Mathematics (2023)
Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 118 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules General Biology II

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 119 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title				Abbreviation		
Plant P	hysiol	ogy			07-2A2PHYPF-152-r	n01
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS		od of grading	Only after succ. con			
4		rical grade				
4 Duratio		Module level	Other prerequisites			
		-				
1 seme	ster	undergraduate	(minimum 80%) and	site to assessment: d successful comple quisites for admissio	tion of exercises (ap	
Conten	ts					
opportu the bio nal env general	This module will acquaint students with the principles of general plant physiology and will provide them with an opportunity to develop the fundamental skills for working in a biological laboratory. The module will first address the biochemistry of the cell and will then move on to discuss the physiological processes that regulate the internal environment of plants in particular. Using the example of plants, the module will introduce students to the general principles of physiology. The module will also elaborate on the characteristic peculiarities of plants in comparison with animals and prokaryotes.					l first address ate the inter- ents to the
Intende	ed lear	ning outcomes				
tors tha skills o	at distin n how	nguish plant physiolog to perform, analyse an	al processes in plants a y from animal and prok d present scientific exp nental physiological pro	aryotic physiology eriments Essentia	Fundamental knowl	edge and
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
V (1) + l	Ü (2)					
		sessment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
written credita		nation (approx. 60 min bonus	utes)			
Allocat						
Additio	nalinf	ormation				
Auditio	IIat IIII					
Worklo	ad					
120 h						
Teachi	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
§ 61 N	r. 2					
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Biology ((2015)			
		gree (1 major) Mathem				
			ational Mathematics (20	015)		
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)					
	Bachelor's degree (1 major) Biology (2017)					
		gree (1 major) Biology (
		gree (1 major, 1 minor)				
		gree (1 major, 1 minor) jor Mathematics (2015)		a gonorated 49 Arrager		n200 100 / 101
Bachelor S	with 1 llid	Joi mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema		page 120 / 406



Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 121 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title				Abbreviation		
Animal	Physic	ology			07-2A2PHYTI-152-m	101
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS		od of grading	Only after succ. con			
4		rical grade		•		
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequi (minimum 80%) and	site to assessment: d successful comple quisites for admissio	tion of exercises (ap	
Conten	ts					
This module will acquaint students with the principles of general and comparative animal physiology and will provide them with an opportunity to develop the fundamental skills for working in a physiological laboratory. The module will focus on neurophysiology and sensory physiology as well as aspects of metabolic physiology (respiration and excretion).					boratory. The	
Intende	ed lear	ning outcomes				
		e developed an underst Indamental knowledge				
Course	S (type, r	number of weekly contact hours	s, language — if other than Ge	rman)		
V (1) + (Ü (2)					
		sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		nation (approx. 60 mini	utes)			
credita						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
120 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
§ 41 N § 61 N						
Module	e appea	ars in				
Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)						
Dachel		gree (1 major) Mathema	anco (2023)			
Bachelor's	with 1 ma	or Mathematics (2015)		5 • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 122 / 406

	Module title				Abbreviation	
Genetio	cs, Neur	obiology, Behaviour			07-2A2GENV-152-m	01
Module	e coordir	nator		Module offered by		
Dean o	fStudies	s Biologie (Biology)		Faculty of Biology		
ECTS		l of grading	Only after succ. com			
		cal grade				
5		Nodule level				
			Other prerequisites			
1 semester undergraduate		undergraduate	Admission prerequisi (minimum 80%) and 30 hours) are prerequ	successful comple	tion of exercises (ap	
Conten	ts					
Fundan	nental p	rinciples of genetics,	neurobiology and behav	ioural biology.		
Intende	ed learni	ng outcomes				
heritan	ce.		be able to relate animal		olecular and formal l	bases of in-
Method	d of asse s creditable		guage — if other than German, ex	amination offered — if no	ot every semester, informat	ion on whether
	examina ble for b	ation (approx. 60 to 9 onus	o minutes)			
Allocat	ion of pl	aces				
Additio	nal info	rmation				
Worklo						
150 h						
Teachin	ng cycle					
	d to in l					
 Referre		POI (examination regulation	ons for teaching-degree program	imes)		
§ 61 N	lr. 2 (2 E	CTS credits)	ons for teaching-degree program	imes)		
§ 61 N § 61 N	lr. 2 (2 E lr. 3 (1 E(CTS credits) CTS credits)	ions for teaching-degree program	mes)		
§ 61 N § 61 N § 61 N	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E	CTS credits) CTS credits) CTS credits)	ions for teaching-degree program	mes)		
§ 61 N § 61 N § 61 N Module	Ir. 2 (2 E0 Ir. 3 (1 E0 Ir. 4 (1 E0 e appear	CTS credits) CTS credits) CTS credits) s in		imes)		
§ 61 N § 61 N § 61 N Module Bachele	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology	(2015)	imes)		
§ 61 N § 61 N § 61 N Bodule Bachele Bachele	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute	(2015) er Science (2015)	imes)		
§ 61 N § 61 N § 61 N Module Bachele Bachele Bachele	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem	(2015) er Science (2015) atics (2015)			
§ 61 N § 61 N § 61 N Bachelo Bachelo Bachelo Bachelo	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major) Computa	(2015) er Science (2015)			
§ 61 N § 61 N § 61 N Bacheld Bacheld Bacheld Bacheld Bacheld Bacheld	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major) Computa	(2015) er Science (2015) atics (2015) ational Mathematics (201 Biology (Minor, 2015)			
§ 61 N § 61 N § 61 N Bachele Bachele Bachele Bachele Bachele Bachele Bachele	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major) Compute ree (1 major, 1 minor)	(2015) er Science (2015) atics (2015) ational Mathematics (201 Biology (Minor, 2015) (2017)			
§ 61 N § 61 N § 61 N § 61 N Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major, 1 minor) ree (1 major, 1 minor)	(2015) er Science (2015) atics (2015) ational Mathematics (201 Biology (Minor, 2015) (2017) er Science (2017)			
§ 61 N § 61 N § 61 N § 61 N Bachele Bachele Bachele Bachele Bachele Bachele Bachele	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major) Computa ree (1 major, 1 minor) ree (1 major) Biology ree (1 major) Compute	(2015) er Science (2015) atics (2015) ational Mathematics (201 Biology (Minor, 2015) (2017) er Science (2017) er Science (2019)			
§ 61 N § 61 N § 61 N § 61 N Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	Ir. 2 (2 E Ir. 3 (1 E Ir. 4 (1 E e appear or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Mathem ree (1 major) Computa ree (1 major, 1 minor) ree (1 major) Biology ree (1 major) Compute ree (1 major) Compute	(2015) er Science (2015) atics (2015) ational Mathematics (201 Biology (Minor, 2015) (2017) er Science (2017) er Science (2019) 2019)			
§ 61 N § 61 N § 61 N § 61 N Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Module	Ir. 2 (2 E Ir. 3 (1 E Ir. 3 (1 E e appear or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi or's degi e studies	CTS credits) CTS credits) CTS credits) s in ree (1 major) Biology ree (1 major) Compute ree (1 major) Compute ree (1 major) Compute ree (1 major) Biology ree (1 major) Compute ree (1 major) Compute ree (1 major) Compute ree (1 major) Compute ree (1 major) Biology (2	(2015) er Science (2015) atics (2015) ational Mathematics (2017) (2017) er Science (2017) er Science (2019) 2019) ungsstudien (2020)			

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

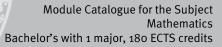
Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 124 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules General Biology III

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 125 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation							
Develo	pmenta	al Biology of Animals			07-3A3EBIOTI-152-1	m01						
Module	coord	inator		Module offered by								
		es Biologie (Biology)		Faculty of Biology								
ECTS		od of grading	Only after succ. con									
		rical grade										
4 Duratio	ı	Module level	Other prerequisites									
		-										
1 seme	ster	undergraduate		d successful comple	exercises. Regular a tion of exercises (ap on to assessment.							
Conten	ts											
biology bians, i of sper organo	r. The fo nemato matozo genesis	ollowing topics will be odes, Drosophila, mous oa and ova), differentia	theoretical and practic covered: early embryon se) and relevance for th l gene expression, cell arcinogenesis, stem cel	ic development of v e systematics of ani growth and molecul	arious model organi mals, gametogenes ar regulation of cell	sms (amphi- is (production development,						
Intende	ed learn	ning outcomes										
discipli don, ca	inary co incer ar	onnections between de nd stem cells as well as). 3. Molecular mechan velopmental biology ar s gametes. 6. Interrelat opmental processes di	nd other branches o ions between ontog	f biology. 5. Cell biol	ogy of cotyle-						
Course	S (type, n	umber of weekly contact hour	s, language — if other than Ger	rman)								
V (1) +	Ü (3)											
		essment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether						
written credita		nation (approx. 60 min bonus	utes)									
Allocat	ion of p	olaces										
Additio	nal info	ormation										
Worklo	ad											
120 h												
Teachi	ng cycl	e										
		•										
Referre	d to in	IPOI (examination regulation	ons for teaching-degree progra	mmec)								
§ 61 N			ons for teaching-degree progra									
Module	_	ore in										
		gree (1 major) Biology ((2015)									
		gree (1 major) Biology (gree (1 major) Mathema	-									
		gree (1 major) Biomedi										
			ational Mathematics (20	015)								
		gree (1 major, 1 minor)										
		gree (1 major) Biology (
Bachel						Bachelor's degree (1 major) Biomedicine (2018)						
		or Mathematics (2015)		• generated 18-Apr-2025 •								



Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 127 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Develo	pmenta	al Biology of Plants			07-3A3EBIOPF-152-	m01
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS	1	od of grading	Only after succ. con	, ,		
	1	rical grade				
4 Duratio		Module level	Other preveruisites			
			Other prerequisites			
1 seme	ster	undergraduate	Admission prerequi (minimum 80%) and 30 hours) are prerec	d successful comple	tion of exercises (ap	
Conten	Its					
over a	plant's	e, students will acquire a entire life cycle from ge gulation of different dev	rmination to reproduct	tion. The module wil	l discuss the molecu	ılar determi-
Intend	ed lear	ning outcomes				
nisms bryonic ty of de	underly axes. evelopn	evelopmental biological ing pattern formation, n 6. Physiological aspects nental biological proces	norphogenesis and or of the developmenta ses: regulation by end	ganogenesis in plan l processes in plants logenous and enviro	ts. 5. Establishment s that were discusse	of plant em-
Course	S (type, r	number of weekly contact hours,	, language — if other than Ger	man)		
V (1) +	Ü (3)					
module is written	s creditab examiı	s essment (type, scope, langu le for bonus) nation (approx. 60 minu		examination offered — if no	ot every semester, informat	ion on whether
credita Allocat						
Additio	nal inf	ormation				
Auunu						
Workla						
	au		_			
120 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	mmes)		
§61 N	lr. 5					
Module	e appea	urs in				
Bachel	or's de	gree (1 major) Biology (2	2015)			
		gree (1 major) Mathema	-			
		gree (1 major) Computat		015)		
		gree (1 major, 1 minor) E				
		gree (1 major) Biology (2				
	Bachelor's degree (1 major) Biology (2021)					
		gree (1 major, 1 minor) B				
		gree (1 major, 1 minor) B				
Bachel	or's de	gree (1 major) Biology (2	2022)			
3achelor's	with 1 maj	jor Mathematics (2015)	-	e generated 18-Apr-2025 • e	-	page 128 / 40
			data record B	achelor (180 ECTS) Mathema	tik - 2015	



Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 129 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Plant a	nd Ani	mal Ecology			07-3A30EK0-152-m	01
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS		od of grading	Only after succ. com	pl. of module(s)		
6		rical grade				
Duratio		Module level	Other prerequisites			
1 semester undergraduate						
Conten						
and bic as on th fundam re the f	This module will provide students with an overview of the interactions of plants and animals with their abiotic and biotic environments. The module will focus on the functional adaptation to environmental conditions as well as on the structure and dynamics of populations, communities and ecosystems. Students will be introduced to fundamental model concepts of ecology, will become familiar with examples of research findings and will acqui- re the fundamental knowledge necessary to develop an understanding of current ecological problems.					itions as well roduced to d will acqui-
Intende	ed lear	ning outcomes				
portant	abioti vironn	amiliar with the fundam c and biotic factors that nent. In addition, they u ues.	influence the distribut	tion and frequency o	of occurrence of orga	nisms in
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
V (2) +	Ü (2)		_			
		Sessment (type, scope, langu le for bonus)	age — if other than German, o	examination offered — if no	t every semester, informati	on on whether
written credita		nation (approx. 90 minu bonus	tes)			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
180 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulatio	ns for teaching-degree progra	mmes)		
§61 N	r. 4					
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Biology (2	2015)			
		gree (1 major) Geograph	• -			
		gree (1 major) Computer	-			
		gree (1 major) Mathema	-	,		
		gree (1 major) Computat		015)		
		gree (1 major, 1 minor) E		Dialogy (as 1)		
		mination for the teachir		ыоюду (2015)		
	Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Computer Science (2017)					
		gree (1 major) Computer				
Duchen		Siec (I major) computer	2019)			
Bachelor's	with 1 ma	jor Mathematics (2015)	-	• generated 18-Apr-2025 • e	-	page 130 / 406

Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 131 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
Genes,	Molec	ules, Technologies	07-3A3GEMT-152-m01			
Module coordinator A				Module offered by		
Dean of Studies Biologie (Biology)			Faculty of Biology			
ECTS	Methe	od of grading	Only after succ. compl. of module(s)			
6	nume	rical grade				
Duration Module level		Other prerequisites				
1 semester undergraduate						
Conten	Contents					

The module Gene, Moleküle, Technologien (Genes, Molecules, Technologies) will include lectures on the following topics: The section Spezielle Genetik (Special Genetics) will build on Einführung in die Genetik (Introduction to Genetics) and will deepen the students' knowledge of topics from the following areas: structure and evolution of the eukaryotic genome, regulatory RNA, epigenetically and evolutionarily significant genetic mechanisms. The section will also focus on methods of gene expression profiling, reverse genetics and modern methods of gene function and gene sequence analysis. In the lecture Einführung in die Bioinformatik (Introduction to Bioinformatics), students will acquire an overview of major areas in the field of bioinformatics: protein sequence and protein domain analysis, phylogeny and evolution of sequences, protein structure, RNA/DNA sequences and structures, cellular networks (regulation, metabolism) and systems biology. During the section Einführung in die Biotechnologie (Introduction to Biotechnology), students will acquire an overview of the following topics: history of biotechnology, DNA and RNA technologies, recombinant antibodies, molecular diagnostics, nanobiotechnology, biomaterials, bioprocess engineering, microbial biotechnology, transgenic animals and plants, microfluidics. The lecture Einführung in die Pharmakokinetik (Introduction to Pharmacokinetics) will provide students with an overview of the rational development of drugs and active agents. The module component will discuss an important aspect for biologists in more detail: the optimisation of the pharmacokinetics of small molecules and proteins. Pharmacokinetics describes the uptake, distribution, metabolism and elimination of a drug or xenobiotic in an organism.

Intended learning outcomes

Students possess an advanced knowledge on genome evolution and the regulation of gene expression and are familiar with current methods in genetics as well as methods for the analysis of DNA and protein databases. They have acquired an overview of both traditional and modern methods in biotechnology and are familiar with fundamental topics in biotechnology. Students have acquired an overview of the fundamental principles of the development and review of active agents in research, clinical practice and the pharmaceutical industry. They are familiar with methods and technologies in biology and are able to evaluate potential applications of these in research and industry.

Courses (type, number of weekly contact hours, language - if other than German)

V (4)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 90 minutes) creditable for bonus

Allocation of places

Additional information

Workload

180 h

Teaching cycle

Bachelor's with 1 major Mathematics (2015)

JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015 Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 133 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation			
Basic I	Basic Biochemistry				07-3A3BC-152-m01			
Modul	e coord	nator		Module offered by				
Dean o	of Studie	es Biologie (Biology)		Faculty of Biology				
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)				
4		ical grade		•				
Durati	<u> </u>	Module level	Other prerequisites					
1 seme	ester	undergraduate	Admission prerequi exercises (minimum	site to assessment: a 80%) and successf 5 to 30 hours) are p	ul completion of the	e respective		
Conter	nts							
dents will be transla formed	with dee come fa ation) ar d on sele	eper insights into the miliar with fundamen id the biochemistry of ected topics that were	moleküle (Macromolecu molecular biology and b tal principles of molecu carbohydrates, lipids, j discussed in the lectur oresis, blot, enzyme kir	iochemistry of proka lar biology (replication proteins and nucleic e. The exercise will c	aryotes and eukaryo on, transcription, sp acids. Experiments over practical aspec	tes. Students olicing and will be per-		
Intend	ed learr	ing outcomes						
Studer	nts are f	amiliar with the funda	mental principles of bio	chemistry.				
Course	es (type, n	umber of weekly contact hou	rs, language — if other than Ge	rman)				
V (1) +	Ü (2)							
		essment (type, scope, lan	guage — if other than German,	examination offered — if no	t every semester, informa	tion on whether		
		le for bonus)	3 1 1 1 1 1 1 1 1 1 1		,			
	n examir able for	nation (approx. 60 mir bonus	nutes)					
Alloca	tion of p	laces						
Additio	onal info	ormation						
Workle	oad							
120 h								
	ing cycl	9						
	. , .							
Referre	ed to in	LPOI (examination regulat	tions for teaching-degree progra	mmes)				
Module appears in								
			(2015)					
Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015)								
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)								
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)								
Bachelor's degree (1 major) Biology (2017)								
Bache	Bachelor's degree (1 major) Biology (2021)							
	ioi s ueg	gree (1 major) biology	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)					
Bache								
Bache Bache Bache	lor's deg lor's deg	gree (1 major, 1 minor) gree (1 major, 1 minor)	Biology (Minor, 2020) Biology (Minor, 2021)					
Bache Bache Bache	lor's deg lor's deg	gree (1 major, 1 minor)	Biology (Minor, 2020) Biology (Minor, 2021)					
Bache Bache Bache Bache	lor's deg lor's deg lor's deg	gree (1 major, 1 minor) gree (1 major, 1 minor)	Biology (Minor, 2020) Biology (Minor, 2021) (2022)	• generated 18-Apr-2025 • e	xam, reg.	page 134 / 406		



Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 135 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules Mathematics/Quantitative Biology

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 136 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module	Module title				Abbreviation	
Mathe	matical	Biology and Biostatis	tics		07-M-BST-152-m01	
Module coordinator				Module offered by		
		hair of Bioinformatics		Faculty of Biology		
ECTS		od of grading	Only after succ. con			
4	·	rical grade				
		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate	l			
		aringinlag of the most i	important mathematica	l and statistical mat	hads in hislagy	
			important mathematica		nous in biology.	
		ning outcomes				
			ental skills in the evalu atical description of bio		, the interpretation	of readings
			s, language — if other than Ger	- ,		
V (2) +						
		occmont (if all with a fight			
		le for bonus)	guage — if other than German,	examination offered — If no	it every semester, informat	ion on whether
	examir ble for l	nation (approx. 60 min bonus	utes)			
	ion of p					
Additio	nalinf	ormation				
Auuitio						
Worklo						
120 h						
Teachi	ng cycl	9				
Referre	ed to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)		
Module	e appea	rs in				
	-	gree (1 major) Biochem				
	-	gree (1 major) Biology (
		gree (1 major) Compute				
	-	gree (1 major) Mathem	-	``		
	-		ational Mathematics (20	015)		
	-	gree (1 major, 1 minor)				
Bachelor's degree (1 major) Biology (2017)						
Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Computer Science (2017)						
Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019)						
Bachelor's degree (1 major) Biology (2021)						
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)						
	-	gree (1 major, 1 minor)				
	-		er Science und Sustaina	ability (2021)		
	-		•			
Bachelor's degree (1 major) Biochemistry (2022)						
Bachelor's degree (1 major) Biology (2022) achelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 137 / 406						

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 138 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules General Biology IV

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 139 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
The Flora of Germany					07-4A4FLO-152-m01	
Module	Module coordinator			Module offered by		
holder (gy	of the (Chair of Ecophysiology an	d Vegetation Ecolo-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
7	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	following subjects: Economics) Bachelo tik (Business Inform	Wirtschaftswissensc or's (BSc with 180 EC ation Systems) Bach smathematik (Mathe	are not open for students of the haft (Business Management and TS credits), Wirtschaftsinforma- nelor's (BSc with 180 ECTS cre- ematics for Economics) Bache-	
Conten	ts					
plants. nomic i dents w learn ho minolog Würzbu will be using fi tion-rel den of t identifie Intende Studen flowerin	Studer mporta vill praco ow to ic gy. The org. Stu introdu feld gui evant of the Uni cation ed lear ts have ng plan	nts will acquire an overvie ance. Using a field guide, ctise identifying freshly-g dentify major morphologi module will also include idents will become familia ides and identification ke characteristics will also be versity of Würzburg with skills. hing outcomes e acquired knowledge and its. They are familiar with	ew of major indigeno the course will demo athered plants using cal plant characterist field trips to typical ar with the common as species-specific eys on site. Habitat ec e discussed. The mod its outdoor facilities	us plant families as onstrate how dichoto dichotomous keys. I tics and will become habitats in the Botar as well as scientific r characteristics of the cological, geobotanic dule will also include and greenhouses to ecology, systematic	ogy of indigenous flowering well as their ecological and eco- mous keys are used, and stu- Identifying plants, students will familiar with the respective ter- nical Garden and the vicinity of names of the plants found and ese plants. Students will practise cal, climatic as well as conserva- e sessions at the Botanical Gar- help students acquire species s and taxonomy of indigenous I know how to use Floras and set	
_		erbaria.				
V (1) + Ü		$\mathbf{F}(2, \mathbf{r})$	anguage — If other than Ger	man)		
Methoo module is	d of ass creditab	sessment (type, scope, langua ₎ le for bonus)			t every semester, information on whether	
1:1	ment o	ffered: Once a year, sum	·	itification assignmer	nt (approx. 45 minutes), weighted	
Allocation of places						
180 places. Students applying after not having successfully completed assessment in the past two semesters will be given preferential consideration. The remaining places will be allocated by lot. A waiting list will be maintained and places re-allocated by lot as they become available. Places on all courses of the module with a restricted number of places will be allocated in the same procedure.						
Additio	nal inf	ormation				
Worklo	ad					
210 h						

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015)

Bachelor's degree (1 major) Geography (2015)

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Computational Mathematics (2015)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)

Bachelor's degree (1 major) Biology (2017)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 141 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation
The Fau	una of G	Germany		07-4A4FAU-152-m01	
Module	Module coordinator			Module offered by	
holder	of the C	Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
7	·	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	(minimum 80%) and exercises (minimum	d completion of exer 80%) and successf	regular attendance of field trips cises. Regular attendance of ul completion of the respective rerequisite for admission to as-
Conten	ts				
They wi identify specific solidat and be	ill acqu /ing spe c habita e the ki havioui	ire a fundamental knowle ecies, using specimens o ats or lifestyles. Exercises nowledge and skills they ral biology.	edge of the systemat f animals. Selection in a variety of habita	ics and taxonomy of of specimens will be ats will provide stude	to be found in Central Europe. these animals and will practise taxon-specific and will represent ents with an opportunity to con- pecimens including their ecology
Intende	ed learr	ning outcomes			
of the i Central of spec	ndigen Europe ies, stu	ous fauna (vertebrates, in ean habitats as well as th	nvertebrates) and use leir faunas and phene the biology and eco	e identification keys. ology. On the basis o logy of these species	classify selected representatives . They are familiar with selected of the morphology and habitats s as well as, where applicable, to
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	rman)	
V (1) +	Ü (2) +	E (2.5)			
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written 1:1	examir	nation (approx. 45 minute	es) and practical iden	tification assignmer	nt (approx. 45 minutes), weighted
Assess credita		ffered: Once a year, sumı bonus	mer semester		
Allocat	ion of p	olaces			
Allocation of places 180 places. Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential con- sideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be alloca- ted to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a mi- nimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathema- tik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as po- tentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uni- form regulation for the courses of one module component. In this case, places on all courses of a module com- ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already ha- ve successfully completed at least one other module component of the respective module will be given preferen- tial consideration. A waiting list will be maintained and places re-allocated as they become available.					

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 142 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to their third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

210 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 143 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules Special Biosciences I

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 144 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Neurobiology 1					07-4S1NVO1-152-m01	
Module coordinator Module offered by						
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade		-		
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts					
		and methods in molecula ehaviour and endogenou		ogenetic model syst	em Drosophila and humans)	
Intende	ed leari	ning outcomes				
		e acquired an advanced k nethods in neurobiology.	nowledge of the neu	robiology of a model	l organism and are able to apply	
Courses	S (type, n	number of weekly contact hours, la	anguage — if other than Ger	man)		
Ü (4) + :						
Method	l of ass	sessment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
 b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course. creditable for bonus 						
Allocati	ion of p	olaces				
Student siderati ted to s nimum 60 ECTS tik (Mat tentially the nun there be form reg ponent ve succ tial con	the nu ts of th ion. Sh tudent of one S credit themat y to stu nber of e, with gulatio that ar essfull sideral	e Bachelor's degree subj ould the module be used s of the Bachelor's degre place in total) will be allo ts and to students of the ics), each with 180 ECTS idents of other 'importing applications, the remain in one module componer n for the courses of one r re concerned will be alloc y completed at least one	ect Biologie (Biology) in other subjects, th e subject Biologie (B ocated to students of Bachelor's degree su credits, as part of the g' subjects). Should th ing places will be all nt, several courses wi nodule component. I ated in the same pro other module compo) with 180 ECTS cred ere will be two quota iology) with 180 ECTS the Bachelor's degre bjects Computationa application-oriente he number of places ocated to applicants th a restricted numb n this case, places o cedure. In this proce onent of the respective	es will be allocated as follows: its will be given preferential con- as: 95% of places will be alloca- S credits and 5% of places (a mi- ee subject Biologie (Biology) with al Mathematics and Mathema- d subject Biology (as well as po- available in one quota exceed from the other quota. Should ber of places, there will be a uni- on all courses of a module com- edure, applicants who already ha- ve module will be given preferen- ble.	
Selection mic ach ve achion in the s	on proc nievem eved an ubject	ess group 1 (95%): Place ents. For this purpose, ap nd their average grade of of Biologie (Biology) (exc	s will primarily be all pplicants will be rank all assessments take luding Chemie (Chen	ocated according to ed according to the r en during their studio nistry), Physik (Physi	the applicants' previous acade- number of ECTS credits they ha- es or of all module components ics), Mathematik (Mathematics)) anked, firstly, according to their	

average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according

to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 2022) Bachelor's degree (1 major) Biology (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 146 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Integra	tive Be	ehavioral Biology 1			07-4S1NVO2-152-m01	
Module	e coord	inator		Module offered by		
holder of the Chair of Behavioral Physiology and Sociobio logy				Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites	S		
1 semes	ster	undergraduate				
Conten	ts					
sing of	olfacto		inisation of behaviou		oment, perception and proces- behaviour, reproductive beha-	
Intende	ed lear	ning outcomes				
		e acquired an advanced k current studies on releva		a of behavioural biol	ogy and are able to deliver pre-	
Courses	S (type, 1	number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (2) + 9	S (2)					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
 c) oral e d) oral e e) prese f) praction not excent 	examir examir entatio ical ex eed a ts will	maximum of 4 hours). be informed about the m	3 candidates (approx tes) or pprox. 2 hours; time t	. 20 minutes per car o complete will vary	according to subject area but wil	
Allocati	ion of	places				
Student siderati ted to s nimum 60 ECTS tik (Mat tentially the num there be form reg ponent	the nuts of the ion. Should be of one S credi themat y to stu nber of e, with gulatic that a cessful	the Bachelor's degree subj bould the module be used as of the Bachelor's degree place in total) will be alloc ts and to students of the trics), each with 180 ECTS udents of other 'importing f applications, the remain in one module component on for the courses of one of the concerned will be alloc by completed at least one	ect Biologie (Biology I in other subjects, the se subject Biologie (B bocated to students of Bachelor's degree su credits, as part of the g' subjects). Should the ning places will be all nt, several courses w module component.) with 180 ECTS creates intere will be two quot iology) with 180 ECT f the Bachelor's degree bjects Computation e application-orientes he number of places ocated to applicants ith a restricted number of this case, places of ocedure. In this process	es will be allocated as follows: lits will be given preferential con- as: 95% of places will be alloca- 'S credits and 5% of places (a mi- ree subject Biologie (Biology) with al Mathematics and Mathema- ed subject Biology (as well as po- s available in one quota exceed a from the other quota. Should ber of places, there will be a uni- on all courses of a module com- edure, applicants who already ha- ive module will be given preferen-	
A waitir Selectic mic ach	ng list v on proe nievem	will be maintained and pl cess group 1 (95%): Place ents. For this purpose, ap	es will primarily be all oplicants will be rank	ocated according to ed according to the	ble. the applicants' previous acade- number of ECTS credits they ha- es or of all module components	

mic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have ve achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics))

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	data record Bachelor (180 ECTS) Mathematik - 2015	

at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 148 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Aodule coordination older of the C CTS Method numerination puration semester ontents Aorphology, and ntended learn tudents are all rthropods to e ourses (type, nu	hair of Animal Ecology a d of grading ical grade Module level undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod	Only after succ. com Other prerequisites 	Module offered by Faculty of Biology apl. of module(s)	07-4S1NVO3-152-m01
older of the C CTS Methor numeri Puration semester ontents Norphology, an itudents are al rthropods to e ourses (type, nu	hair of Animal Ecology a d of grading ical grade Module level undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod	Only after succ. com Other prerequisites 	Faculty of Biology	
CTS Method numeri puration semester ontents Aorphology, an ntended learn itudents are al rthropods to e	d of grading ical grade Module level undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod	Only after succ. com Other prerequisites 	, .	
numeri ouration semester ontents Norphology, an ntended learn tudents are al rthropods to e ourses (type, nu	ical grade Module level undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod	 Other prerequisites 	ipl. of module(s)	
ouration semester ontents Morphology, an ntended learn itudents are al rthropods to e ourses (type, nu	Module level undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod			
semester ontents Aorphology, an ntended learn tudents are a rthropods to e ourses (type, nu	undergraduate natomy, phylogeny and e ing outcomes ble to explain arthropod			
ontents Aorphology, ar ntended learn itudents are al rthropods to e ourses (type, nu	natomy, phylogeny and e ing outcomes ble to explain arthropod	 ecology of arthropods		
Norphology, an ntended learn tudents are al rthropods to e ourses (type, nu	ing outcomes ble to explain arthropod	ecology of arthropods		
ntended learn tudents are al rthropods to e ourses (type, nu	ing outcomes ble to explain arthropod	ecology of arthropods		
tudents are al rthropods to e ourses (type, nu	ble to explain arthropod		5.	
rthropods to e				
		radiations in a functi	ional context as well	as to explain the importance of
	umber of weekly contact hours, la	anguage — if other than Ger	man)	
(1) + Ü (5)				
odule is creditable	e for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
erm paper (ap reditable for b	prox. 5 to 10 pages) ponus			
llocation of p	laces			
ed to students imum of one p to ECTS credits (Mathematic entially to stud- ne number of nere be, within form regulation onent that are e successfully al considerati waiting list w felection proce nic achieveme e achieved an n the subject of t the time of a verage grade to their total nu- vill be calculat mong applica e by lot.	s of the Bachelor's degre place in total) will be allo s and to students of the cs), each with 180 ECTS dents of other 'importing applications, the remain n one module componer n for the courses of one r e concerned will be alloc v completed at least one ion. vill be maintained and pl ess group 1 (95%): Place ents. For this purpose, ap of Biologie (Biology) (exc upplication. This will be c weighted according to th umber of ECTS credits ac ted as the sum of these t ints with the same rankin ess group 2 (5%): Places	e subject Biologie (B boated to students of Bachelor's degree su credits, as part of the s' subjects). Should the ing places will be all int, several courses wi nodule component. I ated in the same pro other module component aces re-allocated as s will primarily be all oplicants will be rank all assessments take cluding Chemie (Chem done as follows: First ne number of ECTS cr hieved (quantitative two rankings, and pla ng, places will be allocated acc	iology) with 180 ECT the Bachelor's degre bjects Computationa application-oriente he number of places ocated to applicants th a restricted numb n this case, places o cedure. In this proce onent of the respective they become availab ocated according to the during their studie nistry), Physik (Physis , applicants will be ra- edits (qualitative ran ranking). The applica- to according to the ranking to the followi	as: 95% of places will be alloca- S credits and 5% of places (a mi- ee subject Biologie (Biology) with al Mathematics and Mathema- d subject Biology (as well as po- available in one quota exceed from the other quota. Should er of places, there will be a uni- n all courses of a module com- edure, applicants who already ha ve module will be given preferen ele. the applicants' previous acade- number of ECTS credits they ha- es or of all module components ics), Mathematik (Mathematics)) anked, firstly, according to their eking) and, secondly, according ants' position in a third ranking I according to this third ranking. he qualitative ranking or otherwite and a second of the faculty of Biology;

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of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015)

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Computational Mathematics (2015)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)

Bachelor's degree (1 major) Biology (2017)

Bachelor's degree (1 major) Biology (2021)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)

Bachelor's degree (1 major) Biology (2022)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 150 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Biology and Ecology of Arthropods					07-4S1NVO5-152-m01	
Module coordinator Module offered by						
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology		
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						
More in	-depth	discussion of the structuna nanagement.	ure and dynamics of h	numan and animal p	opulations; regulation of popula-	
Intende	ed lear	ning outcomes				
Studen	ts are a	able to interpret the struc			etapopulations on the basis of quantitative analysis to these.	
Courses	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
Ü (4) +	S (1)					
		s essment (type, scope, langua; ile for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
 b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete will vary according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course. creditable for bonus 						
Allocat	ion of p	olaces				
Studen siderati ted to s nimum 60 ECTS tik (Mat tentially the num there b form rep ponent ve succ tial con	the nut ts of th ion. Sh tudent of one S credit themat y to stu nber of e, with gulatio that an essfull siderat	the Bachelor's degree subj ould the module be used as of the Bachelor's degree place in total) will be alloc ts and to students of the tics), each with 180 ECTS adents of other 'importing applications, the remain in one module componer on for the courses of one r fe concerned will be alloc by completed at least one tion.	ect Biologie (Biology) in other subjects, th e subject Biologie (B ocated to students of Bachelor's degree su credits, as part of the g' subjects). Should th ing places will be all nt, several courses wi nodule component. I ated in the same pro other module compo) with 180 ECTS cred ere will be two quota iology) with 180 ECTS the Bachelor's degre bjects Computationa application-oriente he number of places ocated to applicants th a restricted numb n this case, places o cedure. In this proce onent of the respective	es will be allocated as follows: its will be given preferential con- as: 95% of places will be alloca- S credits and 5% of places (a mi- ee subject Biologie (Biology) with al Mathematics and Mathema- d subject Biology (as well as po- available in one quota exceed from the other quota. Should her of places, there will be a uni- on all courses of a module com- edure, applicants who already ha- ve module will be given preferen-	
Selection mic ach ve achio in the s	on proc nievem eved a ubject	ents. For this purpose, ap nd their average grade of of Biologie (Biology) (exc	s will primarily be all pplicants will be rank all assessments take luding Chemie (Chen	ocated according to ed according to the r en during their studio nistry), Physik (Physi	the applicants' previous acade- number of ECTS credits they ha- es or of all module components ics), Mathematik (Mathematics)) anked, firstly, according to their	

average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according

to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 152 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation
Basics	in Ligh	it- and Electron-Micro	oscopy		07-4S1MZ1-152-m01
Modul	e coord	inator		Module offered by	<u>.</u>
head o	of the D	epartment of Electron	microscopy	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts		```		
Funda	mental	principles of confoca	l laser scanning microsco	opy and electron mic	roscopy.
Intend	ed lear	ning outcomes			
Studer	nts have	e acquired theoretica	l knowledge and practica	Il skills in the area of	f light and electron microscopy.
Course	es (type, i	number of weekly contact ho	ours, language — if other than Ge	rman)	
V (1) +	Ü (5)				
		s essment (type, scope, la ble for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether
	n exami able for	nation (approx. 30 to bonus	60 minutes)		
Alloca	tion of	places			
Studer siderat ted to nimum 60 ECT tik (Ma tential the nu	d the nu nts of th tion. Sh student n of one TS credi athemat ly to stu mber of	the Bachelor's degree tould the module be ut the sof the Bachelor's d place in total) will be ts and to students of tics), each with 180 E udents of other 'impo f applications, the rer	subject Biologie (Biology used in other subjects, th egree subject Biologie (B e allocated to students of the Bachelor's degree su CTS credits, as part of the rting' subjects). Should t naining places will be all) with 180 ECTS cred here will be two quot biology) with 180 ECT f the Bachelor's degr ubjects Computation e application-oriente he number of places located to applicants	es will be allocated as follows: lits will be given preferential con- as: 95% of places will be alloca- S credits and 5% of places (a mi- ree subject Biologie (Biology) with al Mathematics and Mathema- ed subject Biology (as well as po- s available in one quota exceed s from the other quota. Should ber of places, there will be a uni-

form regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in the same procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration.

A waiting list will be maintained and places re-allocated as they become available.

Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to the sthird ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 153 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (1 major) Biology (2022)
exchange program Biosciences (2022)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 154 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation
Analysis of Chromosomes					07-4S1MZ2-152-m01
Module	coord	inator		Module offered by	
head of	the De	epartment of Electronmic	roscopy	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Content	ts				
Overvie	w of th	e structure of chromosor	nes of somatic and m	neiotic cells.	
Intende	d learı	ning outcomes			
Students are able to analyse chromosomal structures.					
Courses (type, number of weekly contact hours, language — if other than German)					
V (1) + Ü (5)					
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
written examination (approx. 30 to 60 minutes) creditable for bonus					
Allocation of places					

18 places.

Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential consideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in the same procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration.

A waiting list will be maintained and places re-allocated as they become available.

Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to the sthird ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 155 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 156 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation
Methods in Biotechnology					07-4S1AMB-152-m01
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Module			d Dia altraita	Module offered by	
		Chair of Biotechnology ar		Faculty of Biology	
ECTS		od of grading	Only after succ. com	ipi. of module(s)	
5 Duratio		rical grade Module level	 Other prerequisites		
1 semes		undergraduate			
Conten		undergraduate	<u> </u>		
technol lysis of scence	logy an biolog spectr	d biomedicine and the u ical matter on the molect oscopy, electron microsc	nderlying physical pr ular and cellular level	inciples. It will discu . These methods inc	trument-based methods in bio- iss modern methods for the ana- clude light microscopy, fluore- netry and microfluidics.
		ning outcomes			
		gain an overview of key n ill learn to decide what m			ctive advantages and disadvan- particular issue.
	,	number of weekly contact hours, l	a		
V (2) + 2				-	
		Sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
·		le for bonus)			
written credital		nation (approx. 30 to 60 I bonus	minutes)		
Allocat	ion of j	olaces			
Allocation of places 25 places. Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential con- sideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be alloca- ted to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a mi- nimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathema- tik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as po- tentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uni- form regulation for the courses of one module component. In this case, places on all courses of a module com- ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already ha- ve successfully completed at least one other module component of the respective module will be given preferen- tial consideration.					
A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous acade- mic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they ha- ve achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to the indicative ranking or otherwi-					

se by lot.

Bachelor's with 1 major Mathematics (2015)

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015)
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Nanostructure Technology (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major) Biology (2017)
Bachelor's degree (1 major) Nanostructure Technology (2020)
Bachelor's degree (1 major) Biology (2021)
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
Bachelor's degree (1 major) Quantum Technology (2021)
Bachelor's degree (1 major) Biology (2022)
exchange program Biosciences (2022)
Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 158 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation		
Aspects of Molecular Biotechnology 07-4S1MOLB-			07-4S1MOLB-152-m01		
Module coordinator				Module offered by	
holder	of the (Chair of Biotechnology ar	d Biophysics	Faculty of Biology	
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				
mes, pr sor des	roducti ign, dr	on of biomolecules, mole	ecular biology, recom	binant DNA technolo	nobilisation of cells and enzy- ogy, protein engineering, biosen- ibodies, hybridoma technology,
Intende	ed lear	ning outcomes			
ges and Studen dently r	d disad ts will review	vantages. They will learn acquire a knowledge of fu	to decide what meth undamental methods lition, they will becon	od is most suitable f in biotechnology the ne acquainted with -	ogy and their respective advanta- for addressing a particular issue. at will enable them to indepen- or, where necessary, will be able
Courses	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) + 3	S (2)				
module is	creditab	le for bonus)		examination offered — if no	t every semester, information on whether
written credital		nation (approx. 30 to 60 i bonus	minutes)		
Allocat	ion of p	olaces			
25 places. Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential con- sideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be alloca- ted to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a mi- nimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathema- tik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as po- tentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uni- form regulation for the courses of one module component. In this case, places on all courses of a module com- ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already ha- ve successfully completed at least one other module component of the respective module will be given preferen- tial consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous acade- mic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they ha-					
selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous acade- mic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they ha- ve achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking.					

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 159 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

	Bachelor's degree (1 major) Biology (2015)
	Bachelor's degree (1 major) Mathematics (2015)
	Bachelor's degree (1 major) Nanostructure Technology (2015)
	Bachelor's degree (1 major) Computational Mathematics (2015)
	Master's degree (1 major) Functional Materials (2016)
	Bachelor's degree (1 major) Biology (2017)
	Bachelor's degree (1 major) Nanostructure Technology (2020)
	Bachelor's degree (1 major) Biology (2021)
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021)
	Bachelor's degree (1 major) Quantum Technology (2021)
	Bachelor's degree (1 major) Biology (2022)
	Master's degree (1 major) Functional Materials (2022)
	exchange program Biosciences (2022)
	Bachelor's degree (1 major) Mathematics (2023)
	Master's degree (1 major) Functional Materials (2025)
ľ	

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 160 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation	
Special Bio	pinformatics 1			07-4S1MZ6-152-m01
Module coordinator			Module offered by	
holder of t	he Chair of Bioinformatics	-	Faculty of Biology	
	ethod of grading	Only after succ. com	pl. of module(s)	
	merical grade			
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Fundamen damental tic reconst	principles of evolutionary bio			ics (methods and markers), fun- structure prediction, phylogene-
· · · · · · · · · · · · · · · · · · ·		databasos for soquor	nco analysis PNA str	ructure prediction and phyloge-
netic recor		ualabases for sequer	ice analysis, kiva sli	ucture prediction and phyloge-
Courses (ty	pe, number of weekly contact hours, l	anguage — if other than Ger	man)	
V (1) + Ü (5)			
	assessment (type, scope, langua litable for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	x. 10 to 20 pages) of assessment: German or Ei for bonus	nglish		
Allocation	of places			
Allocation of places 20 places. Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential con- sideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be alloca- ted to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a mi- nimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathema- tik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (a swell as po- tentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uni- form regulation for the courses of one module component. In this case, places on all courses of a module com- ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already ha- ve successfully completed at least one other module component of the respective module will be given preferen- tial consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous acade- mic achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstl				

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major, 1 minor) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Biology (2022) exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 162 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Specifi	ic Meth	ods in Proteinbiochemi	stry and Cell Biology		07-4S1MZ8-152-m01
Module	e coord	inator		Module offered by	<u> </u>
holder of the Chair of Cell Biology and Developmental Bio- logy			Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
5		rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conten	nts		-		
practic separa with im of prote micros nopus Xenopu (GFP) fu dies by Intende Studen be add	al exan tion by munob eins by copy - v embryc us emb usion p / immun ed learn nts will ressed	nples, this course will a one- and two-dimensic olots - immunoprecipita immunofluorescence n whole-mount immunolo o - whole-mount in situ ryo - investigation of the rotein in human cells a nodiffusion (Ouchterlor hing outcomes be familiar with the met with these methods.	cquaint students with onal gel electrophoresis tion - overlay techniqu nicroscopy - preparing calisation for the analy hybridisation for the analy hybridisation for the analy hybridisation for the analy ter transfection with a ny test). Basic experime thods discussed in cla	the following metho s - identification of p es or pull-down exp cultivated cells and ysis of the expressionalysis of the expressin a transport of the expressionalysis of the	discuss these techniques. U ds: - cell fractionation - prote proteins and protein complex eriment - intracellular localis tissues for immunofluoresce in pattern of a protein in the 2 sion pattern of an mRNA in the ells: expression of a fluoresc nination of the subclass of ar blogy.
	-	number of weekly contact hours	s, language — if other than Ge	rman)	
V (1) +	Ü (5)				
			uage — if other than German,	examination offered — if no	ot every semester, information on whe
a) writt b) log (c) oral d) oral e) pres f) pract not exc Studen	en exa (approx examin examir entatio tical exa	naximum of 4 hours). be informed about the r	each (approx. 30 minu o 3 candidates (approx outes) or approx. 2 hours; time t	. 20 minutes per car o complete will vary	according to subject area bu
Allocat	tion of p	olaces			
Studen siderat ted to s	l the nu its of th tion. Sh student	e Bachelor's degree su ould the module be use s of the Bachelor's deg	bject Biologie (Biology ed in other subjects, th ree subject Biologie (B) with 180 ECTS cred ere will be two quot iology) with 180 ECT	es will be allocated as follow lits will be given preferential as: 95% of places will be allo 'S credits and 5% of places (ree subject Biologie (Biology)
60 ECT tik (Ma tentiall the nur there b	themat ly to stu mber of pe, with	ics), each with 180 ECT idents of other 'importi applications, the rema in one module compon	e Bachelor's degree su S credits, as part of the ng' subjects). Should t ining places will be all ent, several courses w	e application-oriente he number of places ocated to applicants ith a restricted numb	al Mathematics and Mathem ed subject Biology (as well as available in one quota exce s from the other quota. Shou per of places, there will be a on all courses of a module co

ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration.

A waiting list will be maintained and places re-allocated as they become available.

Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major) Biology (2022)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 164 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation
Method	Methods in Plant Ecophysiology				07-4S1PS2-152-m01
Module	coord	inator		Module offered by	
holder	of the O	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
		riments to introduce stuc perimental findings in a co			lant ecophysiology as well as dis-
Intende	ed learn	ning outcomes			
		ble to use current metho in a scientific context.	ds in plant ecophysi	ology as well as to de	ocument experimental findings
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (4) + 9	S (1)				
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
Log (ap credital		o to 20 pages) bonus			
Allocati	ion of p	olaces			
Allocation of places 15 places. Should the number of applications exceed the number of available places, places will be allocated as follows: Students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits will be given preferential con- sideration. Should the module be used in other subjects, there will be two quotas: 95% of places will be alloca- ted to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a mi- nimum of one place in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathema- tik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as po- tentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uni- form regulation for the courses of one module component. In this case, places on all courses of a module com- ponent that are concerned will be allocated in the same procedure. In this procedure, applicants who already ha- ve successfully completed at least one other module component of the respective module will be given preferen-					
tial consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous acade- mic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they ha- ve achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwi- se by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of pla-					

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 %

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 165 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Biology (2015)

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Computational Mathematics (2015)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)

Bachelor's degree (1 major) Biology (2017)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 166 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Pharmaceutical Drugs in Plants				07-4S1PS3-152-m01	
Module coordinator				Module offered by	
		Chair of Pharmaceutical B	Biology	Faculty of Biology	
ECTS		od of grading	Only after succ. com	·	
5		rical grade		<u></u>	
Duratio		Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts	0	<u> </u>		
cals as	well as		harmacy. Microscopi	c and phytochemical	al plants and phytopharmaceuti- l analyses will be performed and ed.
Intende	ed lear	ning outcomes			
		e acquired a specialist kn s on the requirements and			l plants and phytopharmaceuti- eia.
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (4) +	S (1)				
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
d) oral e) pres f) pract not exc	examir entatio ical exa eed a r ts will	naximum of 4 hours). be informed about the mo	3 candidates (approx tes) or pprox. 2 hours; time to	. 20 minutes per can o complete will vary	according to subject area but will
Allocat					
Studen siderat ted to s nimum 60 ECT tik (Ma' tentiall the nur there b form re ponent ve succ tial con	the nut ts of th ion. Sh student of one S credit themat y to stunber of e, with gulatio that an cessfull siderat	e Bachelor's degree subj ould the module be used s of the Bachelor's degre place in total) will be allo ts and to students of the ics), each with 180 ECTS idents of other 'importing applications, the remain in one module componer n for the courses of one r e concerned will be alloc y completed at least one tion.	ect Biologie (Biology I in other subjects, the subject Biologie (B ocated to students of Bachelor's degree su credits, as part of the g' subjects). Should the ing places will be all nt, several courses wi module component. I tated in the same pro other module compo) with 180 ECTS cred ere will be two quota iology) with 180 ECT the Bachelor's degr bjects Computation e application-oriente he number of places ocated to applicants th a restricted numb n this case, places of cedure. In this proce onent of the respecti	es will be allocated as follows: lits will be given preferential con- as: 95% of places will be alloca- 'S credits and 5% of places (a mi- ree subject Biologie (Biology) with al Mathematics and Mathema- ed subject Biology (as well as po- s available in one quota exceed a from the other quota. Should ber of places, there will be a uni- on all courses of a module com- edure, applicants who already ha- ve module will be given preferen-
Selection mic ach ve achi	on proc nievem eved a	ents. For this purpose, ap nd their average grade of	s will primarily be all oplicants will be rank all assessments take	ocated according to ed according to the en during their studi	ble. the applicants' previous acade- number of ECTS credits they ha- es or of all module components ics), Mathematik (Mathematics))

at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their

average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot.

Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50 % of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25 % of places): lottery.

Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

Additional information

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Workload

150 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major, 1 minor) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 168 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	(· · · · · · · · · · · · · · · · · · ·

Module	e title				Abbreviation	
Labora	tory Pra	actical Course I			07-S1-LP1-152-m01	
Module coordinator				Module offered by		
		ioCareers		Faculty of Biology		
ECTS	· · · · · ·	od of grading	Only after succ. com	ipt. of module(s)		
5	ı	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Please consult with	course advisory serv	vice in advance.	
Conten	ts		-			
		coursed is offered by an titution.	institution that is par	t of the University. C	ontents to be deter	mined by the
Intende	ed learr	ning outcomes				
Studen	ts have	e developed skills which	qualify them to work	in their profession.		
		umber of weekly contact hours, I	· · ·	•		
P (5)				•		
		t in: German and/or Engl				
		essment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, informa	tion on whether
		le for bonus)	• • • •			
		mination (approx. 45 to 6 . 10 to 20 pages) or	o minutes) or			
		ation of one candidate e	ach (approx, 30 minu	tes) or		
		ation in groups of up to			ididate) or	
		n (approx. 20 to 30 minu			,	
		amination (on average ap	oprox. 2 hours; time t	o complete will vary	according to subjec	t area but wil:
		naximum of 4 hours).				
		be informed about the m	ethod and length of t	he assessment prior	to the course.	
credita						
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	9				
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	irs in				
Bachel	or's de	gree (1 major) Biology (20	015)			
Bachel	or's deg	gree (1 major) Mathemati	ics (2015)			
Bachel	or's de	gree (1 major) Computati	onal Mathematics (20	015)		
		gree (1 major, 1 minor) Bi				
		gree (1 major) Biology (20				
		gree (1 major) Biology (20				
		gree (1 major, 1 minor) Bi				
		gree (1 major, 1 minor) Bi				
		gree (1 major) Biology (20	022)			
Dealert		or Mathematics (2015)	18.81113.87**	• generated 18-Apr-2025 • e		page 169 / 406



Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 170 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title			-	Abbreviation	
Excursi	ion I				07-S1-Ex1-152-m01	
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate	Please consult with	course advisory serv	vice in advance.	
Conten	Contents					
Conten	ts of th	e field trip to be deterr	nined by the respective	e institution.		
Intende	ed learı	ning outcomes				
			h qualify them to work	in their profession.		
			rs, language — if other than Ge			
E (2)		,	<u> </u>			
	e taugh	t in: German and/or Er	ıglish			
		sessment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		mination (approx. 45 to	 60 minutes) or			
		. 10 to 20 pages) or				
			e each (approx. 30 minu			
			o 3 candidates (approx	. 20 minutes per can	ididate) or	
		n (approx. 20 to 30 mi amination (on average	approx. 2 hours; time t	o complete will vary	according to subject	t area but will
		maximum of 4 hours).				
			method and length of t	he assessment prior	to the course.	
credita						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ng cycl	е				
Referre	ed to in	LPO I (examination regulation	ions for teaching-degree progra	ammes)		
Module	e appea	urs in				
Bachel	or's de	gree (1 major) Biology	(2015)			
	Bachelor's degree (1 major) Mathematics (2015)					
Bachelor's degree (1 major) Computational Mathematics (2015)						
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)					
		gree (1 major) Biology				
		gree (1 major) Biology				
		gree (1 major, 1 minor) gree (1 major, 1 minor)				
		gree (1 major, 1 minor) gree (1 major) Biology (
Bachel	5, 5 uc	Bree (I major) Diotogy	(=~~~)			
Bachelor's	with 1 maj	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 171 / 406



Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 172 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Interdisciplinary Project I			07-S1-IP1-152-m01			
Module coordinator			Module offered by			
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	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	Please consult with	course advisory serv	vice in advance.	
Conten	ts					
Conten	ts of th	e project to be determi	ined by the competent	coordinators; conter	nts will vary accordin	g to topic.
Intende	ed learı	ning outcomes				
		-	h qualify them to work	in their profession.		
			s, language — if other than Ger	•		
R (5)	- (-))	······, ······				
-	e taugh	t in: German and/or En	glish			
		essment (type, scope, lang le for bonus)	guage — if other than German, o	examination offered — if no	t every semester, informat	ion on whether
		mination (approx. 45 to	o 60 minutes) or			
		. 10 to 20 pages) or				
			each (approx. 30 minu			
		iation in groups of up t n (approx. 20 to 30 mii	o 3 candidates (approx	. 20 minutes per can	ididate) or	
			approx. 2 hours; time t	o complete will varv	according to subject	t area but will
		naximum of 4 hours).				
			method and length of t	he assessment prior	to the course.	
credita						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)		
Module	e appea	ars in				
Bachelor's degree (1 major) Biology (2015)						
Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2015)						
	Bachelor's degree (1 major) Biology (2017)					
	Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2020)					
		gree (1 major, 1 minor) gree (1 major, 1 minor)				
				ability (2021)		
Bachelor's degree (1 major) Computer Science und Sustainability (2021)						
Bachelor's	with 1 maj	or Mathematics (2015)		• generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 173 / 406



Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 174 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Modules Special Biosciences II

(ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 175 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
External Practical Course 07-5EP-152-m01						
Module coordinator				Module offered by		
Coordir	nator Bi	oCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com			
10	numei	rical grade		-		
Duratio	- r	Module level	Other prerequisites			
1 seme	ster	undergraduate		course advisory serv	vice in advance.	
Conten		andergradate				
Studen	ts will d	complete a placement aed by the respective i	at an authority, a non-u nstitution.	niversity research in	stitution or a busine	ss. Contents
Intende	ed learr	ning outcomes				
		amiliar with the struct o work in their profess	ures of external instituti ion.	ons and businesses	and have developed	d skills which
Course	S (type, n	umber of weekly contact hou	s, language — if other than Ger	man)		
P (1) Module	e taugh	t in: German and/or Er	glish			
Method	d of ass	essment (type, scope, lan	guage — if other than German, e	examination offered — if no	t every semester, informati	on on whether
module is	creditab	le for bonus)				
c) oral d d) oral e) prese f) pract not exc Studen Langua credita	examin examin entatio ical exa eed a n ts will b ge of a ble for	ation in groups of up t n (approx. 20 to 30 mi amination (on average naximum of 4 hours). De informed about the ssessment: German ar bonus	approx. 2 hours; time to method and length of t	. 20 minutes per can o complete will vary	according to subject	: area but will
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
300 h						
Teachi	ıg cyclo	9				
Referre	d to in	LPO I (examination regulat	ons for teaching-degree progra	mmes)		
Module appears in						
Bachelor's degree (1 major) Biology (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major) Biology (2022) exchange program Biosciences (2022) Bachelor's with 1 major Mathematics (2015) Bachelor's with 1 major Mathematics (2015) MU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015						

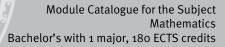


Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 177 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Excursion II 07-S2-EX2-152-m01						
Module coordinator			Module offered by			
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade		· · · · · · · · · · · · · · · · · · ·		
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate		course advisory serv	vice in advance.	
Conten						
		e field trip to be detern	nined by the respective	institution.		
		ning outcomes	<u></u>			
		e developed skills whic	 h qualify them to work	in their profession		
	S (type, r	number of weekly contact hour	, language — If other than Ge	man)		
E (8) Module	e taugh	t in: German and/or En	glish			
		Sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
		mination (approx. 45 to	60 minutes) or			
		. 10 to 20 pages) or				
		ation of one candidate				
		nation in groups of up t		. 20 minutes per can	ididate) or	
		n (approx. 20 to 30 min		o complete will your	according to subject	t araa hutuuill
		amination (on average naximum of 4 hours).	approx. 2 nours; time t	o complete will vary	according to subject	. area but will
		be informed about the	method and length of t	he assessment prior	to the course.	
		ssessment: German an	_	,		
credita	ble for	bonus				
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
Module	e appea	ars in				
		gree (1 major) Biology (2015)			
		gree (1 major) Mathema				
		gree (1 major) Computa		015)		
Bachel	or's de	gree (1 major, 1 minor)	Biology (Minor, 2015)			
Bachel	or's de	gree (1 major) Biology (2017)			
Bachelor's degree (1 major) Biology (2021)						
		gree (1 major, 1 minor)	•,			
		gree (1 major, 1 minor)				
		gree (1 major) Biology (-			
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 178 / 406



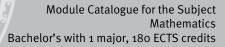


exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 179 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Interdisciplinary Project II 07-S2-IP2-152-m01						
Module coordinator			Module offered by			
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10		rical grade				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate		course advisory serv	vice in advance.	
Conten		undergraduate				
		a project to be determ	ined by the competent	coordinators, contor	ts will yany accordin	a to topic
			ined by the competent	coordinators, conter		
		ning outcomes		• • • •		
		•	h qualify them to work	•		
	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
R (8) Module	e taugh	t in: German and/or Er	glish			
		Sessment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
			(a minutas) ar			
		mination (approx. 45 to . 10 to 20 pages) or) 60 minutes) or			
			each (approx. 30 minu	ites) or		
d) oral	examir	nation in groups of up t	o 3 candidates (approx		ididate) or	
		n (approx. 20 to 30 mi				
			approx. 2 hours; time t	o complete will vary	according to subject	area but will
		maximum of 4 hours).	method and length of t	he assessment prior	to the course	
		ssessment: German ar	_	ne assessment phot	to the course.	
credita			, 0			
Allocat	ion of j	olaces				
Additio	onal inf	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	e				
	-					
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Biology	(2015)			
Bachel	or's de	gree (1 major) Mathem	atics (2015)			
Bachelor's degree (1 major) Computational Mathematics (2015)						
		gree (1 major, 1 minor)				
		gree (1 major) Biology				
Bachelor's degree (1 major) Biology (2021)						
		gree (1 major, 1 minor)				
		gree (1 major, 1 minor)				
		gree (1 major) Biology		a gonorated 49 Areases		n200 190 / 100
Dachelors	with 1 IIIa	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 180 / 406





exchange program Biosciences (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 181 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation							
Laborat	tory Pr	actical Course II			07-S2-LP2-152-m01		
Module	e coord	inator		Module offered by	odule offered by		
Coordir	nator B	ioCareers		Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme:	ster	undergraduate	Please consult with	course advisory serv	vice in advance.		
Conten							
This practical coursed is offered by an institution that is part of the University. Contents to be determined by the respective institution.							
Intende	ed lear	ning outcomes					
		amiliar with the structurofession.	res of internal instituti	ons and have develo	pped skills which qua	alify them to	
Course	S (type, r	umber of weekly contact hour	s, language — if other than Gei	rman)			
P (8) Module	e taugh	t in: German and/or En	glish				
Method	d of ass	sessment (type, scope, lang	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether	
		le for bonus)					
b) log (a c) oral a d) oral a e) prese f) pract not exc Studen	approx examin examir entatio ical exa eed a r ts will ge of a	nination (approx. 45 to . 10 to 20 pages) or ation of one candidate hation in groups of up to n (approx. 20 to 30 min amination (on average naximum of 4 hours). be informed about the ssessment: German an bonus	each (approx. 30 minu o 3 candidates (approx nutes) or approx. 2 hours; time t method and length of t	. 20 minutes per can o complete will vary	according to subject	area but will	
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
300 h							
Teachir	ng cycl	6					
	<u> </u>						
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)			
			_	-			
Module	appea	ars in					
		gree (1 major) Biology (2015)				
	Bachelor's degree (1 major) Mathematics (2015)						
Bachel	or's de	gree (1 major) Computa	tional Mathematics (20	015)			
		gree (1 major, 1 minor)					
		gree (1 major) Biology (
		gree (1 major) Biology (
		gree (1 major, 1 minor)	= 7				
Bachelor's	with 1 ma	or Mathematics (2015)	-	• generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 182 / 406	



Bachelor's degree (1 major, 1 minor) Biology (Minor, 2021) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 183 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Focus Chemistry (30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 184 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Compulsory (21 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 185 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Experir	mental	Chemistry			o8-AC-ExChem-152-mo1	
A4 - J. 1						
Module				Module offered by		
lecture Chemis		ure "Experimentalche	emie" (Experimental	Institute of Inorgan	ic Chemistry	
ECTS	Metho	od of grading	Only after succ. co	mpl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisite	S		
1 seme	ster	undergraduate				
Conten			I			
al and	particle	level, metals, acid-b			Emphasis is placed on the m quilibrium and complexome	
		ning outcomes				
cient in actions	basic using	models of the structu typical chemical form	re of matter and can de	escribe them properly. pret them by identifyi	ormation from it. He/she is p He/she can depict chemica ng the type of reaction.	
V (4)	- (()pe)					
		accoment (
		le for bonus)	nguage — if other than Germar	i, examination offered — if no	ot every semester, information on whe	ether
		nation (approx. 90 mi	nutos)			
		ssessment: German a				
Allocat						
Allocal		naces				
 A J J						
Additio		ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachir	ng cycle	e: every year, winter s	emester			
Referre	ed to in	LPO I (examination regula	tions for teaching-degree prog	rammes)		
Module	e appea	rs in				
		gree (1 major) Biology	(2011)			
		gree (1 major) Psychol				
		gree (1 major, 1 minor				
Bachel	or's deg	gree (1 major, 1 minor)) Political and Social S	tudies (2013)		
Bachel	or's de	gree (1 major, 1 minor)) Russian Language an	d Culture (2008)		
		gree (2 majors) Specia	-			
-		logiae Catholic Theol				
			h and American Studie	-		
			an Language and Litera	ture (2013)		
		gree (1 major) Geogra				
		gree (1 major) Mathen	_			
касреі	or's deg	gree (1 major) Musico	logy (2015)			
	or's day	tron (1 major) Dhucico	(2015)			
	or's de	gree (1 major) Physics	(2015)			

Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 187 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 189 / 406

data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) 2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025)

UNIVERSITÄT

WÜRZBURG

Module	e title				Abbreviation	
Organi	c Chem	istry 1			08-0C1-152-m01	
Module	e coord	inator		Module offered by		
holder	of the l	Professorship of Organi	c Chemistry	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on in the second	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
the bor organic	This module provides students with an overview of the fundamental principles of organic chemistry. It examines the bonding situation of carbon and introduces students to the nomenclature of simple and moderately complex organic compounds. The module also discusses the fundamental principles of stereochemistry, substitution, addition and elimination reactions as well as synthesis planning.					
Intende	ed lear	ning outcomes				
of nom lecules that pu synthes	Students know important categories of substances in organic chemistry. They are able to use different systems of nomenclature to determine simple substance names. Students are able to analyse the stereochemistry of molecules. They are able to describe and formulate some of the most important reactions in organic chemistry. For that purpose, they can analyse and categorise the characteristic reaction conditions and can use them for simple syntheses.					
		number of weekly contact hours	, language — if other than Ge	rman)		
V (3) +	Ü (1)					
		sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
b) oral c) oral d) log (e) pres	examir examin approx entatio	mination (approx. 90 to nation of one candidate ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German an	each (20 to 30 minute 3 candidates (approx	-	didate) or	
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Worklo	ad					
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Teachi	ng cycl	e				
Teachir	ng cycle	e: every year, summer s	emester			
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
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Module	e appea	ars in				
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		jor Mathematics (2015)		g • generated 18-Apr-2025 • e	xam. reg.	page 191 / 406
		,		achelor (180 ECTS) Mathema	-	

Bachelor's degree (2 majors) Special Education (2009) Magister Theologiae Catholic Theology (2013) Bachelor's degree (2 majors) English and American Studies (2009) Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Biochemistry (2015) Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

page 192 / 406

Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 194 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module ti	itle			Abbreviation	
Principles	s of quantum mechanics and	d spectroscopy for enន្	gineering students	08-PC-QMS-FU-152-	·m01
Module c	oordinator		Module offered by		
	f lecture "Grundlagen der Qı kopie" (Principles of Quantu copy)		Institute of Physica	l and Theoretical Che	emistry
ECTS N	Nethod of grading	Only after succ. con	ter succ. compl. of module(s)		
8 n	umerical grade				
Duration	Module level	Other prerequisites	;		
1 semeste	er undergraduate				
Contents					
the modu UV-VIS sp	of the following models: pa le focuses on vibrational sp pectroscopy. In addition, the fferential equations, Fourier /e.	ectroscopy, angular m module discusses lin	omentum quantisati ear operators, eigenv	on, microwave spect value problems, mat	troscopy and rix represen-
Intended	learning outcomes				
to describ	are able to explain key mod oe different spectroscopic m mechanics.				
Courses (i	type, number of weekly contact hours	, language — if other than Ge	rman)		
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Allocatio	n of places				
Additiona	al information				
Workload					
240 h					
Teaching	cycle				
Referred	to in LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Module a	ppears in				
Bachelor' Bachelor'	s degree (1 major) Mathema s degree (1 major) Computa s degree (1 major) Functiona s degree (1 major) Functiona	tional Mathematics (2 al Materials (2015)	015)		
Bachelor's wit	h 1 major Mathematics (2015)		g • generated 18-Apr-2025 • e	-	page 196 / 406
		data record E	Bachelor (180 ECTS) Mathema	tik - 2015	



Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Functional Materials (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 197 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Quantu	Quantum Chemistry				08-TC-152-m01	
	Madula anadimetan					
	Module coordinator			Module offered by		
lecture	r of lect	ture "Quantenchemie"		· · · · ·	l and Theoretical Ch	emistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
spin, th	ie Paul	rovides students with d i principle, Slater deterr ed states, the Born-Opp	ninants, the Hartree-Fo	ock method, correlat	ion energy, configur	
Intende	ed leari	ning outcomes				
Studen	ts are a	able to describe excited	states of molecules w	ith the help of key co	oncepts and models	•
Course	S (type, n	umber of weekly contact hours	language — if other than Ger	man)		
V (2) +	Ü (1)					
		s essment (type, scope, langu le for bonus)	age — if other than German, e	examination offered — if no	t every semester, informat	ion on whether
d) log (e) pres	approx entatio ge of a	ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German and bonus				
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§ 22 § 22 § 22	Nr. 2 f)					
Module		irs in				
		gree (1 major) Chemistry	(2015)			
		gree (1 major) Mathema	-			
Bachel	or's de	gree (1 major) Computat	ional Mathematics (20	015)		
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		ning degree Gymnasium		• generated 18-Apr-2025 • e		0 16) page 198 / 406
				achelor (180 ECTS) Mathema		, , , , , , , , , , , , , , , , , , , ,

Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Mathematics (2023) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Functional Materials (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 199 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Compulsory Electives

(9 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 200 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title			-	Abbreviation	
Organi	c Chem	istry 2 and analytical m	ethods in organic che	emistry	08-0C2-152-m01	
Module	e coord	inator		Module offered by	<u>I</u>	
holder	of the (Chair of Physically Orgar	ic Chemistry	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. con	compl. of module(s)		
9	nume	rical grade		-		
Duratio		Module level	Other prerequisites	i		
1 seme	ster	undergraduate				
Conten	ts	5	1			
the exa on read well as py, mas	ample o ctions to rearrar ss spec	ntroduces students to th f carbonyl compounds, o complex reaction mec ngement. In addition, it trometry and NMR spec	it extends the studen hanisms. The course a ntroduces students to	ts' knowledge of sub also focuses on oxid	stitution, eliminatio ation and reduction	n and additi- reactions as
Intende	ed lear	ning outcomes				
bonyl c they ca unknow to draw	compou in plan wn reac v conclu	e become familiar with the nds. They are able to de and formulate multi-sta tions. Students are able usions regarding the mo	escribe specific reactions ge syntheses with cor to describe importan lecular structure.	ons of carbonyls and nplex reaction mech t spectroscopic met	aromatics. For that anisms and can trar	purpose, sfer them to
Course	S (type, r	umber of weekly contact hours,	language — if other than Ge	rman)		
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		for Mathematics (2015)	JMU Würzburg	g • generated 18-Apr-2025 • 6	-	page 201 / 406
			data record B	achelor (180 ECTS) Mathema	tik - 2015	

Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Functional Materials (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 202 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

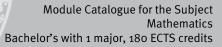
Thermo	e title				Abbreviation	
	odynam	ics, Kinetics, Electroc	hemistry		08-PC-TKE-152-m0	91
Module	e coord	inator		Module offered by	Module offered by	
lecture		ure "Thermodynamik,	Kinetik, Elektroche-		l and Theoretical Cł	nemistry
mie" ECTS						
9	1	rical grade				
Duratio	<u> </u>	Module level	Other prerequisite	S		
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Intende	ed learr	ning outcomes				
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 Additio 270 h Teachin § 62 N Module Bachel	ng cyclo ed to in Nr. 1 e appea or's deg	prmation e LPOI (examination regulat rs in gree (1 major) Biochen	nistry (2015)	rammes)		
 Additio 270 h Teachin § 62 N Module Bachel Bachel	ed to in Nr. 1 e appea or's deg	prmation e LPO I (examination regulat rs in gree (1 major) Biochen gree (1 major) Chemist	nistry (2015) ry (2015)	rammes)		
 Additio 270 h Teachin § 62 N Module Bachel Bachel Bachel Bachel	ad ng cyclo ed to in Vr. 1 e appea or's deg or's deg or's deg	e LPO I (examination regulat rs in gree (1 major) Biochen gree (1 major) Chemist gree (1 major) Mathem	nistry (2015) ry (2015) atics (2015)			
 Additio 270 h Teachin § 62 N Module Bachel Bachel Bachel Bachel Bachel	ad ng cyclo ed to in Nr. 1 e appea or's deg or's deg or's deg or's deg	e LPO I (examination regulat rs in gree (1 major) Biochen gree (1 major) Chemist gree (1 major) Mathem gree (1 major) Comput	nistry (2015) ry (2015) atics (2015) ational Mathematics (:			
 Additio 270 h Teachin § 62 N Module Bachel Bachel Bachel Bachel Bachel Bachel	ng cyclo ed to in Nr. 1 e appea or's deg or's deg or's deg or's deg or's deg	Exportation Export (examination regulat Export (examination regulat Export (a major) Biochen Gree (1 major) Biochen Gree (1 major) Comput Gree (1 major) Comput Gree (1 major) Functior	nistry (2015) ry (2015) atics (2015) ational Mathematics (:	2015)		
 Additio 270 h Teachin Referren § 62 N Module Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ed to in ad ed to in vr. 1 e appea or's deg or's deg or's deg or's deg or's deg or's deg or's deg or's deg or's deg	Exportation Export (examination regulat Export (examination regulat Export (a major) Biochen Gree (1 major) Biochen Gree (1 major) Comput Gree (1 major) Comput Gree (1 major) Functior	nistry (2015) ry (2015) atics (2015) ational Mathematics (: nal Materials (2015) ing degree Gymnasiun	2015)		
 Additio 270 h Teachin Referre § 62 I N Module Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ad ng cycle ed to in dr. 1 e appea or's deg or's deg or's deg or's deg or's deg ate exa or's deg or's deg	E E E E E E E E E E E E E E	nistry (2015) ry (2015) atics (2015) ational Mathematics (: nal Materials (2015) ing degree Gymnasiun nistry (2017)	2015)		

Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Functional Materials (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 204 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation	
Symm	etry, ch	emical bonding and lig	ght		o8-PC-SBL-152-mc)1
Modul	e coord	inator		Module offered by	e offered by	
		ture "Symmetrie, chem	ische Bindung and	Institute of Physical	l and Theoretical Ch	nemistry
ECTS						
9		rical grade				
Durati		Module level	Other prerequisites	25		
2 seme		undergraduate				
Conter		understudutte				
tions, qualita studer	point gr ative MO ats the o	oups, character tables) theory and gives an i opportunity to analyse	n to the symmetry of m and selection rules. Th ntroduction to the func the interactions betwe	ne module deals with lamentals of computa	the chemical bond ational chemistry. If	l based on th t also gives
		ning outcomes				
			nmetry of molecules. Th cule from the symmetr		onclusions about t	ne spectros-
· ·		•	rs, language — if other than Ge	•		
	_	V (2) + Ü (2)	-,	/		
			guage — if other than German,	examination offered — if no	t every semester informa	ition on whether
		le for bonus)				
e) pres Langua	sentatio	. 20 pages) or n (approx. 30 minutes) ssessment: German ar				
Alloca		JIACES				
Additi	onal inf	ormation				
Worklo	nad					
270 h						
	ng cycl	e				
Referre	ed to in	LPO I (examination regulat	ions for teaching-degree progr	ammes)		
Modul	e appea	ars in				
		gree (1 major) Biochem	nistry (2015)			
Bache	lor's de	gree (1 major) Chemist	ry (2015)			
		gree (1 major) Mathem	-	`		
		gree (1 major) Computa gree (1 major) Biochem	ational Mathematics (2 Distry (2017)	:015)		
Bachal	ioi s ue	елее и шаюн вюспеп	115LIY (2017)			
	lor's de	• • • •	rv (2017)			
Bache		gree (1 major) Chemist gree (1 major) Biochem				
Bache Bache	lor's de	gree (1 major) Chemist	nistry (2022)			
Bache Bache Bache	lor's de lor's de	gree (1 major) Chemist gree (1 major) Biochem	nistry (2022) atics (2023)	g • generated 18-Apr-2025 • e		page 205 / 400

Module	Module title				Abbreviation		
Inorgan	ic Che	mistry of the Elements			08-AS1-152-m01		
Module	coord	inator		Module offered by			
		ure "Chemie der Haupt of Main-group Element		Institute of Inorgani	ic Chemistry		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
6	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 semes	ster	undergraduate					
Conten							
This mo ses on l	This module equips students with an advanced knowledge of the periodic table and selected elements. It focu- ses on bonding conditions, trends in the periodic table and the description and structure of elements. In additi- on, it introduces students to elementary organic chemistry, coordination chemistry and complex chemistry.						
Intende	d lear	ning outcomes					
reactivi	Students are able to characterise main group elements and transition metal elements in terms of their structure, reactivity and fabrication. They are able to identify the coordination of the atoms. In addition, they have learned how to use the periodic table, an essential tool for chemists.						
Courses	5 (type, n	umber of weekly contact hours	, language — if other than Ger	rman)			
V (2) + V	/ (2)						
		s essment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	ion on whether	
b) oral e c) oral e d) log (a e) prese	examin examin approx entatio	nination (approx. 90 to ation of one candidate ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German and	each (20 to 30 minute 3 candidates (approx	-	didate) or		
Allocati	ion of p	olaces					
			_				
Additio	nal inf	ormation					
	-	2 para. 2 sentence 2 Al nnex 2 to the APOLmCh	POLmCh in conjunction	n with No. I 2nd lette	r a) of annex 1 to the	APOLmCh	
Worklo	ad						
180 h			_				
Teachin	ig cycl	e					
Referre	d to in	LPO I (examination regulatio	ns for teaching-degree progra	mmes)			
§621N	r. 1						
Module	appea	irs in					
Bachelo	or's deg	gree (1 major) Biochemi gree (1 major) Chemistry	(2015)				
		gree (1 major) Mathema gree (1 major) Computal	-	215)			
		mination for the teachir		-			
		gree (1 major) Biochemi		· ······, (-·-),			
		gree (1 major) Chemistry					
		es (Bachelor) Chemistry	-				
Bachelor's v	with 1 maj	or Mathematics (2015)	-	; • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 206 / 406	



Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Food Chemistry (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 207 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Focus Geography (30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015	page 208 / 406
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	e title				Abbreviation
Genera	ıl Physi	cal Geography: Exoge	nic Dynamics - Geo	morphology	04-Geo-PG1Ex-152-m01
Module	e coord	inator		Module offered	l by
holder	of the l	Professorship of Physic	al Geography	Institute of Geo	graphy and Geology
ECTS	Metho	od of grading	Only after succ.	. compl. of module(s)	
5		rical grade		•	
Duratio		Module level	Other prerequis	ites	
1 seme	ster	undergraduate			
Conten					
an, ma clod, fo	rin, litte old mou	oral, solution; monopro	ocessual large form as" (huge dunes), c	s, e.g. endogenous,	fluvial, glacial and periglacial, Ae tectonic forms like volcanoes, bre basins; - polyprocessual large for
Intende	ed lear	ning outcomes			
that are relief, o namics from ho	e domin climate s of the umans	nating the landscape o , soil, water, flora and natural environment a by land utilisation, set	n the Earth's surfac fauna. These are de nd its anthropogen tlements, transport	e and which are dri cisive for understar ic transformation (th routes etc.).	, i.e. the understanding of process ven by the geological factors rocks ding the structure, function and d re environment that has been sha
Course	S (type, r	number of weekly contact hour	rs, language — if other tha	ın German)	
V (3) + Module		t in: German and/or Er	nglish		
Metho	d of ass	sessment (type, scope, lang	guage — if other than Gerr	nan, examination offered	- if not every semester, information on wheth
module is	s creditab	le for bonus)			
	age of a	nation (approx. 45 min ssessment: German ar bonus			
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
 Workla	ad				
	ad				
Worklo		e			
Worklo 150 h Teachi	ng cycl		mester		
Worklo 150 h Teachin Teachin	ng cycl ng cycle	e: every year, winter se		programmes)	
Worklo 150 h Teachin Teachin Referre § 47 l N	ng cycl ng cycle ed to in Nr. 1			programmes)	
Worklo 150 h Teachin Teachin Referre § 47 N § 66 N	ng cycl ng cycle ed to in Nr. 1 Nr. 1	e: every year, winter se LPO I (examination regulat		programmes)	
Worklo 150 h Teachin Teachin Referre § 47 l N § 66 l N Module	ng cycl ng cycle ed to in Vr. 1 Vr. 1 e appea	e: every year, winter se LPO I (examination regulat	ions for teaching-degree p	programmes)	
Worklo 150 h Teachin Teachin Referre § 47 l N § 66 l N Module Bachel	ng cycl ng cycle ed to in Nr. 1 Nr. 1 e appea or's de	e: every year, winter se LPOI (examination regulat	ions for teaching-degree p hy (2015)	programmes)	
Worklo 150 h Teachin Teachin Referre § 47 l N § 66 l N Module Bachel Bachel	ng cycl ng cycle ed to in Ir. 1 Ir. 1 e appea or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp	ions for teaching-degree p hy (2015) atics (2015)		
Worklo 150 h Teachin Teachin Referre § 47 l N § 66 l N Module Bachel Bachel Bachel	ng cycl ng cycle d to in Nr. 1 Nr. 1 e appea or's de or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp gree (1 major) Mathem	ions for teaching-degree p hy (2015) atics (2015) Geography (Minor,	2015)	15)
Worklor 150 h Teachin Referrer § 47 l N § 66 l N Bachel Bachel Bachel Bachel Bachel Bachel	ng cycle ed to in Ir. 1 Ir. 1 e appea or's de or's de or's de or's de or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp gree (1 major, Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	hy (2015) atics (2015) Geography (Minor, Pre- and Protohisto Pre- and Protohisto	2015) pric Archaeology (20 pric Archaeology (Mi	nor, 2015)
Worklo 150 h Teachin Referrer § 47 I N § 66 I N Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng cycl ng cycl ed to in Ir. 1 Ir. 1 e appea or's de or's de or's de or's de or's de or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	ions for teaching-degree p hy (2015) atics (2015) Geography (Minor, Pre- and Protohisto Geography (Focus I	2015) pric Archaeology (20 pric Archaeology (Mi Physical Geography)	nor, 2015) (2015)
Worklor 150 h Teachin Teachin Referrer § 47 l N § 66 l N Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng cycl ed to in Vr. 1 Vr. 1 e appea or's de or's de or's de or's de or's de or's de or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	hy (2015) atics (2015) Geography (Minor, Pre- and Protohisto Geography (Focus I Geography (Focus I	2015) pric Archaeology (20 pric Archaeology (Mi Physical Geography) Human Geography)	nor, 2015) (2015)
Worklor 150 h Teachin Teachin Referrer § 47 l N § 66 l N Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng cycl ed to in Ir. 1 Ir. 1 e appea or's de or's de or's de or's de or's de or's de or's de or's de or's de	e: every year, winter se LPO I (examination regulat ars in gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	hy (2015) atics (2015) Geography (Minor, Pre- and Protohisto Geography (Focus I Geography (Focus I Geography (Focus I d Protohistoric Arch	2015) pric Archaeology (20 pric Archaeology (Mi Physical Geography) Human Geography)	nor, 2015) (2015) (2015)

First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Mittelschule Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Mathematics (2023)

Mouule	e title				Abbreviation	
Genera	l Physi	cal Geography: Endog	enic Dynamics - Introdu	uction to Geology	04-Geo-PG1En-152-m	101
Module	e coord	inator		Module offered by	·	
holder rials Re		,	namics and Geomate-	Institute of Geogra	ohy and Geology	
ECTS	Metho	od of grading	Only after succ. con	ompl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate				
Conten	ts					
res of in nesis, s	mporta sedime	nt rock forming, ecolog nts/ sedimentary rock	": basics of endogenou: gically important minera s, metamorphosis; geol st, distribution of miner	als, volcanism/ igne logical structures, oc	ous rocks, plutonism/	'magma ge
Intende	ed learı	ning outcomes				
The stu	dents o	dispose over basic kno	wledge of endogenous	dynamics		
Course	S (type, n	umber of weekly contact hou	rs, language — if other than Ger	rman)		
V (3) + [·] Module		t in: German and/or Er	ıglish			
		essment (type, scope, lang le for bonus)	guage — if other than German, o	examination offered — if no	ot every semester, informatio	n on whether
	ige of a	nation (approx. 45 min ssessment: German ar bonus				
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachiı	ng cycl	e				
Teachir	ng cycle	e: every year, winter se	mester			
Referre	ed to in	LPO I (examination regulat	ions for teaching-degree progra	ammes)		
§ 47 I N						
,	NI. 1					
§ 66 N		irs in				
§ 66 I N Module Bachele Bachele	e appea or's deg or's deg	gree (1 major) Geograp gree (1 major) Mathem		5)		
§ 66 I M Module Bachele Bachele Bachele	e appea or's deg or's deg or's deg	gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor)	atics (2015)	-		
§ 66 I N Module Bachele Bachele Bachele Bachele Bachele	e appea or's des or's des or's des or's des or's des	gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	atics (2015) Geography (Minor, 201 Pre- and Protohistoric A Pre- and Protohistoric A	Archaeology (2015) Archaeology (Minor,	-	
§ 66 I N Module Bachele Bachele Bachele Bachele Bachele	e appea or's deg or's deg or's deg or's deg or's deg or's deg	gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	atics (2015) Geography (Minor, 201 Pre- and Protohistoric A Pre- and Protohistoric A Geography (Focus Phys	Archaeology (2015) Archaeology (Minor, sical Geography) (20	15)	
§ 66 I N Module Bachele Bachele Bachele Bachele Bachele Bachele Bachele	e appea or's des or's des or's des or's des or's des or's des or's des	gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor)	atics (2015) Geography (Minor, 201 Pre- and Protohistoric A Pre- and Protohistoric A Geography (Focus Phys Geography (Focus Hum	Archaeology (2015) Archaeology (Minor, sical Geography) (20 aan Geography) (201	15)	
§ 66 I N Module Bachele Bachele Bachele Bachele Bachele Bachele Bachele First sta	e appea or's des or's des or's des or's des or's des or's des or's des or's des or's des or's des ate exa	gree (1 major) Geograp gree (1 major) Mathem gree (1 major, 1 minor) gree (2 majors) Pre- an mination for the teach	atics (2015) Geography (Minor, 201 Pre- and Protohistoric A Pre- and Protohistoric A Geography (Focus Phys	Archaeology (2015) Archaeology (Minor, sical Geography) (20 aan Geography) (201 blogy (2015) Geography (2015)	15)	

Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 212 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title				Abbreviation	
General Phys	ical Geography: Climate	System		04-Geo-PG1Kl-152-r	no1
Module coord	linator		Module offered by		
	Professorship of Climato	logy	Institute of Geography and Geology		
ECTS Meth	od of grading	Only after succ. com	·	,	
	rical grade		• • • •		
Duration	Module level	Other prerequisites			
1 semester	undergraduate				
Contents					
	basics of the Earth's clir energy; vertical and hor e system.				
Intended lear	ning outcomes				
The students	will gain a basic physica	l understanding of the	Earth's climate syst	em.	
Courses (type,	number of weekly contact hours,	language — if other than Ger	man)		
V (3) Module taugh	it in: German and/or Eng	lish			
module is credital	sessment (type, scope, langu ole for bonus) nation (approx. 45 minut		examination offered — if no	t every semester, informati	on on whether
	ssessment: German and				
Allocation of	places				
		_			
Additional inf	ormation				
		_			
Workload					
150 h		_			
Teaching cycl					
	e: every year, summer se				
§ 47 Nr. 1 § 66 Nr. 1	LPO I (examination regulation	is for teaching-degree progra	mmes)		
Module appea	ars in				
Bachelor's de Bachelor's de Bachelor's de Bachelor's de Bachelor's de First state exa First state exa First state exa Bachelor's de	gree (1 major) Geograph gree (1 major) Mathemat gree (1 major, 1 minor) G gree (1 major, 1 minor) P gree (1 major, 1 minor) G gree (1 major, 1 minor) G gree (2 majors) Pre- and mination for the teachin mination for the teachin mination for the teachin mination for the teachin mination for the teachin gree (2 majors) Geograp gree (1 major, 1 minor) G	ics (2015) eography (Minor, 2014 re- and Protohistoric A eography (Focus Phys eography (Focus Hum Protohistoric Archaeo g degree Grundschule g degree Realschule G g degree Gymnasium g degree Mittelschule hy (2015)	archaeology (2015) ical Geography) (201 an Geography) (2019 logy (2015) Geography (2015) Geography (2015) Geography (2015)	-	
Bachelor's with 1 ma	jor Mathematics (2015)	-	• generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 213 / 406



First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 214 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module title				Abbreviation		
Genera	al Human Geography: Introd	duction to the Geograph	of Cities, Towns	04-Geo-HG1S-152-mo	1	
and Vil						
Module coordinator			Module offered by	Module offered by		
holder of the Professorship of Geography and Regional			Institute of Geography and Geology			
Science				phy and deology		
ECTS	Method of grading	Only after succ. co	mpl. of module(s)	npl. of module(s)		
5	numerical grade					
Duratio		Other prerequisite	c			
			3			
1 seme						
Conten						
	iction to "Settlement Geogra					
	Geography of rural settlem an development, - city mode		earch, - urbanisation	, - regional urban types	, - theories	
	ed learning outcomes	ladge of Urban Carama		nhu of Dural Cattlens	<u> </u>	
	nts dispose over basic know		·	phy of Kural Settlement	5.	
	S (type, number of weekly contact h	ours, language — if other than G	erman)			
V (3)						
	e taught in: German and/or					
	d of assessment (type, scope, l	anguage — if other than German	, examination offered — if r	ot every semester, information	on whether	
	s creditable for bonus)					
	examination (approx. 45 m					
	age of assessment: German	and/or English				
Allocat	tion of places					
Additio	onal information					
Worklo	ad					
150 h						
Teachi	ng cycle					
	ng cycle: every year, winter	semester				
	ed to in LPO I (examination regu		rammes)			
§ 47 N						
§ 47 IN						
_	e appears in					
	or's degree (1 major) Biolog	τy (2011)				
	or's degree (1 major) Chemi					
	or's degree (1 major) Psych					
	or's degree (1 major, 1 minc					
	or's degree (1 major, 1 minc		udies (2013)			
	or's degree (1 major, 1 mino					
	or's degree (2 majors) Spec					
-	er Theologiae Catholic Theo					
	or's degree (2 majors) Engli		-			
	or's degree (2 majors) Gern		ture (2013)			
Pachal	or's degree (1 major) Chemi	ISTRV (2015)				
Bachel	or's degree (1 major) Geogr with 1 major Mathematics (2015)	aphy (2015)	rg • generated 18-Apr-2025 •	evam reg	oage 215 / 406	

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Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 217 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Geography (2023) First state examination for the teaching degree Realschule Geography (2023) First state examination for the teaching degree Grundschule Geography (2023) First state examination for the teaching degree Mittelschule Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 218 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

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Module	e coord	inator		Module offered by			
holder	of the F	Professorship of Econor	nic Geography	Institute of Geogra	phy and Geology		
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)			
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Bachelor's	with 1 maj	or Mathematics (2015)	JMU Würzburg	g • generated 18-Apr-2025 • (exam. reg.	page 220 / 406	
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Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Mittelschule Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 221 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

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Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Geography (2023) First state examination for the teaching degree Realschule Geography (2023) First state examination for the teaching degree Grundschule Geography (2023) First state examination for the teaching degree Mittelschule Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 223 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

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central pop sibilities a Courses (ty Module tau Method of module is crea written exa Language of Allocation Additional Uorkload 150 h Teaching of Referred to § 47 Nr. 1 § 66 Nr. 1	ulation and socio-geograp id their implementation of e, number of weekly contact hours ght in: German and/or En assessment (type, scope, lang itable for bonus) mination (approx. 45 minu f assessment: German an of places	ohical terms, scientific n issues of the Applied s, language — if other than Ge glish uage — if other than German, utes)	c approaches and theori d Population and Social erman)	ies as well as of acquire Geography.	ed pos-
V (3) Module tau Method of module is creat written exat Language of Allocation Additional 150 h Teaching of Teaching of Referred to § 47 Nr. 1 § 66 Nr. 1	ght in: German and/or En assessment (type, scope, lang itable for bonus) mination (approx. 45 minu f assessment: German an of places	glish uage — if other than German, utes)		very semester, information on v	vhether
Module tan Method of module is crea written exa Language of Allocation Additional 150 h Teaching c Teaching c Referred to § 47 Nr. 1 § 66 Nr. 1	assessment (type, scope, lang itable for bonus) mination (approx. 45 minu f assessment: German an of places	uage — if other than German, Ites)	ı, examination offered — if not ev	very semester, information on v	vhether
Method of module is creat written exat Language of Allocation Morkload 150 h Teaching of Teaching of Referred to § 47 Nr. 1 § 66 Nr. 1	assessment (type, scope, lang itable for bonus) mination (approx. 45 minu f assessment: German an of places	uage — if other than German, Ites)	ı, examination offered — if not ev	very semester, information on v	vhether
module is created written exated Language of Allocation Additional Workload 150 h Teaching of Teaching of Referred to § 47 Nr. 1 § 66 Nr. 1	^{itable for bonus)} mination (approx. 45 minι f assessment: German an of places	utes)	ı, examination offered — if not ev	very semester, information on v	vhether
Language of Allocation Additional Workload 150 h Teaching c Teaching c Referred to § 47 Nr. 1 § 66 Nr. 1	f assessment: German an of places				
Allocation Additional Workload 150 h Teaching c Teaching c Referred to § 47 Nr. 1 § 66 Nr. 1	of places	d/or English			
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 Workload 150 h Teaching c Teaching c Referred to § 47 Nr. 1 § 66 Nr. 1	information				
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Referred to § 47 Nr. 1 § 66 Nr. 1	/cle				
§ 47 Nr. 1 § 66 Nr. 1	/cle: every year, winter ser	nester			
§ 66 Nr. 1	in LPO I (examination regulation	ons for teaching-degree progr	rammes)		
Module ap					
	pears in				
Bachelor's	degree (1 major) Biology (2011)			
	degree (1 major) Chemistr				
Bachelor's	degree (1 major) Psycholo	gy (2010)			
	degree (1 major, 1 minor) l				
	degree (1 major, 1 minor)				
	degree (1 major, 1 minor)		d Culture (2008)		
	degree (2 majors) Special	-			
-	eologiae Catholic Theolog	gy (2013)			
		and American Cr. P.			
		and American Studies	-		
Bachelor's with	ucsiee (2 majors) derindi	and American Studies Language and Literat	-		

Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Mittelschule Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's with 1 major Mathematics (2015) IMII Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Geography (2023) First state examination for the teaching degree Realschule Geography (2023) First state examination for the teaching degree Grundschule Geography (2023) First state examination for the teaching degree Mittelschule Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 228 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Module Catalogue for the Subject Mathematics Bachelor's with 1 major, 180 ECTS credits

UNIVERSITÄT WÜRZBURG

Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 229 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Cartog	raphy a	and Geoinformation			04-Geo-KART-152-m01	
Module	e coord	inator		Module offered by	1	
holder Science		Professorship of Geogr	aphy and Regional	Institute of Geogra	phy and Geology	
ECTS		od of grading	Only after succ. co	ompl. of module(s)		
5	nume	rical grade		· · · · · · · · · · · · · · · · · · ·		
Duratio	on in the second	Module level	Other prerequisite	es		
1 seme	ster	undergraduate				
Conten	ts					
					vith focus on map projection tea geographic information.	
Intende	ed lear	ning outcomes				
on.				· · · ·	matic dealing with geoinformati	
	-	number of weekly contact hour	rs, language — if other than (German)		
V (2) + Module		t in: German and/or Er	nglish			
		sessment (type, scope, lang le for bonus)	guage — if other than Germa	n, examination offered — if no	ot every semester, information on whether	
	ige of a	nation (approx. 75 min ssessment: German ar bonus				
Allocat	ion of j	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cvcl	e				
	0 .)	-				
Referre	d to in	LPO I (examination regulation	ions for teaching-degree pro	grammes)		
§ 66 N				· · · /		
Module		urs in				
		gree (1 major) Geograp	hy (2015)			
		gree (1 major) Mathem				
		gree (1 major, 1 minor)		015)		
Bachel	or's de	gree (1 major, 1 minor)	Pre- and Protohistorio	c Archaeology (2015)		
		gree (1 major, 1 minor)			-	
		gree (1 major, 1 minor)			-	
		gree (1 major, 1 minor)			5)	
		gree (2 majors) Pre- an				
		mination for the teach		m Geography (2015)		
		gree (2 majors) Geogra		(2016)		
	-	ee (1 major) General ar gree (1 major, 1 minor)		(2010)		
DUCITE	or 5 ue		3005raphy (201/)			

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Master's degree (1 major) General and Applied Linguistics (2022) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 231 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Introdu	uction t	o Geographical Remote	e Sensing		04-Geo-FERNE-152	-m01
Module	e coord	inator		Module offere	d by	
holder	of the F	Professorship of Remote	e Sensing	Institute of Ge	ography and Geology	
ECTS	1	od of grading		. compl. of module(s)		
5	1	rical grade				
Duratio		Module level	Other prerequisi	tes		
1 seme		undergraduate				
Conten		understaddate	l			
sensing - surface ant ten and acc	g / phys ces, obj nperatu tive sys	sical principles (energy ects under investigatio re, emissivity / detecto	and radiation, inte n: soils, vegetation ors: characterisatior al and LiDAR) / rada	ractions radiation - , water) / thermal r o of remote sensing	theoretical basics, histo atmosphere, interaction emote sensing: radiation data, platforms and sen radar interferometry / b	ns radiation n laws, radi- nsors (passive
Intend	ed learı	ning outcomes				
sphere	to the		ion and back to the		n the radiation path thro hasise essential charact	
Course	S (type, n	umber of weekly contact hours	s, language — if other tha	n German)		
V (2) +	T (2)					
Module	e taugh	t in: German and/or En	glish			
		s essment (type, scope, lang le for bonus)	uage — if other than Germ	an, examination offered	— if not every semester, informa	tion on whether
		nation (approx. 45 minu ssessment: German an				
	ble for					
Allocat	ion of p	olaces				
			_			
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree p	ogrammes)		
§ 66 N				<u> </u>		
Module		in in				
		gree (1 major) Geograph	ny (2015)			
		gree (1 major) Compute				
		gree (1 major) Mathema				
		gree (1 major, 1 minor) (2015)		
		gree (1 major, 1 minor) l		•, •		
		gree (1 major, 1 minor) I				
		gree (1 major, 1 minor) (-	
Bachel		gree (1 major, 1 minor) (Geography (Focus H	luman Geography)	(2015)	
		gree (2 majors) Pre- and or Mathematics (2015)	d Protohistoric Arch		_	page 232 / 406

First state examination for the teaching degree Gymnasium Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Geography (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) First state examination for the teaching degree Gymnasium Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

UNIVERSITÄT

WÜRZBURG

Module	e title				Abbreviation	
Applica	ations o	of Remote Sensing in Ge	ography		04-Geo-FERNA-152	-m01
Module	e coord	inator		Module offered by	<u> </u>	
		Professorship of Remote	Sensing	Institute of Geogra	hy and Geology	
ECTS		od of grading	Only after succ. con		ony and deology	
	1					
5 Duratio		rical grade Module level	 Other prerequisites			
		-	Other prerequisites			
1 seme		undergraduate				
fundan graphic topics atmosp	nental u cal data are ana oheric c	parts basic knowledge a understanding of remote a, metadata, spatial over llogue, visual image inte correction. A focus lies o ange detection. Furthern	ly sensed data as geo laying of geodata, geo rpretation, digital ima n the digital remote se	oinformation and late ographical informati oge processing (calib ensing based mappi	er geoinformation in on systems) is giver oration, transformati ng, i.e. spectral ana	ngeneral (geo- n. Following ion, filter) and lysis, classifi-
Intende	ed lear	ning outcomes				
reflect sess di	their es fferent	explain applications of e ssential characteristics. methodological approa	They summarise funda	amental aspects of (n of remote sensing	digital) image proce	essing and as-
		number of weekly contact hours,	language — if other than Ger	rman)		
V (2) + Module		t in: German and/or Eng	lish			
module is written	examiı	sessment (type, scope, langu le for bonus) nation (approx. 45 minut	tes)	examination offered — if no	ot every semester, informa	tion on whether
Langua credita		ssessment: German and bonus	l/or English			
Allocat	ion of p	olaces				
Additio	nal inf	ormation	_			
Worklo	ad					
150 h						
Teachi	ng cycl	e				
	-					
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	immes)		
Module	e appea	ars in				
		gree (1 major) Geograph	y (2015)			
		gree (1 major) Computer				
		gree (1 major) Mathemat				
		gree (1 major, 1 minor) G		-		
		gree (1 major, 1 minor) G			-	
		gree (1 major, 1 minor) G		an Geography) (201	5)	
		gree (2 majors) Geograp				
		gree (1 major, 1 minor) G gree (1 major) Computer				
		jor Mathematics (2015)		• generated 18-Apr-2025 • 6	exam. reg.	page 234 / 406
			data record B	achelor (180 ECTS) Mathema	tik - 2015	

Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Geography (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 235 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation	
Regior	nal Geog	raphy - Lecture course	21		04-Geo-RG-V1-152-m	101
Modul	e coordi	nator		Module offered by		
holder	of the P	rofessorship of Physic	al Geography	Institute of Geograp	hy and Geology	
ECTS	1	d of grading		c. compl. of module(s)		
5	1	ical grade		· · · · · · · · · · · · · · · · · · ·		
<u>)</u> Durati		Module level	Other prerequi	sites		
1 seme		undergraduate				
		undergraduate				
Conter					• • • • • • •	
				bspaces. This can be indi Europe, Alpine countries).	vidual states as well	as distinct
Intend	ed learn	ing outcomes				
issues proble with th	, particu ms and iematic	larly the partial steps: spatial interactions as emphasis.	1.Differentiation a well as 3. Synthes	Il apply general-geograph Ind characterisation of a r Sis and demonstration of	egion, 2.Emphasis or	n specific
	es (type, n	umber of weekly contact hours	s, language — if other th	an German)		
V (2) Modul	o tauaht	in: German and/or En	alich			
				·		1 .1
		e for bonus)	uage — If other than Gei	rman, examination offered — if no	t every semester, informatio	n on whether
b) oral	examin	nination (approx. 45 m ation of one candidate	each (approx. 15	-		
		ation in groups of up to ssessment: German an		prox. 15 minutes per canc	lidate)	
	tion of p					
Additid	onal info	ormation				
Auun		mation				
Worklo	had					
150 h						
-	ng cycle	•				
		· ovory voor winter cor	mostor			
	eu to in	: every year, winter ser				
		: every year, winter ser		programmes)		
§ 47 I				programmes)		
§ 47 § 66	Nr. 1	LPO I (examination regulation		programmes)		
§ 47 § 66 Modul	Nr. 1 e appea	LPO I (examination regulation r	ons for teaching-degree	programmes)		
§ 47 § 66 Modul Bache	Nr. 1 e appea lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (ons for teaching-degree	programmes)		
§ 47 § 66 Modul Bachel Bachel	Nr. 1 e appea lor's deg lor's deg	LPO I (examination regulation r	ons for teaching-degree 2011) y (2010)	programmes)		
§ 47 § 66 Modul Bachel Bachel Bachel	Nr. 1 e appea lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr	2011) y (2010) gy (2010)	programmes)		
§ 47 § 66 Modul Bache Bache Bache Bache	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo	ons for teaching-degree 2011) y (2010) gy (2010) Pedagogy (2013)			
§ 47 1 § 66 1 Bachel Bachel Bachel Bachel Bachel	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo gree (1 major, 1 minor)	ons for teaching-degree 2011) y (2010) gy (2010) Pedagogy (2013) Political and Socia	ıl Studies (2013)		
§ 47 1 § 66 1 Modul Bache Bache Bache Bache Bache Bache Bache	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo gree (1 major, 1 minor) (gree (1 major, 1 minor) (gree (1 major, 1 minor) (gree (2 majors) Special	2011) y (2010) gy (2010) Pedagogy (2013) Political and Socia Russian Language Education (2009)	ll Studies (2013) and Culture (2008)		
§ 47 1 § 66 1 Modul Bache Bache Bache Bache Bache Bache Bache Magist	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (2 majors) Special logiae Catholic Theolog	ons for teaching-degree 2011) y (2010) gy (2010) Pedagogy (2013) Political and Socia Russian Language Education (2009) gy (2013)	ll Studies (2013) and Culture (2008)		
§ 47 1 § 66 1 Modul Bache Bache Bache Bache Bache Bache Bache Magist	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo gree (1 major, 1 minor) (gree (1 major, 1 minor) (gree (1 major, 1 minor) (gree (2 majors) Special	ons for teaching-degree 2011) y (2010) gy (2010) Pedagogy (2013) Political and Socia Russian Language Education (2009) gy (2013)	ll Studies (2013) and Culture (2008)		
§ 47 1 § 66 1 Modul Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	Nr. 1 e appea lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg lor's deg	LPO I (examination regulation rs in gree (1 major) Biology (gree (1 major) Chemistr gree (1 major) Psycholo gree (1 major, 1 minor) gree (1 major, 1 minor) gree (1 major, 1 minor) gree (2 majors) Special logiae Catholic Theolog	2011) 2011) y (2010) gy (2010) Pedagogy (2013) Political and Socia Russian Language Education (2009) gy (2013) and American Stu	ll Studies (2013) and Culture (2008)	xam. reg.	page 236 / 40

Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Mittelschule Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) Russian Language and Culture (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Master's degree (1 major) Russian Language and Culture (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 238 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Geography (2023) First state examination for the teaching degree Realschule Geography (2023) First state examination for the teaching degree Grundschule Geography (2023) First state examination for the teaching degree Mittelschule Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 239 / 406

data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 240 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Region	al Geog	raphy - Lecture course	2 2		04-Geo-RG-V2	-152-m01
Module	e coordi	nator		Module offer	red by	
holder	of the P	rofessorship of Physic	al Geography		eography and Geolog	v
ECTS	1	d of grading		. compl. of module(s)		
		ical grade	Only arter Suc			
5 Duratio	<u> </u>	Module level	Other proregu	icitoc		
			Other prerequ	ISILES		
1 seme		undergraduate				
Conten						
		eral Geography" in ter due to their lay like N				as well as distine
Intend	ed learn	ing outcomes				
issues, proble with th	, particu ms and ematic e	ose over the following larly the partial steps: spatial interactions as emphasis.	1.Differentiation well as 3. Synthe	and characterisatio sis and demonstra	n of a region, 2.Emph	asis on specific
	S (type, nu	umber of weekly contact hour	s, language — if other t	han German)		
V (2) Module	e taught	in: German and/or En	glish			
Metho	d of ass	essment (type, scope, lang	uage — if other than Ge	erman, examination offere	ed — if not every semester, in	formation on whether
module is	s creditabl	e for bonus)				
Langua		ation in groups of up to seessment: German ar laces		oprox. 15 minutes p	er candidate)	
 Additio	onal info	rmation				
Worklo	ad					
150 h						
-	ng cycle					
		: every year, winter se	mester			
		.POI (examination regulati		a programmoc)		
§ 47 N				, programmes)		
§ 66 I N						
-	e appea	rs in				
		ree (1 major) Biology (2011)			
	-	ree (1 major) Chemisti				
	-	ree (1 major) Psycholo	•			
	-	ree (1 major, 1 minor)				
		ree (1 major, 1 minor)				
	-	ree (1 major, 1 minor)			3)	
	-	ree (2 majors) Special	-)		
-		ogiae Catholic Theolo				
Bachel	or's deg	ree (2 majors) English	and American St	uaies (2009)		
Rachelor's	with 1 majo	or Mathematics (2015)	JMU W	/ürzburg • generated 18-Ap	r-2025 • exam. reg.	page 241 / 40
Jucificitor 3						page 241/40

Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Chemistry (2015) Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Physical Geography) (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Geography (Focus Human Geography) (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Mittelschule Geography (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) Russian Language and Culture (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Master's degree (1 major) Russian Language and Culture (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 243 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) First state examination for the teaching degree Gymnasium Geography (2023) First state examination for the teaching degree Realschule Geography (2023) First state examination for the teaching degree Grundschule Geography (2023) First state examination for the teaching degree Mittelschule Geography (2023) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 244 / 406

data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (Minor, 2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)



Focus Computer Science

(30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 246 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation
Introduction to Programming					10-I-EinP-152-m01
Module coordinator				Module offered by	
holder	of the (Chair of Computer Scienc	e ll	Institute of Comput	er Science
ECTS		od of grading	Only after succ. com	· · · ·	
		rical grade	only arter succ. con		
5					
Duratio		Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		ntrol structures, foundat n in Java, selected topics			d topics of C, introduction to ob- :: scripting languages.
Intende	ed learr	ning outcomes			
		oindependently develop			(in particular Java, C and C++)
		umber of weekly contact hours, l			
V (2) + I		, , , , , , , , , , , , , , , , , , , ,	-		
		essment (type scope langua	ge — if other than German	examination offered — if no	t every semester, information on whether
		le for bonus)	5e – n omer man German, e	zzanination onered — if no	a every semester, information on whether
credital Allocat					
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Teachir	ng cycle	e: only in winter semester			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
§ 49 N					
§ 69 Nr. 1 b)					
Module appears in					
Bachelor's degree (1 major) Computer Science (2015)					
Bachelor's degree (1 major) Mathematics (2015)					
Bachelor's degree (1 major) Business Information Systems (2015)					
Bachelor's degree (1 major) Human-Computer Systems (2015)					
Bachelor's degree (1 major) Computational Mathematics (2015)					
Bachelor's degree (1 major) Aerospace Computer Science (2015)					
First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015)					
		mination for the teaching gree (1 major) Business li			2015)
			nonnation systems (2010)	
Bachold	nr's dag	gree (1 major) Business Iı	formation Systems (2010)	

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 247 / 406	
	data record Bachelor (180 ECTS) Mathematik - 2015		

Module title					Abbreviation		
Algorithms and data structures					10-I-ADS-152-m01		
Module coordinator				Module offered by			
Dean of Studies Informatik (Computer S			Science)	Institute of Comput	er Science		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
10	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts		•				
		alysis of algorithms, red trees, graphs, basic gra			ods, data structures,	, abstract da-	
Intende	ed lear	ning outcomes					
know tł	he basi	proficient in independer c paradigms for the des timate the runtime beha	ign of algorithms and	can implement them	n in practical program		
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)			
V (4) +	Ü (2)						
		eessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	ot every semester, informati	ion on whether	
written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). creditable for bonus							
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
			_				
Worklo	ad						
300 h							
Teachi							
		e: only in winter semest					
		LPO I (examination regulatio	ns for teaching-degree progra	immes)			
	§ 49 Nr. 1 a) § 69 Nr. 1 a)						
Module appears in							
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Human-Computer Systems (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017)							
Bachelor's	with 1 maj	or Mathematics (2015)		g ● generated 18-Apr-2025 ● e achelor (180 ECTS) Mathema	-	page 248 / 406	

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 249 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation		
Software Technology					10-l-ST-152-m01		
Module coordinator				Module offered by			
Dean of Studies Informatik (Computer		er Science)	Institute of Comput	er Science			
ECTS Method of grading			Only after succ. con	Only after succ. compl. of module(s)			
10	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts		•				
bases a	and obj	ed software developme ect-relational mapping d process, agile softwa	, foundations of web p	rogramming (HTML, 2	XML), software deve		
Intende	ed lear	ning outcomes					
The stu softwa		possess a fundamental ems.	theoretical and praction	cal knowledge on the	e design and develop	oment of	
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)			
V (4) +	Ü (2)						
Method	d of ass	sessment (type, scope, lang	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether	
module is	s creditab	le for bonus)					
written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). creditable for bonus							
Allocat	ion of j	olaces					
Additio	nal inf	ormation					
Worklo	ad						
300 h							
Teaching cycle							
Teachir	ng cycle	e: only in summer seme	ester				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)			
§ 49 Nr. 1 b) § 69 Nr. 1 b)							
Module appears in							
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Human-Computer Systems (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017)							
Bachelor's	Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 250 / 406 data record Bachelor (180 ECTS) Mathematik - 2015					page 250 / 406	

Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Module studies (Bachelor) Orientierungsstudien (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 251 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
Practical Course in Programming					10-l-PP-152-m01	
Module coordinator				Module offered by		
Dean of Studies Informatik (Computer Science			Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1-2 sem	lester	undergraduate				
Conten	ts					
The pro	gramm	ing language Java. Indep	endent creation of sr	nall to middle-sized.	, high-quality Java programs.	
		ning outcomes				
		are able to independently	develop small to mi	ddle-sized high-qua	ality lava programs	
		umber of weekly contact hours, l	•			
P (6)						
	loface	accmont (has seen has				
		le for bonus)	ge — If other than German, e	examination offered — if no	t every semester, information on whether	
lf annoı examin	unced l ation o		inning of the course,		tion may be replaced by an oral in groups of 2 candidates (ap-	
Allocati						
Additio	nal info	ormation				
Worklo	ad					
300 h						
Teachir	ng cycle	e				
Teachir	ng cycle	e: every semester				
		LPOI (examination regulations	s for teaching-degree progra	mmes)		
§ 49 Nr. 1 c) § 69 Nr. 1 d)						
Module appears in						
	Bachelor's degree (1 major) Computer Science (2015)					
Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Human-Computer Systems (2015)						
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First state examination for the teaching degree Realschule Computer Science (2015)						
First state examination for the teaching degree Gymnasium Computer Science (2015)						
Master'	Master's degree (1 major) Functional Materials (2016)					
Bachelo	or's deg	gree (1 major) Computer S	Science (2017)			
Master'	Master's degree (1 major) Functional Materials (2022)					
Master'	Master's degree (1 major) Functional Materials (2025)					

Module	title				Abbreviation	
Practica	al cour	se in software			10-I-SWP-152-m01	
Module	coord	inator		Module offered by		
		es Informatik (Computer :	Science	Institute of Comput	or Science	
ECTS		od of grading	Only after succ. com	· · · ·		
			•			
10 Duratio		successfully completed Module level	10-I-PP, 10-I-ST Other prerequisites			
					avvina d in mandula ya LADC ana	
1 seme	ster	undergraduate		-	quired in module 10-I-ADS are e is therefore highly recommen-	
Conten	ts					
cation o	of solut		ML) and milestones, u	user manual, progra	uirements specifications, specifi- mming documentation, presenta-	
Intende	ed lear	ning outcomes				
The stu small te		possess the practical skil	ls for the design, dev	velopment and exect	ution of a software project in	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
P (6)						
module is	creditab	le for bonus)			t every semester, information on whether	
		ect (Completion of a large prox. 10 minutes per grou		groups (approx. 300	hours per person) and final pre-	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachir	ng cycl	е				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
§691N	lr. 1 d)					
Module	appea	ars in				
		gree (1 major) Computer S				
Bachelor's degree (1 major) Mathematics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015) First state examination for the teaching degree Gymnasium Computer Science (2015)					
		gree (1 major) Computer !		Computer Science (2	2015)	
		gree (1 major) Computer S				
		gree (1 major) Computer S		ability (2021)		
		gree (1 major) Mathemati		· · · ·		

Module	e title				Abbreviation	
Digital computer systems 10-I-RAL-152-m01						
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites	i		
1 seme	ster	undergraduate				
Conten	ts	. –	-			
		o digital technologies, E re description language				
Intende	ed lear	ning outcomes				
ming of	f easy r	possess a knowledge of nicroprocessors as well tal systems.				
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
V (4) +	Ü (2)					
Method	d of ass	Sessment (type, scope, languole for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
examin	ation c 5 minut	by the lecturer at the be of one candidate each (a tes per candidate). bonus				
Allocat	ion of _l	places				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachir	ng cvcl	e				
	<u> </u>					
Referre	d to in	LPOI (examination regulation	ins for teaching-degree progra	ammec)		
	<u>u to m</u>					
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Compute	r Science (2015)			
		gree (1 major) Mathema	-			
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
		gree (1 major) Aerospac		2017)		
		gree (1 major) Compute				
		gree (1 major) Compute	•			
Module studies (Bachelor) Orientierungsstudien (2020)						
		hing degree Gymnasium				020)
Supple	mental	ry course MINT Teacher	Euucation PLUS, Ellie	Network Bavaria (EN	DJ (2020)	l
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e Bachelor (180 ECTS) Mathema	-	page 254 / 406

Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 255 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title				Abbreviation	
Information Transmission					10-l-lÜ-152-m01
Module	e coord	inator		Module offered by	
holder	of the C	Chair of Computer Scienc	e III	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
theory,	spectr		, modulation techniq	ue, structure of digi	d fault correction, information tal transmission systems, intro-
Intende	ed learr	ning outcomes			
		possess a technical, theo a knowledge that is nece	•	-	ucture of systems for information
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) +	Ü (2)				
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
examin	ation o 5 minut	f one candidate each (ap es per candidate).			tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
300 h					
Teachi	ng cycl	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
§ 22					
Module					
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017)					
васнеі	or's deg	gree (1 major) Computer S	Science (2017)		

Module	e title				Abbreviation	
Practical course in hardware 10-I-HWP-152-m01						
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Computer	Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		-			
	•	riments on hardware as croprocessor.	pects, for example in	communication tech	nology, robots or the	e structure of
Intende	ed lear	ning outcomes				
The stu	dents ons, to	are able to independent independently search fo				
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
P (6)						
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	ion on whether
		pletion of approx. 3 to 1 inutes per project)	o project assignments	s (approx. 250 hours	total) and presentat	ion of results
Allocat	ion of j	olaces				
Additio	nal inf	ormation				
Worklo	ad					
300 h						
Teachi	ng cycl	e				
			-			
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	immes)		
§ 22						
Module						
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)						
		gree (1 major) Aerospace	-	• generated 18-Apr-2025 • e	xam reg	page 257 / 406
Sucheitor 5	i i ina	Jo		achelor (180 ECTS) Mathema	-	Puse 23/ / 400

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Mathematics (2023) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 258 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Theoretical Informatics 10-I-TIV-152-m01						
Module	e coord	inator		Module offered by		
Dean of	f Studie	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		, decidability, countabi xt-sensitive languages,				t-free lan-
Intende	ed leari	ning outcomes				
tability,	, finite	oossess a fundamental automata, regular sets, computations, P-NP pro	generative grammars,	context-free languag		
Course	S (type, n	umber of weekly contact hours	s, language — if other than Ge	rman)		
V (4)						
		essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
lf annoi examin prox. 15	unced ation o 5 minut	nation (approx. 60 to 12 by the lecturer at the be if one candidate each (a res per candidate).	ginning of the course,			
Allocat		Jiaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ng cycl	e				
			_			
		LPO I (examination regulation	ons for teaching-degree progra	mmes)		
§491N §691N						
Module	e appea	ars in				
		gree (1 major) Compute gree (1 major) Mathema	-			
Bachel	or's deg	gree (1 major) Computa	tional Mathematics (20	015)		
		gree (1 major) Aerospac	•	-		
		mination for the teaching		•	-	
		mination for the teaching				
		ning degree Gymnasiun gree (1 major) Aerospac			ork Bavaria (ENB) (20	516)
		gree (1 major) Aerospac gree (1 major) Compute		.017)		
		gree (1 major) Compute				
		ning degree Gymnasium		ion PLUS, Elite Netwo	ork Bavaria (ENB) (20	020)
Bachelor's	with 1 maj	or Mathematics (2015)		; • generated 18-Apr-2025 • e. achelor (180 ECTS) Mathemat	-	page 259 / 406

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 260 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation		
Tutorial Theoretical Informatics				10-l-TIT-152-m01	
Module	e coord	inator		Module offered by	
Dean of	f Studie	es Informatik (Computer S	Science)	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		, decidability, countabilit xt-sensitive languages, c			/e grammars, context-free lan- NP completeness.
Intende	ed learr	ning outcomes			
tability,	, finite		enerative grammars,	context-free languag	computability, decidability, coun- ges, context-sensitive languages,
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (2)					
module is	creditab	le for bonus)			t every semester, information on whether
b) writt	en exai	of approx. 11 exercises w mination (approx. 180 to essment to be selected b	240 minutes)	nents each (50% to b	be completed correctly) or
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
§491N §691N					
Module appears in					
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017)					

Module title Abbreviation						
Logic for informatics 10-I-LOG-152-m01						
Module	e coord	inator		Module offered by		
Dean o	fStudi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		ł			
		mantics of proposition ets, syntax and semant		nd normal forms, Ho	rn formulas, SAT, res	olution, infi-
Intende	ed lear	ning outcomes				
		are proficient in the foll Horn formulas, SAT, re				
Course	S (type, r	number of weekly contact hours	s, language — if other than Ge	rman)		
V (2) +	Ü (2)					
		Sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
lf anno examin prox. 15	unced ation c 5 minut ge of a	nation (approx. 60 to 12 by the lecturer at the be of one candidate each (a res per candidate). ssessment: German an bonus	eginning of the course, approx. 20 minutes) or			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
		•				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
§ 22	Nr. 3 b)					
Module	e appea	urs in				
Module appears in Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)						
Bachelor's	with 1 ma	or Mathematics (2015)	IMU Würzburg	g•generated 18-Apr-2025•e	xam. reg.	page 262 / 406
		,		achelor (180 ECTS) Mathemat	-	,



Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Mathematics (2023) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 263 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Algorithmic Graph Theory 10-I-AGT-152-m01						
Module	e coord	inator		Module offered by		
holder	ofthe	Chair of Computer Scienc	e l	Institute of Comput	er Science	
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
colouri of grap	We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable.					the examples
Intende	ed lear	ning outcomes				
cipants	are ab	are able to model typical ble to decide which tool fr nts learn in detail how to	om the course helps	solve a given graph	problem algorithmic	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
V (2) +	Ü (2)					
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English						
credita	-					
Allocat		places				
Additio	nat inf	ormation				
 Washia						
Worklo	ad					
150 h						
Teachi	ng cycl	e				
		LPO I (examination regulation	s for teaching-degree progra	mmes)		
§ 22	_					
Module						
Bachel Bachel Bachel First sta Master Supple Bachel	or's de or's de or's de ate exa 's teacl menta or's de	gree (1 major) Computer 3 gree (1 major) Mathemati gree (1 major) Computation gree (1 major) Aerospace mination for the teaching hing degree Gymnasium ry course MINT Teacher E gree (1 major) Aerospace gree (1 major) Computer 3	cs (2015) onal Mathematics (20 Computer Science (2 g degree Gymnasium MINT Teacher Educat ducation PLUS, Elite Computer Science (2	2015) Computer Science (2 ion PLUS, Elite Netwo Network Bavaria (EN	ork Bavaria (ENB) (20	016)
		jor Mathematics (2015)	JMU Würzburg	; • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 264 / 406

Bachelor's degree (1 major) Computer Science (2019) Module studies (Bachelor) Computer Science (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 265 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Interac	Interactive Computer Graphics 10-I=ICG-152-m01					
Module coordinator			Module offered by			
holder	of the (Chair of Computer Scier	ice IX	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
cifically conterr about l jection line wil	Computer graphics studies methods for digitally synthesising and manipulating visual content. This course spe- cifically concentrates on interactive graphics with an additional focus on 3D graphics as a requirement for many contemporary as well as for novel human-computer interfaces and computer games. The course will cover topics about light and images, lighting models, data representations, mathematical formulations of movements, pro- jection as well as texturing methods. Theoretical aspects of the steps involved in ray-tracing and the raster pipe- line will be complemented by algorithmical approaches for interactive image syntheses using computer systems. Accompanying software solutions will utilise modern graphics packages and languages like OpenGL, GLSL and/					
Intende	ed lear	ning outcomes				
compu	ter grap	he course, the students bhics. They will be able s applications and to cl	to implement a promir	nent variety of these		
Course	S (type, r	umber of weekly contact hours	, language — if other than Gei	rman)		
V (2) +	Ü (2)					
		essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Focuse HCI	s availa	able for students of the	Master's programme I	nformatik (Computer	Science, 120 ECTS o	redits):
Worklo	ad					
150 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Master's degree (1 major) Computer Science (2016)						
Bachelor's	with 1 ma	or Mathematics (2015)	-	s • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 266 / 406



Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 267 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Databases 10-I-DB-152-m01						
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Informatik (Compute	r Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		1			
Relatio ment.	nal alg	ebra and complex SQL	statements; database	planning and norma	l forms; transaction	manage-
Intende	ed lear	ning outcomes				
The stu	dents	oossess knowledge abo	out database modellin	g and queries in SQL	as well as transaction	ons.
		number of weekly contact hours		· · · · · · · · · · · · · · · · · · ·		
V (2) +						
		Sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
lf anno examin prox. 19 Langua	written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h	-					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
§ 49 N § 69 N						
Module	e appea	urs in				
Bachel	or's de	gree (1 major) Compute				
Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
Bachelor's degree (1 major) Functional Materials (2015)						
First state examination for the teaching degree Realschule Computer Science (2015)						
First state examination for the teaching degree Gymnasium Computer Science (2015)						
Master's degree (1 major) Physics (2016)						
Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017)						
Баспер	or s ae	gree (1 major) Aerospac	e computer Science (2	2017)		
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 268 / 406

Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 269 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation			
Knowle	Knowledge-based Systems 10-I-WBS-152-mo1					
Module	e coord	inator		Module offered by		
holder	ofthe	Chair of Computer Scien	ce VI	Institute of Comput	er Science	
ECTS		od of grading	Only after succ. con	•		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites	;		
1 seme	ster	undergraduate				
Conten	ts		•			
		n the following areas: ki edge acquisition, learnir			ge representation, so	olving me-
Intende	ed lear	ning outcomes				
		possess theoretical and ding knowledge formali				wledge-based
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
V (2) +	Ü (2)					
		Sessment (type, scope, languole for bonus)	lage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
lf anno examin prox. 1	unced nation o 5 minut age of a	nation (approx. 60 to 12 by the lecturer at the be of one candidate each (a tes per candidate). ssessment: German and bonus	ginning of the course, approx. 20 minutes) or			
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	ammes)		
§ 22	Nr. 3 b)					
Module	e appea	ars in				
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor's degree (1 major) Business Information Systems (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017)						
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e Bachelor (180 ECTS) Mathemat	-	page 270 / 406

Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title			Abbreviation			
Data Mining 10-I-DM-152-n				10-I-DM-152-m01		
Module	e coord	inator		Module offered by		
holder	ofthe	Chair of Computer Scier	ice VI	Institute of Comput	er Science	
ECTS	Meth	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten		1	1			
model, methoc	relatio ds (clus	n the following areas: d nship to data warehous ster and association me g methods for special d	e and OLAP, data prep thods), supervised lea	processing, data visu rning (e. g. Bayes cla	alisation, unsupervi	sed learning
Intende	ed lear	ning outcomes				
ta minii the kno	ng and wledg	possess a theoretical ar machine learning. They e acquired in this cours ation of data mining alg	v are able to solve prac e and by using the KDE	tical knowledge disc	covery problems with	n the help of
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
V (2) +	Ü (2)					
		s essment (type, scope, langu ole for bonus)	uage — if other than German, e	examination offered — if no	t every semester, informati	on on whether
lf annoi examin prox. 15 Langua	unced ation o 5 minut ge of a	nation (approx. 60 to 12 by the lecturer at the be of one candidate each (a tes per candidate). ssessment: German an	ginning of the course, approx. 20 minutes) or			
credita			_			
Allocat	ion of j	places				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
§ 22						
Module appears in						
Bachelor's degree (1 major) Computer Science (2015)						
Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Business Information Systems (2015)						
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major) Aerospace Computer Science (2015)						
First state examination for the teaching degree Gymnasium Computer Science (2015)						
		gree (1 major) Business	•			
		hing degree Gymnasium				
Dachelors	with 1 ma	jor Mathematics (2015)		• generated 18-Apr-2025 • e achelor (180 ECTS) Mathema		page 272 / 406



Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major) Business Information Systems (2019) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (1 major) Business Information Systems (2021) Master's degree (1 major) Information Systems (2022) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Module	title				Abbreviation	
Object o	oriente	d Programming			10-I-00P-152-m01	
Module	coordi	nator		Module offered by	<u> </u>	
		es Informatik (Compute	r Science)	Institute of Comput	er Science	
-		d of grading	Only after succ. con	· · · ·		
		ical grade				
Duration	1	Module level	Other prerequisites			
1 semes		undergraduate				
Content						
	-	, generic programming	, meta programming, v	veb programming, te	mplates, document	manage-
Intende	d learn	ing outcomes				
	lents a	re proficient in the diff	erent paradigms of ob	ject-oriented program	nming and have exp	erience in
Courses	(type, n	umber of weekly contact hours	s, language — if other than Ge	rman)		
V (2) + Ü) (2)					
		essment (type, scope, lang e for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
prox. 15	minute ge of as	f one candidate each (a es per candidate). ssessment: German an ponus		r an oral examinatior	i in groups of 2 cand	idates (ap-
Allocatio	on of p	laces				
Addition	nal info	ormation	-			
Workloa	ıd					
150 h						
Teaching	g cycle	9				
Referred	to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
§ 22 N	r. 3 b)					
Module	appea	rs in				
Bachelo Bachelo Bachelo First stat Master's Bachelo Master's	r's deg r's deg r's deg r's deg te exar s degre s degre r's deg s teach	gree (1 major) Compute gree (1 major) Mathema gree (1 major) Business gree (1 major) Computa gree (1 major) Aerospac mination for the teachin ee (1 major) Physics (20 ee (1 major) Nanostruct gree (1 major) Business ning degree Gymnasiun y course MINT Teacher	atics (2015) Information Systems tional Mathematics (20 ee Computer Science (2 ng degree Gymnasium 016) ure Technology (2016) Information Systems n MINT Teacher Educat	015) 2015) Computer Science (: (2016) ion PLUS, Elite Netw	ork Bavaria (ENB) (2	016)
Bachelor's w	vith 1 majo	or Mathematics (2015)		g • generated 18-Apr-2025 • 6 Bachelor (180 ECTS) Mathema	-	page 274 / 406



Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 275 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation
Computational Complexity					10-I-KT-152-m01
Module	e coord	inator		Module offered by	
Dean of	fStudie	es Informatik (Computer S	Science)	Institute of Comput	er Science
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				
sumpti	on vers		terminism versus ind	eterminism, hierarch	nd time classes, memory con- nical theorems, translation me- of systems.
Intende	ed learn	ning outcomes			
classes determ	, gener inism v	al relationships between	space and time clas erarchical theorems, t	ses, memory consum	complexity measurements and nption versus computation time, , P-NP problem, completeness
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	Ü (2)				
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
lf anno examin prox. 15	unced l ation o 5 minut ge of a	f one candidate each (ap es per candidate). ssessment: German and/	inning of the course, prox. 20 minutes) or		tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
§ 22 II Nr. 3 b)					
Module appears in					
Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Computer Science (2017)					

Module tit	le	Abbreviation			
Cryptogra	phy and Data Security	10-I-KD-152-m01			
Module co	ordinator		Module offered by		
Dean of St	udies Informatik (Computer S	Science)	Institute of Comput	er Science	
ECTS M	ethod of grading	Only after succ. com	pl. of module(s)		
5 nu	imerical grade		· · · · · · · · · · · · · · · · · · ·		
Duration	Module level	Other prerequisites			
1 semester					
Contents					
Private key RSA, Diffie		ser-Micali, digital sig	nature, challenge-re	oublic key cryptography systems, sponse methods, secret sharing,	
Intended l	earning outcomes				
stems, Ver wasser-Mi		ect security, public k nge-response method	ey cryptography, RS	private key cryptography sy- A, Diffie-Hellman, Elgamal, Gold- llionaire problem, secure circuit	
Courses (ty	pe, number of weekly contact hours, l	anguage — if other than Ger	man)		
V (2) + Ü (2	2)				
	assessment (type, scope, langua; ditable for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	amination (approx. 60 to 120	minutos)			
If annound examinatio prox. 15 m	ed by the lecturer at the beg on of one candidate each (ap inutes per candidate). of assessment: German and/	inning of the course, prox. 20 minutes) or		tion may be replaced by an oral in groups of 2 candidates (ap-	
Allocation	of places				
Additional	information				
Workload					
150 h					
Teaching o	cvcle				
Referred to	o in LPO I (examination regulations	for teaching-degree progra	mmes)		
§ 22 Il Nr. 3 b)					
Module appears in					
Module appears inBachelor's degree (1 major) Computer Science (2015)Bachelor's degree (1 major) Mathematics (2015)Bachelor's degree (1 major) Computational Mathematics (2015)First state examination for the teaching degree Gymnasium Computer Science (2015)Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)Bachelor's degree (1 major) Computer Science (2017)					

Module title			Abbreviation			
3D Poi	3D Point Cloud Processing 10-l-3D-152-m01					
Module	e coord	inator		Module offered by		
holder	of the (Chair of Computer Science	ce XVII	Institute of Comput	er Science	
ECTS	Metho	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		•			
	, registi	g, Kinect and camera mo ration, features, segmen				
Intend	ed learı	ning outcomes				
munica data pr	ate with ocessi	erstand the fundamental engineers / surveyors / ng and have experienced in terms of memory requ	CV people / etc. Stuc that real application	ents are able to solv scenarios are challe	e problems of mode nging in terms of co	ern sensor
Course	S (type, n	number of weekly contact hours,	language — if other than Ger	man)		
V (2) +	Ü (2)					
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).						
credita		ssessment: German and bonus				
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	is for teaching-degree progra	mmes)		
§ 22		•		-		
Module	_	urs in				
		gree (1 major) Computer	Science (2015)			
Bachel Bachel First sta Master Supple	or's des or's des ate exa 's teach mentar	gree (1 major) Mathemat gree (1 major) Computati gree (1 major) Aerospace mination for the teachin ning degree Gymnasium y course MINT Teacher E gree (1 major) Aerospace	onal Mathematics (20 computer Science (2 g degree Gymnasium MINT Teacher Educat ducation PLUS, Elite	.015) Computer Science (2 ion PLUS, Elite Netwo Network Bavaria (ENI	ork Bavaria (ENB) (20	516)
Bachel	or's de	gree (1 major) Computer				
Bachelor's	with 1 maj	jor Mathematics (2015)		• generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	•	page 278 / 406

Bachelor's degree (1 major) Computer Science (2019)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)

Bachelor's degree (1 major) Mathematics (2023)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 279 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Operati	Operating Systems				10-l-BS-152-m01
Module	coord	inator		Module offered by	
holder	of the C	Chair of Computer Science	e ll	Institute of Comput	er Science
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				
Introduction to computer systems, development of operating systems, architecture principles, interrupt proces- sing in operating systems, processes and threads, CPU scheduling, synchronisation and communication, memo- ry management, device and file management, operating system virtualisation.					
Intende	ed learr	ning outcomes			
The stu	dents p	oossess knowledge and p	practical skills in buil	ding and using esse	ntial parts of operating systems.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	Ü (2)				
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
lf anno examin prox. 15	unced l ation o 5 minut ge of a	f one candidate each (ap es per candidate). ssessment: German and/	inning of the course, prox. 20 minutes) or		tion may be replaced by an oral in groups of 2 candidates (ap-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	9			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	rs in			
		gree (1 major) Computer S			
	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015)				
	Bachelor's degree (1 major) Aerospace Computer Science (2015)				
	Master's degree (1 major) Physics (2016)				
	-	ee (1 major) Nanostructur			
		gree (1 major) Aerospace gree (1 major) Computer S	•	017)	
Dachell	u s ue	Sice (I major) computer .			

Module	title				Abbreviation	
Compu	ter Arc	hitecture			10-I-RAK-152-m01	
Module	coord	inator		Module offered by		
Dean of	f Studi	es Informatik (Compute	er Science)	Institute of Comput	er Science	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten						
Instruct	tion se	t architectures, comma vector processors, mult		pipelining, statical a	and dynamic instruct	tion schedu-
Intende	Intended learning outcomes					
		master the most import l operating systems.	ant techniques to desi	gn fast computers as	s well as their intera	ction with
Course	S (type, r	number of weekly contact hour	s, language — if other than Ge	rman)		
V (2) +	Ü (2)					
		Sessment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
lf annoi examin prox. 15	unced ation c 5 minut ge of a	nation (approx. 60 to 12 by the lecturer at the bo of one candidate each (tes per candidate). ssessment: German an bonus	eginning of the course, approx. 20 minutes) or			
Allocat	ion of j	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir		0				
Teacini	ig cyci	c				
 Deferme	ما الم الم			<u>```</u>		
		LPO I (examination regulati	ons for teaching-degree progra	immes)		
-	lr. 1 c):	Rechnerarchitektur				
Module						
		gree (1 major) Compute				
		gree (1 major) Mathema	-	245)		
Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015)						
	First state examination for the teaching degree Gymnasium Computer Science (2015)					
	Master's degree (1 major) Physics (2016)					
Master'	Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)					
		gree (1 major) Aerospa		2017)		
		gree (1 major) Compute				
Bachelo	or's de	gree (1 major) Compute	er Science (2019)			l
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 281 / 406

Master's degree (1 major) Physics (2020)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's degree (1 major) Physics International (2020)

Bachelor's degree (1 major) Aerospace Computer Science (2020)

Bachelor's degree (1 major) Computer Science und Sustainability (2021)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023)

Bachelor's degree (1 major) Mathematics (2023)

Master's degree (1 major) Physics International (2024)

Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024)

Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

Bachelor's degree (1 major) Games Engineering (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 282 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Compu	ter Net	works and Communicati	ion Systems		10-I-RK-152-m01	
Module	e coord	inator		Module offered by		
holder	ofthe	Chair of Computer Scien	ce III	Institute of Comput	er Science	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
8	nume	rical grade				
Duratio	•	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten		1				
of com and str chies, o and ISO Mobile works.	puter n ructure dataflo D archi comm	computer and communic etworks and communica of computer networks: n w control and traffic con tecture models. Internet: unication networks: fund	ation systems: problen etwork structure, network trol, transfer network. structure and basic r	n statement and intr work access, access Communication pro nechanism, TCP/IP, I	oduction to method methods, digital tran tocols: fundamental routing, network man	architecture nsfer hierar- principles nagement.
		ning outcomes		<u> </u>		
		possess an intricate kno damental principles to ra		e of computer netwo	orks and communica	tion systems
		number of weekly contact hours,	· · ·	man)		
V (4) +		fumber of weekly contact hours,		IIIdII)		
		sessment (type, scope, langu ble for bonus)	age — If other than German,	examination offered — if no	it every semester, informati	on on whether
lf anno examin prox. 1	unced ation o 5 minu age of a	nation (approx. 60 to 120 by the lecturer at the beg of one candidate each (a tes per candidate). Issessment: German and bonus	ginning of the course, pprox. 20 minutes) or			
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
240 h		•				
Teachi	ng cycl	e	_			
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
§ 22						
Module						
		gree (1 major) Computer	Science (2015)			
Bachel Bachel	or's de or's de	gree (1 major) Mathemat gree (1 major) Computat	ics (2015) ional Mathematics (20	-		
		gree (1 major) Aerospace	•	-	2015)	
		mination for the teachin hing degree Gymnasium			-	016)
		ry course MINT Teacher E				510)
		jor Mathematics (2015)	JMU Würzburg	• generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	xam. reg.	page 283 / 406



Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Computer Science (2017)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 284 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title	,			Abbreviation
Automation and Control Technology					10-I-AR-152-m01
Module	coord	inator		Module offered by	
holder	of the C	Chair of Computer Science	e VII	Institute of Comput	er Science
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
8	numei	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
differen structur sistent	itial eq re imag control	uations, nomenclature, t es and structure image r	ransfer function, step eduction, locus curve sign through paramet	response and realises and Bode diagram er optimisation, bas	ign methods, model creation, sing of easy linear controllers, is, frequency characteristic, per- ics of fuzzy control, scanning sy- crol systems, examples.
Intende	ed learr	ning outcomes			
The stu	dents r	naster the fundamentals	of automation and co	ontrol.	
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (4) + l	Ü (2)				
module is written If annou examin prox. 15 Langua credital Allocati 	creditab examir unced l ation o ; minut ge of a ble for ion of p	le for bonus) nation (approx. 60 to 120 by the lecturer at the beg f one candidate each (ap es per candidate). ssessment: German and/ bonus	minutes). inning of the course, oprox. 20 minutes) or	the written examina	t every semester, information on whether tion may be replaced by an oral in groups of 2 candidates (ap-
Worklo	ad				
240 h					
Teachir	ng cyclo	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
§ 22 N					
Module		rs in			
Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	or's deg or's deg or's deg or's deg or's deg or's deg	gree (1 major) Mathemati gree (1 major) Computatio gree (1 major) Aerospace gree (1 major) Aerospace gree (1 major) Aerospace gree (1 major) Computer S gree (1 major) Mathemati gree (1 major) Games Eng	onal Mathematics (20 Computer Science (2 Computer Science (2 Computer Science (2 Science und Sustaina cs (2023)	015) 017) 020)	



Focus Philosophy

(30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 286 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Introdu	iction t	o Philosophy			06-Ph-B-P1/1-152-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	(not) s	successfully completed			
Duratio		Module level	Other prerequisites	ites	
1 seme	ster	undergraduate			
Conten	ts				
Introdu	iction to	o systematic approaches	to, methods in, and	history of philosoph	v
		ning outcomes			
Insight	into ba		ons in philosophy; ma	astery of the fundam	entals of formal logic (propositio-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
V (2) +	Ü (2)				
module is	s creditab	s essment (type, scope, langua le for bonus) nation (90 minutes)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
Allocat		*			
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Teachi	ng cycle	e: Once a year, winter ser	nester		
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
		gree (1 major) Mathemati			
		gree (1 major, 1 minor) Pł		5)	
		gree (1 major, 1 minor) Ph			
		gree (2 majors) Philosopl gree (1 major) Mathemati			
Dachel	or s ue	giee (1 major) mathemati	13 (2023)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 287 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation
Histor	ical epo	ochs, main works, author	S		06-Ph-B-P1/2-152-m01
Modul	e coord	inator		Module offered by	<u> </u>
holder	of the o	Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)	· ·
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts	~	·		
		nto a period in the histor nical school)	y of philosophy and/o	or into a systematic	problem of philosophy and/or in-
Intend	ed lear	ning outcomes			
ess, ge rhetori	eneraliz ically ef	ability; ability to present fective manner.	philosophical positio	ons in a structured, I	istency, discursivity, completen- linguistically appropriate, and
Course	es (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)	
S (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
oral ex	aminat	ion (approx. 25 minutes)			
Alloca	tion of _l	places			
Additi	onal inf	ormation			
Worklo	oad				
150 h					
	ing cycl				
		e: Once a year, winter ser			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
Modul	e appea	ars in			
Bache Bache Bache Bache	lor's de lor's de lor's de lor's de	gree (1 major) Mathemati gree (1 major, 1 minor) Pł gree (1 major, 1 minor) Pł gree (2 majors) Philosopl gree (1 major) Mathemati	nilosophy (Minor, 201 nilosophy (2015) hy (2015)	5)	

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 288 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Philosophical principles of sciences I					06-Ph-B-P2/1-152-r	no1
Module	e coord	inator		Module offered by	<u> </u>	
holder	of the (Chair of Theoretical Phil	osophy	Institute of Philoso	phy	
ECTS	<u> </u>	od of grading	Only after succ. con			
5	i	successfully completed				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate				
				ha historiaal and mb	ilaaa whiaal haaaa af	م الم الم الم الم
		o the theory of intellect disciplines.		ine historical and pr		i the maiviau
Intend	ed learı	ning outcomes				
and int	ellectu	e relationship of philos al origins of our knowle y with, and ability to cri	dge culture; insight in	to the scope and lim	its of various intelle	ctual discipli-
Course	S (type, n	umber of weekly contact hours	, language — if other than Ge	rman)		
V (2)						
		s essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
written	examiı	nation (45 minutes)				
	ion of p					
ceed th Among be mai	ne numl applic ntainec	f pool of general transfe per of available places, ants with the same nun I and places re-allocate	places will be allocate ber of subject semest	ed according to the n ers, places will be a	umber of subject se	mesters.
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachi	ng cycle	e: Once a year, winter se	emester			
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	ammes)		
Module	e appea	irs in				
Bachel	or's de	gree (1 major) Biology (:	2011)			
		gree (1 major) Chemistr				
		gree (1 major) Psycholo				
		gree (1 major, 1 minor) F				
		gree (1 major, 1 minor) F		-		
		gree (1 major, 1 minor) F gree (2 majors) Special		Culture (2008)		
		logiae Catholic Theolog	-			
-		gree (2 majors) English		(2009)		
		gree (2 majors) German		-		
		gree (1 major) Biochemi				
		gree (1 major) Chemistr				
Bachelor's	with 1 mai	or Mathematics (2015)	IMU Würzburg	g • generated 18-Apr-2025 • 6	exam. reg.	page 289 / 406
	-,			Bachelor (180 ECTS) Mathema	-	

Bachelor's degree (1 major) Geography (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Master's degree (2 majors) European Ethnology (2016) Bachelor's degree (1 major) Mathematical Physics (2016) Master's degree (1 major) European Ethnology (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 290 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 292 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title	e			Abbreviation
Philosophic	cal principles of sciences II		06-Ph-B-P2/2-152-m01	
Module coo	ordinator		Module offered by	1
holder of the	e Chair of Theoretical Philos	sophy	Institute of Philoso	phy
ECTS Met	thod of grading	Only after succ. com		
	nerical grade		• • • •	
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Contents	<u>, </u>			
	n to the historical and philos social sciencies, the natural			disciplines, especially the huma-
Intended lea	arning outcomes			
storical and al discipline thought; ab	l intellectual origins of our k es; familiarity with, and abil	nowledge culture; in ity to criticize, basic al texts and positions	sight into the scope assumptions of visio	nes; ability to reflect on the hi- e and limits of various intellectu- ons of the world and systems of e concepts and philosophical po-
Courses (type	e, number of weekly contact hours, la	anguage — if other than Ger	man)	
S (2)				
Method of a	assessment (type, scope, languag	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
module is credit	table for bonus)			
written exar	mination (90 minutes)			
Allocation o	of places			
Additional i	nformation			
Workload				
150 h				
Teaching cy	/cle			
Teaching cy	cle: Once a year, winter sen	nester		
Referred to	in LPO I (examination regulations	for teaching-degree progra	mmes)	
Module app	bears in			
Bachelor's o Bachelor's o Bachelor's o Bachelor's o Bachelor's o	degree (1 major) Geography degree (1 major) Mathemati degree (1 major, 1 minor) Ph degree (1 major, 1 minor) Ph degree (2 majors) Philosoph degree (1 major) Mathemati	cs (2015) ilosophy (Minor, 201 ilosophy (2015) iy (2015) cs (2023)	5)	
Bachelor's o	degree (1 major) Geography	(2023)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 294 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
Theore	Theoretical Philosophy I o6-Ph-B-P3/1-152-m01					101
Module	e coord	inator		Module offered by		
holder	of the (Chair of Theoretical Philo	sophy	Institute of Philoso	ohy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	(not) s	successfully completed				
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten						
	ction t	o theoretical philosophy texts.	by systematic analys	is of fundamental pro	oblems, historical tra	aditions, and
Intende	ed lear	ning outcomes				
An over within t	view o theoret	f basic problems and po ical philosophy; familian pretical philosophy.				
Course	S (type, r	number of weekly contact hours,	language — if other than Gei	rman)		
V (2)						
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
written	exami	nation (45 minutes)				
Allocat	ion of j	olaces				
ceed th Among be main	e num applic ntaineo	f pool of general transfe ber of available places, j ants with the same num d and places re-allocated	places will be allocate ber of subject semest	d according to the n ers, places will be al	umber of subject sei	mesters.
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ıg cycl	e				
Teachir	ng cycle	e: once a year, summer s	emester			
Referre	d to in	LPO I (examination regulation	is for teaching-degree progra	mmes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Biology (2	011)			
		gree (1 major) Chemistry				
		gree (1 major) Psycholog				
		gree (1 major, 1 minor) P				
	Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)					
	Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)					
	Bachelor's degree (2 majors) Special Education (2009) Magister Theologiae Catholic Theology (2013)					
-		gree (2 majors) English a	-	(2000)		
		gree (2 majors) German		-		
		gree (1 major) Chemistry		··· - ()/		
		gree (1 major) Geograph				
Bachelor's	with 1 ma	jor Mathematics (2015)		; • generated 18-Apr-2025 • e. achelor (180 ECTS) Mathemat		page 295 / 406

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 296 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Module studies (Bachelor) Philosophy (2020) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 298 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title Abbreviation						
Practic	al Phil	osophy I			06-Ph-B-P4/1-152-n	n01
Module coordinator				Module offered by		
holder	ofthe	Chair of Practical Philos	ophy	Institute of Philoso	ohy	
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
5	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate				
Conten	ts					
		o practical philosophy b atic texts.	by the systematic analy	ysis of fundamental p	problems, historical	traditions,
Intende	ed lear	ning outcomes				
practic	al philo	indamental problems a psophy; knowledge of, a psophy.				
Course	S (type, 1	number of weekly contact hours	, language — if other than Ge	rman)		
V (2)						
		sessment (type, scope, langu le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
written	exami	nation (45 minutes)				
Allocat	ion of	places				
ceed th Among be mai	ne num applic ntaineo	f pool of general transfe ber of available places, ants with the same num d and places re-allocate	places will be allocate ber of subject semest	ed according to the n ers, places will be al	umber of subject se	mesters.
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachir	ng cycl	e: Once a year, winter se	emester			
Referre	ed to in	LPOI (examination regulation	ons for teaching-degree progra	ammes)		
Module	e appea	ars in				
		gree (1 major) Biology (2				
		gree (1 major) Chemistr	,			
	Bachelor's degree (1 major) Psychology (2010)					
	Bachelor's degree (1 major, 1 minor) Pedagogy (2013) Bachelor's degree (4 major, 1 minor) Peditical and Social Studies (2012)					
	Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)					
	Bachelor's degree (2 majors) Special Education (2009)					
	Magister Theologiae Catholic Theology (2013)					
Bachel	or's de	gree (2 majors) English	and American Studies	(2009)		
		gree (2 majors) German		ure (2013)		
		gree (1 major) Chemistr				
Bachel	or's de	gree (1 major) Geograpł	iy (2015)			l
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e Bachelor (180 ECTS) Mathemat	-	page 300 / 406

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

page 301 / 406

Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's degree (1 major) Biology (2021) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 303 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Module Catalogue for the Subject Mathematics Bachelor's with 1 major, 180 ECTS credits

UNIVERSITÄT WÜRZBURG

Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title Abbreviation						
History	of Phi	losophy I			06-Ph-B-P5/1-152-n	101
Module coordinator				Module offered by		
holder	of the (Chair of the History of Pl	nilosophy	Institute of Philoso	ohy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	;		
1 seme	ster	undergraduate				
Conten	ts		-			
		o the history of philosop ligmatic texts.	bhy by the systematic	analysis of fundame	ntal problems, histo	rical traditi-
Intende	ed lear	ning outcomes				
ween d	ifferen	ndamental problems ar t methods of historiogra s of scholarly inquiry wit	phy; familiarity with, i	understanding of, an		
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
V (2)						
		sessment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informati	on on whether
written	exami	nation (45 minutes)				
Allocat	ion of j	olaces				
ceed th Among be main	ne num applic ntaineo	f pool of general transfe ber of available places, ants with the same num d and places re-allocate ormation	places will be allocate ber of subject semest	ed according to the n ers, places will be al	umber of subject se	mesters.
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Worklo	he					
150 h			_			
Teachi	ng cycl	۵	_			
		e: once a year, summer :	semester			
		LPO I (examination regulatio				
Kelene				annies)		
Module	2000	are in				
Bachele Bachele Bachele Bachele Bachele Magiste Bachele Bachele	Module appears in Bachelor's degree (1 major) Biology (2011) Bachelor's degree (1 major) Chemistry (2010) Bachelor's degree (1 major, 1 minor) Pedagogy (2013) Bachelor's degree (1 major, 1 minor) Pedagogy (2013) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008) Bachelor's degree (2 majors) Special Education (2009) Magister Theologiae Catholic Theology (2013) Bachelor's degree (2 majors) English and American Studies (2009) Bachelor's degree (2 majors) German Language and Literature (2013) Bachelor's degree (1 major) Chemistry (2015)					
		gree (1 major) Geograph	JMU Würzburg	g • generated 18-Apr-2025 • e		page 305 / 406

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Musicology (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Psychology (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Music Education (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Political and Social Studies (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Academic Speech Therapy (2015) Bachelor's degree (1 major) Indology/South Asian Studies (2015) Bachelor's degree (1 major, 1 minor) Egyptology (2015) Bachelor's degree (1 major, 1 minor) Pedagogy (2015) Bachelor's degree (1 major, 1 minor) History (2015) Bachelor's degree (1 major, 1 minor) Musicology (2015) Bachelor's degree (1 major, 1 minor) Philosophy (Minor, 2015) Bachelor's degree (1 major, 1 minor) Philosophy (2015) Bachelor's degree (1 major, 1 minor) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (1 major, 1 minor) Ancient World (2015) Bachelor's degree (1 major, 1 minor) Philosophy and Religion (2015) Bachelor's degree (1 major, 1 minor) Theological Studies (2015) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2015) Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2015) Bachelor's degree (1 major, 1 minor) German Language and Literature (2015) Bachelor's degree (2 majors) Egyptology (2015) Bachelor's degree (2 majors) Pedagogy (2015) Bachelor's degree (2 majors) Protestant Theology (2015) Bachelor's degree (2 majors) Musicology (2015) Bachelor's degree (2 majors) Philosophy (2015) Bachelor's degree (2 majors) Special Education (2015) Bachelor's degree (2 majors) Pre- and Protohistoric Archaeology (2015) Bachelor's degree (2 majors) Latin Philology (2015) Bachelor's degree (2 majors) Music Education (2015) Bachelor's degree (2 majors) Philosophy and Religion (2015) Bachelor's degree (2 majors) Theological Studies (2015) Bachelor's degree (2 majors) Political and Social Studies (2015) Bachelor's degree (2 majors) Russian Language and Culture (2015) Bachelor's degree (2 majors) Greek Philology (2015) Bachelor's degree (2 majors) European Ethnology (2015) Bachelor's degree (2 majors) Indology/South Asian Studies (2015) Bachelor's degree (2 majors) Geography (2015) Bachelor's degree (2 majors) French Studies (2015) Bachelor's degree (2 majors) History (2015) Bachelor's degree (2 majors) Sport Science (Focus on health and Pedagogics in Movement) (2015) Bachelor's degree (2 majors) German Language and Literature (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major, 1 minor) French Studies (2016) Bachelor's degree (2 majors) French Studies (2016) Bachelor's degree (1 major, 1 minor) Italian Studies (2016) Bachelor's degree (2 majors) Italian Studies (2016) Bachelor's degree (1 major, 1 minor) Spanish Studies (2016) Bachelor's degree (2 majors) Spanish Studies (2016) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. page 306 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Romanic Languages (French/Italian) (2016) Bachelor's degree (1 major) Romanic Languages (French/Spanish) (2016) Bachelor's degree (1 major) Romanic Languages (Italian/Spanish) (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Games Engineering (2016) Bachelor's degree (1 major, 1 minor) English and American Studies (2016) Bachelor's degree (2 majors) English and American Studies (2016) Bachelor's degree (1 major) Media Communication (2016) Bachelor's degree (1 major) Food Chemistry (2016) Bachelor's degree (1 major, 1 minor) Digital Humanities (2016) Bachelor's degree (1 major) Biology (2017) Bachelor's degree (1 major, 1 minor) Geography (2017) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) History of Medieval and Modern Art (2017) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2017) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Bachelor's degree (1 major, 1 minor) Museology and material culture (2017) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Games Engineering (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Media Communication (2018) Bachelor's degree (1 major) Biomedicine (2018) Bachelor's degree (1 major) Human-Computer Systems (2018) Bachelor's degree (2 majors) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Classical Archaeology (2018) Bachelor's degree (1 major, 1 minor) Digital Humanities (2018) Bachelor's degree (2 majors) Digital Humanities (2018) Bachelor's degree (1 major) Computer Science (2019) Bachelor's degree (1 major, 1 minor) English and American Studies (2019) Bachelor's degree (1 major) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (2 majors) Indology/South Asian Studies (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Modern China (2019) Module studies (Bachelor) Philosophy (2020) Bachelor's degree (1 major) Biomedicine (2020) Bachelor's degree (1 major) Pedagogy (2020) Bachelor's degree (1 major) Political and Social Studies (2020) Bachelor's degree (1 major) Business Information Systems (2020) Bachelor's degree (1 major, 1 minor) Political and Social Studies (2020) Bachelor's degree (2 majors) European Ethnology (2020) Bachelor's degree (2 majors) Political and Social Studies (2020) Bachelor's degree (2 majors) Special Education (2020) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major, 1 minor) Museology and material culture (2020) Bachelor's degree (1 major, 1 minor) Pedagogy (2020) Bachelor's degree (2 majors) Pedagogy (2020) Bachelor's degree (1 major) Psychology (2020) Bachelor's with 1 major Mathematics (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major) Biology (2021) Magister Theologiae Catholic Theology (2021) Bachelor's degree (2 majors) History (2021) Bachelor's degree (1 major, 1 minor) History (2021) Bachelor's degree (1 major) Media Communication (2021) Bachelor's degree (2 majors) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) Theological Studies (2021) Bachelor's degree (1 major, 1 minor) English and American Studies (2021) Bachelor's degree (2 majors) English and American Studies (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Computer Science und Sustainability (2021) Bachelor's degree (2 majors) Comparative Indo-European Linguistics (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (2 majors) Special Education (2021) Bachelor's degree (1 major) Business Information Systems (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Business Management and Economics (2021) Bachelor's degree (1 major) Human-Computer Systems (2022) Bachelor's degree (1 major, 1 minor) Museology and material culture (2022) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Mathematical Data Science (2022) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2022) Bachelor's degree (2 majors) Ancient Near Eastern Archaeology (2022) Bachelor's degree (1 major, 1 minor) Ancient World (2022) Bachelor's degree (2 majors) Ancient Near Eastern Studies (2022) Bachelor's degree (1 major) Franco-German studies: language, culture, digital competence (2022) Bachelor's degree (1 major) European Law (2023) Bachelor's degree (1 major, 1 minor) English and American Studies (2023) Bachelor's degree (2 majors) English and American Studies (2023) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Business Information Systems (2023) Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major, 1 minor) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) History of Medieval and Modern Art (2023) Bachelor's degree (2 majors) Special Education (2023) Bachelor's degree (1 major) Business Management and Economics (2023) Bachelor's degree (1 major) Geography (2023) Bachelor's degree (2 majors) Geography (2023) Bachelor's degree (1 major, 1 minor) Geography (2023) Bachelor's degree (2 majors) European Ethnology/Empiric Cultural Studies (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (2 majors) German Language and Literature (2024) Bachelor's degree (1 major, 1 minor) German Language and Literature (2024) Bachelor's degree (1 major) Music Education (2024) Bachelor's degree (2 majors) Music Education (2024) Bachelor's degree (1 major, 1 minor) Music Education (2024) Bachelor's degree (1 major) Indology/South Asian Studies (2024) Bachelor's degree (2 majors) Indology/South Asian Studies (2024) Bachelor's degree (1 major, 1 minor) Indology/South Asian Studies (2024) Bachelor's with 1 major Mathematics (2015) IMU Würzburg • generated 18-Apr-2025 • exam. reg. page 308 / 406 data record Bachelor (180 ECTS) Mathematik - 2015

Bachelor's degree (1 major, 1 minor) Ancient World (2024) Bachelor's degree (2 majors) Digital Humanities (2024) Bachelor's degree (1 major, 1 minor) Digital Humanities (2024) Bachelor's degree (1 major) Midwifery (2024) Bachelor's degree (2 majors) Greek Philology (2024) Bachelor's degree (2 majors) Latin Philology (2024) Bachelor's degree (1 major) Business Information Systems (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Business Management and Economics (2024) Bachelor's degree (1 major) Artificial Intelligence and Data Science (2024) Bachelor's degree (1 major) Human-Computer-Interaction (2024) Bachelor's degree (2 majors) Art Education (2024) Bachelor's degree (1 major) Digital Business & Data Science (2024) Bachelor's degree (1 major) Classics (2024) Bachelor's degree (1 major) Diversity, Ethics and Religions (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) (2025) Bachelor's degree (1 major) Food Chemistry (2025) Bachelor's degree (1 major, 1 minor) European Ethnology/Empiric Cultural Studies (2025) Bachelor's degree (1 major) Pedagogy (2025) Bachelor's degree (2 majors) Pedagogy (2025) Bachelor's degree (1 major) Economathematics (2025) Bachelor's degree (1 major) Academic Speech Therapy (2025) Bachelor's degree (1 major, 1 minor) Pedagogy (2025) Bachelor's degree (1 major) Games Engineering (2025)

Module title					Abbreviation
Issues	of rese	arch in philosophy I			06-Ph-B-P6/1-152-m01
Modul	e coord	inator		Module offered by	I
holder	ofthe	Chair of the History of Phi	losophy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conte	nts				
Discus	sion of	selected research topics	in philosophy.		
Intend	ed lear	ning outcomes			
sophy sophic sent p	; ability cal texts hilosop	to subject the problems and issues; ability to fol hical issues and position	discussed to historic low the rules of scho s.	al and systematic ev larly work; ability to	nding of scholarly inquiry in philo- valuation; ability to analyze philo- independently develop and pre-
	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
S (2)					
			ge — if other than German,	examination offered — if no	ot every semester, information on whether
		ien (onnrov, or minutor)			
		ion (approx. 25 minutes)			
Alloca	tion of _l	places			
 Additi	onal inf	ormation			
Auuiti	onatim	offilation			
Workle	nad				
150 h					
5	ing cycl	e			
Teachi	ng cycl	e: once a year, summer s	emester		
Referr	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
Modul	e appea	ars in			
		gree (1 major) Mathemati	_		
		gree (1 major, 1 minor) Pł		15)	
		gree (1 major, 1 minor) Ph			
		gree (2 majors) Philosopl gree (1 major) Mathemati			
Dache	ioi s de	gree (1 major) mathemati	13 (2023)		

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 310 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	10511

Module	e title				Abbreviation	
Text An	alysis	Ancient Philosophy			06-Ph-B-W1-152-mc)1
Module coordinator Module of				Module offered by		
holder	of the (Chair of the History of Pl	hilosophy	Institute of Philoso	ohy	
ECTS		od of grading	Only after succ. con	npl. of module(s)		
5		rical grade		•		
Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate				
		cient philosophical text				
	-		5.			
		ning outcomes				
their or	igin; kr	yse texts of ancient phil nowledge of, and ability pility to independently o	to criticise, basic ass	umptions in ancient		
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)		
S (2)		,	· · · · ·			
Method		sessment (type, scope, langule for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
-		nation (approx. 90 minu	utes) or term paper (10	to 12 pages)		
Allocat				co 12 p «300)		
Allocut						
	nal inf	ormation				
Additio	natin	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachir	ng cycle	e: Once a year, winter se	emester			
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	immes)		
§681N §721N						
Module	e appea	ars in				
Bachele Bachele Bachele First sta First sta First sta Bachele Bachele Bachele First sta	or's de or's de or's de or's de ate exa ate exa ate exa ate exa or's de or's de or's de or's de or's de ate exa	gree (1 major) Mathema gree (1 major) Political a gree (1 major, 1 minor) F gree (2 majors) Latin Ph gree (2 majors) Greek P mination for the teachir mination for the teachir mination for the teachir gree (1 major) Political a gree (1 major) Mathema gree (2 majors) Greek P gree (2 majors) Latin Ph mination for the teachir mination for the teachir	and Social Studies (20 Philosophy (2015) ilology (2015) hilology (2015) ng degree Gymnasium ng degree Gymnasium and Social Studies (20 tics (2023) hilology (2024) ilology (2024) ng degree Gymnasium	Greek Philology (201 Latin Philology (201 Greek Philology (201 20) Latin Philology (202	5) 18) 4)	
		gree (1 major) Classics (
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 311 / 406

Modul	e title				Abbreviation	
Text A	nalysis	Medieval Philosophy			06-Ph-B-W2-152-m01	
Modul	e coord	inator		Module offered by	<u> </u>	
holder	of the (Chair of the History of Ph	ilosophy	Institute of Philoso	phy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
Readin	ig of me	dieval philosophical tex	ts.			
		ning outcomes				
their o	rigin; kı		to criticise, basic assi	umptions in pre-mod	storical and intellectual context of dern systems of thought, culture, ues.	
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)		
S (2)						
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether	
written	exami	nation (90 minutes) or te	rm paper (10 to 12 pa	iges)		
Allocat	tion of j	olaces				
			-			
Additio	onal inf	ormation				
Worklo	bad					
150 h						
Teachi	ng cycl	e				
Teachi	ng cycle	e: Once a year, winter sei	mester			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Modul	e appea	urs in				
Bachel	or's de	gree (1 major) Mathemat	ics (2015)			
		gree (1 major) Political ar		15)		
	Bachelor's degree (1 major, 1 minor) Philosophy (2015)					
		gree (1 major) Political ar		20)		
Bachel	or's de	gree (1 major) Mathemat	ics (2023)			

Modul	e title				Abbreviation
Text A	nalysis	Modern Philosophy			06-Ph-B-W3-152-m01
Modul	e coord	inator		Module offered by	<u></u>
holder	ofthe	Chair of Practical Philoso	ohy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conter	nts				
Readin	g of mo	dern philosophical texts	•		
		ning outcomes			
stems	of thou		lge of modernity; abi	lity to follow the rule	ise, basic assumptions of sy- es of scholarly work; ability to in- ly appropriate manner.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
S (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
portfol	io: 2 to	3 essays (approx. 10 pag	es total)		
Allocat	tion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
Teachi	ng cycl	e: once a year, summer so	emester		
Referre	ed to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Modul	e appea	urs in			
Bachel	or's de	gree (1 major) Mathemati	cs (2015)		
		gree (1 major) Political an		15)	
		gree (1 major, 1 minor) Ph			
		gree (1 major) Political an	-	20)	
Bachel	or's de	gree (1 major) Mathemati	cs (2023)		

Module	e title				Abbreviation
Text Ar	nalysis	: Contemporary Philosop	hy		o6-Ph-B-W4-152-mo1
Module	e coord	inator		Module offered by	J
holder	ofthe	Chair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
Readin	g of co	ntemporary philosophica	l texts.		
Intend	ed lear	ning outcomes			
of syst	ems of ability t	thought, culture, and kno	owledge of the conter	nporary world; abili	o criticise, basic assumptions ty to follow the rules of scholarly m in a linguistically appropriate
Course	S (type, 1	number of weekly contact hours, I	anguage — if other than Ger	rman)	
S (2)					
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether
portfol	io: 2 to	3 essays (approx. 10 pag	ges total)		
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
150 h	-1		-		
Teachi	ng cycl	e			
Teachi	ng cycl	e: once a year, summer s	emester		
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
		gree (1 major) Mathemati			
		gree (1 major) Political ar		15)	
		gree (1 major, 1 minor) Pł gree (1 major) Political ar		`	
	ui side				

Bachelor's with 1 major Mathematics (2015)

Module	e title				Abbreviation
Basic d	iscipli	nes of theoretical philoso	ophy: Metaphysics a	nd Epistemology	06-Ph-B-W5-152-m01
Module coordinator Module offered by					1
holder	of the (Chair of Theoretical Philo	sophy	Institute of Philoso	ophy
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5		rical grade		•	
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten		undergraduate			
		nd the exetical models of	hasis dissiplines of t	haaratical philocop	h.,
		nd theoretical models of	basic disciplines of t	neoretical philosop	iny.
		ning outcomes			alyse philosophical texts and is-
transpa	arency, ophical	consistency, discursivity	, completeness, and	generalisability; ab	ples of argumentation such as vility to independently develop ate, and rhetorically practised
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
S (2)					
module is	s creditab aper (10	le for bonus) o to 12 pages)			not every semester, information on whether
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachi	ng cycl	e			
		e: once a year, summer s	emester		
	<u> </u>	LPOI (examination regulation		mmes)	
§ 32 N					
Module		urs in			
		gree (1 major) Geography	(2015)		
		gree (1 major) Mathemati	-		
		gree (1 major, 1 minor) Pł	-		
		gree (2 majors) Philosopl			
		mination for the teaching			
		mination for the teaching	/		-
	ate exa	mination for the teaching mination for the teaching			ce (2015) ce (2020 (Prüfungsordnungsvers
First sta	ate exa	-	g degree Sonderpäda	gogik Educational S	Science (2020 (Prüfungsordnung
version	-				
Bachel	or's de	gree (1 major) Mathemati gree (1 major) Geography			

JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Bachelor (180 ECTS) Mathematik - 2015

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	e title				Abbreviation
Specific disciplines of theoretical philosophyo6-Ph-B-W6-152-m01					06-Ph-B-W6-152-m01
Module coordinator Module offered by					
holder	of the (Chair of Theoretical Philo	sophy	Institute of Philoso	phy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5		rical grade		•	
Duratio		Module level	Other prerequisites	6	
1 seme		undergraduate			
Conten			<u>I</u>		
		nd theoretical models of	special disciplines o	f theoretical philoso	phy.
		ning outcomes	<u></u>		P).
es; abi parenc phical	lity to fo y, cons ideas a	ollow the rules of scholar istency, discursivity, com	ly work; ability to ap ppleteness, and gene structured, linguistica	ply general principle eralisability; ability to ally appropriate, and	Ilyse philosophical texts and issues of argumentation such as trans of independently develop philoso rhetorically practised manner.
S (2)	- (()pe,				
module is	s creditab	sessment (type, scope, langua le for bonus) o to 12 pages)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
Allocat	ion of p	olaces			
Allocat	ion of p	blaces			
		olaces ormation			
	onal inf				
 Additio Worklo	onal inf				
 Additio	onal info	ormation			
 Additio Worklo 150 h Teachin	onal info ad ng cycl	ormation e	emester		
 Additio 150 h Teachin Teachin	onal info oad ng cycle	ormation e e: once a year, summer s		ammes)	
 Additio 150 h Teachin Teachin Referre	nal info ad ng cycl ng cycle ed to in	ormation e		ammes)	
 Additio 150 h Teachin Teachin Referre § 32 N	nal info nad ng cycle ng cycle ed to in Ir. 1 c)	e e e: once a year, summer s LPO I (examination regulation		ammes)	
 Additio 150 h Teachin Teachin Referre § 32 N Module	nal info ad ng cycle ng cycle ed to in Ir. 1 c) e appea	e e e: once a year, summer s LPO I (examination regulation	s for teaching-degree progra	ammes)	
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 Worklo 150 h Teachin Teachin Referre § 32 N Module Bachel Bachel	nal info ad ng cycle ng cycle id to in Ir. 1 c) e appea or's des or's des	e e e: once a year, summer s LPO I (examination regulation	s for teaching-degree progra (2015) ics (2015)	ammes)	
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 Additio 150 h Teachin Teachin Referre § 32 N Module Bachel Bachel Bachel Bachel Bachel	nal info ad ng cycle ed to in Ir. 1 c) e appea or's de or's de or's de or's de or's de	e e e: once a year, summer s LPO I (examination regulation urs in gree (1 major) Geography gree (1 major) Mathemati gree (1 major, 1 minor) Ph	s for teaching-degree progra ((2015) ics (2015) hilosophy (2015) hy (2015)		:e (2015)
 Additio 150 h Teachin Teachin Referre § 32 N Module Bachel Bachel Bachel Bachel First sta	ng cycle ng cycle ed to in Ir. 1 c) e appea or's de; or's de; or's de; or's de; or's de;	e e e: once a year, summer s LPO I (examination regulation gree (1 major) Geography gree (1 major) Mathemati gree (1 major, 1 minor) Ph gree (2 majors) Philosopl	s for teaching-degree progra ((2015) ics (2015) hilosophy (2015) hy (2015) g degree Grundschule	e Educational Scienc	
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Bachelor's with a	major Mathematics	(2015)

Module ti	itle			Abbreviation
Basic dis	ciplines of practical philosopl	ıy		06-Ph-B-W7-152-m01
Module c	oordinator		Module offered by	
holder of	the Chair of Practical Philosop	bhy	Institute of Philoso	ohy
ECTS N	Nethod of grading	Only after succ. com	pl. of module(s)	
5 n	umerical grade			
Duration	Module level	Other prerequisites		
1 semeste	er undergraduate			
Contents	· · · ·			
Problems	in and theoretical models of	basic disciplines of p	ractical philosophy.	
Intended	learning outcomes			
es; ability parency, o phical ide	v to follow the rules of scholar consistency, discursivity, com eas and to present them in a s	ly work; ability to app pleteness, and gener tructured, linguistica	bly general principles ralisability; ability to lly appropriate, and	se philosophical texts and issu- s of argumentation such as trans- independently develop philoso- rhetorically practised manner.
	type, number of weekly contact hours, la	anguage — If other than Ger	man)	
S (2)	•			
	IT assessment (type, scope, langua; editable for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	er (10 to 12 pages)			
	n of places			
Additiona	al information			
Workload	1			
150 h				
Teaching	cycle			
Teaching	cycle: once a year, summer se	emester		
Referred	to in LPO I (examination regulations	for teaching-degree progra	mmes)	
§ 32 Nr.			-	
Module a	ppears in			
Bachelor' Bachelor' First state First state First state First state on 2015)) First state version 20 Bachelor'	e examination for the teaching	cs (2015) ilosophy (2015) ny (2015) degree Grundschule degree Sonderpädag degree Mittelschule degree Mittelschule degree Sonderpädag cs (2023)	gogik Educational So Educational Science Educational Science	cience (2015)

Bachelor's with 1 major Mathematics (2015)	
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	e title				Abbreviation
Specific disciplines of practical philosophy 06-Ph-B-W8-152-m01					06-Ph-B-W8-152-m01
Module coordinator Module offered by					
holder	of the C	hair of Practical Philoso	phy	Institute of Philoso	phy
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)	
5	numer	ical grade		-	
Duratio	L r	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten			<u>I</u>		
		nd theoretical models of	special disciplines o	f practical philosoph	IV.
		ing outcomes	<u></u>	· p.act.ca. pcoop.	.,
es; abi parenc phical i	lity to fo y, consi ideas ai	ollow the rules of scholar stency, discursivity, com	ly work; ability to ap ppleteness, and gene structured, linguistica	ply general principle ralisability; ability to ally appropriate, and	se philosophical texts and issus s of argumentation such as trans o independently develop philoso rhetorically practised manner.
S (2)					
module is	s creditabl	essment (type, scope, langua e for bonus) to 12 pages)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
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	ion of p	• =			
Allocat	ion of p	• =			
Allocat	ion of p	laces			
Allocat	ion of p onal info	laces			
Allocat Additio Worklo	ion of p onal info	laces			
Allocat Additio Worklo 150 h	ion of p onal info	ormation			
Allocat Additio Worklo 150 h Teachin	ion of p onal info ad ng cycle	ormation	emester		
Allocat Additio Worklo 150 h Teachin	ion of p mal info ad ng cycle	prmation		nmmes)	
Allocat Additio 150 h Teachin Teachin Referre	ion of p nal info ad ng cycle ng cycle	ormation		ammes)	
Allocat Additio Worklo 150 h Teachin Teachin Referre § 32 N	ion of p mal info ad ng cycle ng cycle ed to in Ir. 1 c)	prmation prmation e :: once a year, summer s LPO I (examination regulation		ammes)	
Allocat Additio 150 h Teachin Teachin Referre § 32 N Module	ion of p mal info ad ng cycle ed to in Ir. 1 c) e appea	laces prmation e se to once a year, summer s LPO I (examination regulation rs in	s for teaching-degree progra	ammes)	
Allocat Additio 150 h Teachin Teachin Referre § 32 N Module Bachel	ion of p mal info ad ng cycle ed to in Ir. 1 c) e appea or's deg	e e conce a year, summer s LPO I (examination regulation rs in gree (1 major) Geography	s for teaching-degree progra / (2015)	ammes)	
Allocat Additio Worklo 150 h Teachin Referre § 32 N Module Bachel Bachel	ion of p mal info ad ng cycle d to in lr. 1 c) e appea or's deg or's deg	laces prmation e se to once a year, summer s LPO I (examination regulation rs in	s for teaching-degree progra (2015) ics (2015)	ammes)	
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Allocat Additio Worklo 150 h Teachin Teachin Referre § 32 N Module Bachel Bachel Bachel Bachel	ion of p inal info ad ng cycle id to in lr. 1 c) e appea or's deg or's deg or's deg or's deg	prmation prmation e :: once a year, summer s LPO I (examination regulation rs in gree (1 major) Geography gree (1 major) Mathemati gree (1 major, 1 minor) Ph	s for teaching-degree progra (2015) ics (2015) hilosophy (2015) hy (2015)		e (2015)
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Allocat Additio Worklo 150 h Teachin Teachin Referrer § 32 N Module Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel First sta First sta First sta First sta version	ion of p inal info ad ng cycle id to in lr. 1 c) e appea or's deg or's deg	e e conce a year, Summer S LPO I (examination regulation rs in gree (1 major) Geography gree (1 major) Mathemati gree (1 major, 1 minor) Ph gree (2 majors) Philosopl mination for the teaching mination for the teaching mination for the teaching mination for the teaching mination for the teaching	s for teaching-degree progra ((2015) ics (2015) hilosophy (2015) hy (2015) g degree Grundschule g degree Sonderpäda g degree Mittelschule g degree Mittelschule	e Educational Scienc gogik Educational S e Educational Scienc e Educational Scienc	cience (2015) e (2015)

:s (2015)	Bachelor's with 1 major Mathematic
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Module title					Abbreviation
Probler	ns of M	odern Philosophy			06-Ph-B-W10-152-m01
Module coordinator				Module offered by	
holder	of the C	hair of the History of Phi	losophy	Institute of Philosop	ohy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	numer	ical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
Reading	g and d	iscussion of selected pro	blems in modern phi	ilosophy.	
Intende	ed learr	ing outcomes			
ledge o gument sent ph	f the hi tation s ilosopl	story of philosophical co uch as transparency, cor nical issues in a structure	ncepts, arguments, a nsistency, discursivity ed and linguistically a	nd theories; ability t , completeness, and nd rhetorically appr	o contemporary); in-depth know- to apply general principles of ar- d generalisability; ability to pre- opriate way.
	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (2)					
		essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
		on (approx. 25 minutes)			
Allocati					
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teachir	ng cycle	e			
Teachir	ng cycle	e: Once a year, winter sen	nester		
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
§ 32 N	r. 1 c)				
Module	e appea	rs in			
Bacheld Bacheld Bacheld First sta First sta First sta on 2019 First sta version Bacheld	or's deg or's deg or's deg or's deg ate exan ate exan ate exan ate exan 5)) ate exan 2015)) or's deg	nination for the teaching	cs (2015) ilosophy (2015) ny (2015) g degree Grundschule g degree Sonderpädag g degree Mittelschule g degree Mittelschule g degree Sonderpädag cs (2023)	gogik Educational So Educational Science Educational Science	cience (2015)

:s (2015)	Bachelor's with 1 major Mathematic
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Module title Abbreviation						
Proble	Problems of Theoretical Philosophy 06-Ph-B-W11-152-m01					
Module coordinator Module offered by						
holder	of the (Chair of Theoretical Philo	sophy	Institute of Philoso	phy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Readin	g and c	liscussion of selected pr	oblems in theoretical	philosophy.		
Intende	ed lear	ning outcomes				
parence a struct	y, cons tured a		pleteness, and gene orically appropriate v	ralisability; ability to vay.	of argumentation such as trans- present philosophical issues in	
S (2)				-		
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
portfoli	o: 2 to	3 essays (approx. 10 pag	ges total)			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachir	ng cycle	e: Once a year, winter ser	nester			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module						
		gree (1 major) Mathemat				
		gree (1 major, 1 minor) Pł gree (1 major) Mathemat				
Dachel	or 5 ue	Sice (I major) mathemat	(2023)			

Module title Abbreviation						
Probler	Problems of Practical Philosophy 06-Ph-B-W12-152-m01					
Module coordinator Module offered by						
holder	of the (Chair of Practical Philoso	phy	Institute of Philoso	phy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		• •			
Readin	g and c	liscussion of selected pr	oblems in practical pl	nilosophy.		
Intende	ed learı	ning outcomes				
rency, o structu	consist red and		eteness, and general rically appropriate wa	isability; ability to p y.	argumentation such as transpa- resent philosophical issues in a	
S (2)				inany		
module is	creditab	s essment (type, scope, langua le for bonus) 3 essays (approx. 10 pag		examination offered — if no	ot every semester, information on whether	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	e				
Teachir	ng cycle	e: Once a year, winter sei	mester			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
		gree (1 major) Mathemat				
		gree (1 major, 1 minor) Pl				
Bachel	or's de	gree (1 major) Mathemat	ICS (2023)			



Focus Physics (30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 322 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Compulsory Courses

(14 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 323 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
Classical Physics 1 for Students of Physics related Discipli			sics related Disciplir	ies	11-ENNF1-152-m01	
Module coordinator			Module offered by			
Managing Director of the Institute of App		pplied Physics	Faculty of Physics and Astronomy			
ECTS Method of grading		od of grading	Only after succ. compl. of module(s)			
7	1	rical grade				
/ Duratic			Other prerequisites			
Duration Module level 1 semester undergraduate						
		undergraduate	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginnin of the semester.			
Conten	lts					
1. Princ finition 2. Poin motion 3. New mic sca 4. Worl 5. Elast and ba 6. Cons and po 7. Rota gies to in the c 8. Tida gal forc 9. Galil postula pulse; 10. Rig their st tation, 11. Frict mation 12. Vib power vibratic	iples: I i, meas t Mech f, free fa ton's la ale, iso ale, iso and e tic, inel lance s servativ tential tional r linear central l forces ce; lean tra ates, pr id body ability, the Ean tion: St ; ration: St approa on (reso	urement procedures, SI), anics: Kinematics, motio all, slate litter; circular m aws: Forces and momentu tropic and anisotropic fri nergy: (Kinetic) performa lastic and super-elastic c system, rocket equation; ve and non-conservative of gravity (general relation notion: Angular moment translation, applications, potential; s: Inertial system, referen ansformation: Brief digres roblem of simultaneity, Lo v and gyroscope: Determine tensor on the example of rth as a spinning top; tatic and dynamic friction Representation by mean ch, Taylor expansion, ha ponant case, Kriechfall, ap	importance of metro n in 2D and 3D / vector otion in polar coordin um definition, weight ction. Preparation of the nce, examples; ollision: Energy and n force fields: Potential ons); um, angular velocity, satellites (geostation ce systems, apparent ssion to Maxwell's equipment transformation ning the centre of main of the elasticity tensor the stick-slip motion, ro- s of complex e-function periodic limit), forced	logy; ors, special cases: L nates; vs. mass forces on t the equations of mo nomentum conserva , potential energy; la torque, rotational er nary and interstellar; c forces, Foucault pe uations, ether, Mich t, time dilation and la ss, inertia tensor an c, physics of the bike olling friction, viscou on, equation of moti n; spring and pendu vibration, Fourier an	ation, surges in centre of mass aw, weight scale, field strength nergy, moment of inertia, analo-), escape velocities, trajectories ndulum, Coriolis force, centrifu- elson interferometer, Einstein's ength contraction, relativistic im- d -ellipsoid, principal axes and e; gyroscope: Precession and nu- s friction, laminar flow, eddy for- on (DGL) on forces, torque and lum, physical pendulum, damped alysis;	
-	•	-	nd eigenfunctions, do	uble pendulum, det	erministic vs. chaotic motion,	
		namics and chaos;	and longitudinal way	es polarisation priv	nciple of superposition, reflectio	
	open ar				e and group velocity, dispersion	
16. Flui Bernou pressiv	ids: Hyd Illi equa ve mod Ietic the	ation; Boyle-Mariotte, ga ulus; eory of gases: ideal and r	uoyancy, surface tens s laws, barometric he real gas, averages, dis	ion and contact ang ight formula, air pre stribution functions,	lastic waves; le, capillary forces, steady flows, ssure, compressibility and com- equipartition theorem, Brownia	
		ion cross section, mean f				

Intended learning outcomes

The students understand the basic contexts and principles of mechanics, vibration, waves and kinetic theory of gases. They are able to apply mathematical methods to the formulation of physical contexts and autonomously apply their knowledge to the solution of mathematical-physical tasks.

 $\mathbf{Courses}$ (type, number of weekly contact hours, language - if other than German)

V (4) + Ü (2)

Module taught in: Ü: German or English

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 120 minutes)

Language of assessment: German and/or English

Allocation of places

Additional information

Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment to whose not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.

Workload

210 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Mathematics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 325 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Classic	e title				Abbreviation	
2.35510	al Phys	ics 2 for Students of P	hysics related Discipli	ines	11-ENNF2-152-m01	
Module	e coordi	inator		Module offered by		
Managi	ing Dire	ector of the Institute of <i>i</i>	Applied Physics	Faculty of Physics a	ind Astronomy	
ECTS		d of grading	Only after succ. con	· · ·		
7		rical grade				
/ Duratio	<u> </u>	Module level	Other prerequisites			
1 seme	ster	undergraduate	13 exercise sheets p approx. 50% of exe	isite to assessment: oer semester). Stude rcises will qualify for students about the re	nts who successfully admission to assess	completed sment. The
Conten	ts		•			
2. Heat 3. Fund 4. Heat 5. Real phenor 6. Elect point cl 7. Gaus cial syn 8. Elect equipo lace eff 9. Matt on, the 10. Cap dia in tl ectric d 11. Elect 12. Res ohmic,	conduction lamenta engine gases a nena (co trostation harge; ssian se nmetrie trical po tential fects, So er in th rmionic bacitor, he capa lisplace tricity, istance NTC, P	amics (linked to 11-E-M) ction, heat transfer, dif al theorems of thermod s, working diagrams, e and liquids, states of m opalescence), coexister cs, basic concepts: Elec entence, related to Coul es; divergence and GS i otential, working in the surfaces; several impore egner wheel; e E-field, charge in a ho cemission, dipole in ho mirror charge, definition acitor; electrical polaris ement; electrolytic capa introduction, current do and conductivity, resis TC);	fusion, convection, rac ynamics, entropy, irre- fficiency, example: Sti atter (also solids), var ace region, Joule-Thom ctrical charge, forces; e lomb's law, definition n differential form; E-box, electric. potent tant examples: Sphere mogeneous field, Mill omogeneous and inhor n, capacity; plate and ation, displacement a ccitor; Piezoelectric eff ensity, drift velocity, co	diant heat; versibility, Maxwell's rling engine; n der Waals, critical p ison; electric field, reps. fie of "river"; Gaussian s ial, potential differer e, hollow sphere, cap likan experiment, Bra mogeneous field; ind spherical capacitor; nd orientation polari ect; onduction mechanisr	demon; point, phase transitioned eld concept, field line surface, divergence t nce, voltage; potentia pacitor plates, electric aun tube; electron: Fi luction, Faraday cago combination of capa sation, microscopic	ons, critical es, field of a heorem; spe al equation, ic dipole; ield emissi- e; acitors; me-
suring i 14. Pow 15. Trar 16. Mag gnetic f 17. Vec Helmho 18. Mov pole fie 19. mat ferroma 20. ind inducta 21. Max equatic 22. AC:	instrum ver and sfer mo gnetost field; An tor pote oltz coil ving cha eld; mov tter in th agnetisn uction, ance,se well's on; Max Fundan	arge in the static magn vement paths, mass sp ne magnetic field, effec m; magn. moment of th Faraday's law of induc lf-induction; applicatio displacement current, o well equations; mentals, sinusoidal vib	ge; apacitor charge; galva in solids: Band mode s; permanent magnet, to e-box, magn. river, n, analogous to electric etic field, current balar ectrometer, Wien filter ts of the field on matter te electron, behaviour tion, Lenz's rule, flux c ns: Transformer, gener choice of integration a rations, amplitude, pe	nodes); internal resis nic element; thermov l, semiconductor; lin field properties, def swirl; c scalar potential; ca nce, Lorentz force, rig rs, Hall effect; electro er, relative permeabi at interfaces; hange, eddy electric rator; rea, displacement cu	stance of a voltage s voltage; e in liquids and gase initions and units; Ea lculation of fields, ex ght-hand rule, electri on: e / m determinati lity, susceptibility; p field, Waltenhofen's urrent; Maxwell's exter ver and RMS value, o	ource, mea- es; arth's ma- xamples, ic motor; di- ion; ara-, dia-, s pendulum; ension, wave ohmic resi-
suring i 14. Pow 15. Trar 16. Mag gnetic f 17. Vec Helmho 18. Mov pole fie 19. mat ferroma 20. ind inducta 21. Max equatic 22. AC: stance;	instrum ver and sfer mo gnetost field; An tor pote bltz coil ving cha eld; mov tter in th agnetisn uction, ance,se kwell's on; Max Fundan; Capac	ents; Wheatstone bridg energy in the circuit; C echanisms, conduction atics, fundamental law mper's Law, analogous ential, formal derivation s; arge in the static magne vement paths, mass sp ne magnetic field, effec m; magn. moment of th Faraday's law of induct If-induction; applicatio displacement current, o well equations;	ge; apacitor charge; galva in solids: Band mode s; permanent magnet, to e-box, magn. river, n, analogous to electric etic field, current balan ectrometer, Wien filten ts of the field on matter te electron, behaviour tion, Lenz's rule, flux cons: Transformer, gener choice of integration a rations, amplitude, peo or, capacitor and coil, p	nodes); internal resis nic element; thermov l, semiconductor; lin field properties, def swirl; c scalar potential; ca nce, Lorentz force, rig rs, Hall effect; electro er, relative permeabi at interfaces; hange, eddy electric rator; rea, displacement cu	stance of a voltage s voltage; e in liquids and gase initions and units; Ea lculation of fields, ex ght-hand rule, electri on: e / m determinati lity, susceptibility; p field, Waltenhofen's urrent; Maxwell's exter ver and RMS value, o	ource, mea- es; arth's ma- xamples, ic motor; di- ion; ara-, dia-, s pendulum; ension, wave ohmic resi-

23. Resonant circuits, combinations of RLC; series and parallel resonant circuit; forced vibration, damped harmonic oscillator (related to 11-E-M);

24: Hertz dipole, characteristics of irradiation, near field, far field; Rayleigh scattering; accelerated charge, synchrotron radiation, X-rays; 25. Electromagnetic waves: Principles, Maxwell's determination to electromagnetism, radiation pressure (Poynting vector, radiation pressure).

Intended learning outcomes

The students understand the basic principles and contexts of thermodynamics, science of electricity and magnetism. They know relevant experiments to observe and measure these principles and contexts. They are able to apply mathematical methods to the formulation of physical contexts and autonomously apply their knowledge to the solution of mathematical-physical tasks.

Courses (type, number of weekly contact hours, language – if other than German)

V (4) + Ü (2)

Module taught in: Ü: German or English

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 120 minutes) Language of assessment: German and/or English

Allocation of places

Additional information

Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.

Workload

210 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major) Aerospace Computer Science (2017) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Mathematics (2023)

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Compulsory Electives 1

(3 ECTS credits)

Students must take either module 11-PNNF or the two modules 11-P-PA and 11-P-FR1. Other combinations are not permitted.

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Module	e title				Abbreviation
Labora	tory Co	urse Physics for Student	s of Physics Related	Disciplines	11-PNNF-152-m01
Module	e coord	inator		Module offered by	·
Managi	ing Dire	ector of the Institute of Ap	oplied Physics	Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		ments in the fields of me Atomic and Nuclear Phy			cs, optics, X-rays, nuclear magne
Intende	ed lear	ning outcomes			
riments ning of cine.	s. They differe	have a basic understand	ing of physical pheno g methods as well as	omena and know the s their applications,	ne implementation of own expe- e basic ideas and ways of functio- especially in the field of Biomedi-
P (4)				initity	
a) prac minute Each ex	tical as s). kperime	-			and b) written examination (90 rell as performance of experi-
Allocat	ion of j	olaces			
Additio	nal inf	ormation			
Worklo	ad				
90 h	-				
Teachi	ng cvcl	e			
	- /				
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	ummes)	
			00 progra	/	
Module	e appea	urs in			
Bachel Bachel Bachel	or's de or's de or's de	gree (1 major) Mathemati gree (1 major) Computati gree (1 major) Functional gree (1 major) Functional	onal Mathematics (20 Materials (2015) Materials (2021)	015)	
		gree (1 major) Mathemati gree (1 major) Functional	-		
Dachel	ui s ae	gree (1 major) runctional	materials (2025)		

	e title				Abbreviation	
Labora	tory Co	urse Physics A (Mechan	ics, Heat, Electron	nagnetism)	11-P-PA-152-m01	
Module	e coordi	inator		Module offer	ed by	
Manag	ing Dire	ector of the Institute of A	pplied Physics	Faculty of Phy	vsics and Astronomy	
ECTS	r -	od of grading	<u>г</u>	compl. of module	· · · ·	
3		successfully completed				
<u> </u>	<u> </u>	Module level	Other prerequisi	tos		
1 seme		undergraduate				
Conten	l	undergraduate				
Measu rents, ł	rement neat cap		sity of bodies, dyna	amic viscosity, ela	e.g. measurement of vol sticity, surface tension, s	
Intend	ed learr	ning outcomes				
le to in		lently plan and conduct			experimenting techniques ers, and to document the	
	S (type, n	umber of weekly contact hours,	language — if other than	n German)		
P (2)						
		essment (type, scope, langu le for bonus)	age — if other than Germ	an, examination offered	1 — if not every semester, informa	ation on whether
Prepari	ng, per		(record of readings		experiments will be con hat was not successfully	
Prepari cessful can be candid pleted	ng, per ly comp repeate ate's ur	forming and evaluating oleted if a Testat (exam) ed once. After completion nderstanding of the phy repeated once. Both com	(record of readings is passed. Exactly on of all experimen sics-related conter	one experiment t ts, talk (with discu its of the module.		completed es) to test the essfully com-
Prepari cessful can be candid pleted Allocat	ng, per ly comp repeate ate's ur can be ion of p	forming and evaluating oleted if a Testat (exam) ed once. After completion nderstanding of the phy repeated once. Both com	(record of readings is passed. Exactly on of all experimen sics-related conter	one experiment t ts, talk (with discu its of the module.	hat was not successfully ussion; approx. 30 minut Talks that were not succ	completed es) to test the essfully com-
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Prepari cessful can be candid pleted Allocat Worklo 90 h Teachi Referre Bachel Bachel Bachel	ng, per ly comp repeate ate's ur can be ion of p onal info ad ad ad ad ad ad ad ad ad ad ad ad ad	forming and evaluating oleted if a Testat (exam) ed once. After completion inderstanding of the physic repeated once. Both complete olaces ormation e LPO I (examination regulation rs in gree (1 major) Mathemating gree (1 major) Physics (2	(record of readings is passed. Exactly on of all experimen sics-related conter mponents of the as ns for teaching-degree pr tics (2015)	one experiment t ts, talk (with discu- nts of the module. ssessment have to ogrammes)	hat was not successfully ussion; approx. 30 minut Talks that were not succ	completed es) to test the essfully com-
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Prepari cessful can be candid pleted Allocat Worklo 90 h Teachi Referre Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng, per ly comp repeate ate's ur can be ion of p mal info ad ad ad ad ad ad ad ad ad ad ad ad ad	forming and evaluating pleted if a Testat (exam) ed once. After completion inderstanding of the physic repeated once. Both complete places brmation e LPO I (examination regulation rs in gree (1 major) Mathemating gree (1 major) Nanostruct gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Computation gree (1 major) Computation	(record of readings is passed. Exactly on of all experimen sics-related conter mponents of the as a for teaching-degree pr tics (2015) cots) cture Technology (2 tical Physics (2015) conal Mathematics of Computer Science	one experiment t ts, talk (with discu- nts of the module. ssessment have to ogrammes)	hat was not successfully ussion; approx. 30 minut Talks that were not succ	completed es) to test the essfully com-
Prepari cessful can be candid pleted Allocat Worklo 90 h Teachin Referre Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng, per ly comp repeate ate's ur can be ion of p mal info ad ad ad ad ad ad ad ad ad ad ad ad ad	forming and evaluating pleted if a Testat (exam) ed once. After completion inderstanding of the physic repeated once. Both com- places ormation E LPO I (examination regulation rs in gree (1 major) Mathemating gree (1 major) Nanostruct gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Aerospace gree (1 major) Mathemating gree (1 major) Aerospace gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Aerospace gree (1 major) Mathemating	(record of readings is passed. Exactly on of all experimen sics-related conter mponents of the as ns for teaching-degree pr tics (2015) cots) cture Technology (2 tical Physics (2015) ional Mathematics e Computer Scienc tical Physics (2016)	one experiment t ts, talk (with discu- nts of the module. ssessment have to ogrammes) e015) (2015) e (2015) e (2015))	hat was not successfully ussion; approx. 30 minut Talks that were not succ	completed es) to test the essfully com-
Prepari cessful can be candid pleted Allocat Additic 90 h Teachin Referre Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	ng, per ly comp repeate ate's ur can be ion of p onal info ad ad ad ad ad ad ad ad ad ad ad ad ad	forming and evaluating pleted if a Testat (exam) ed once. After completion inderstanding of the physic repeated once. Both complete places brmation e LPO I (examination regulation rs in gree (1 major) Mathemating gree (1 major) Nanostruct gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Mathemating gree (1 major) Computation gree (1 major) Computation	(record of readings is passed. Exactly on of all experimen sics-related conter mponents of the as ns for teaching-degree p tics (2015) ture Technology (2 tical Physics (2015) ional Mathematics e Computer Science tical Physics (2016) e Computer Science	one experiment t ts, talk (with discu- nts of the module. ssessment have to ogrammes) e015) (2015) e (2015) e (2015))	hat was not successfully ussion; approx. 30 minut Talks that were not succ	completed es) to test the essfully com-

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 331 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title				Abbreviation	
Data and Erro	or Analysis			11-P-FR1-152-m01	
Module coord	linator		Module offered by	<u> </u>	
	ector of the Institute of A	pplied Physics	Faculty of Physics a	nd Astronomy	
	od of grading	Only after succ. con		,	
	successfully completed				
Duration	Module level	Other prerequisites			
1 semester	undergraduate	13 exercise sheets p approx. 50% of exer	site to assessment: o er semester). Stude cises will qualify for students about the re	nts who successfull admission to asses	y completed sment. The
Contents					
Types of error and standard	rs, error approximation a deviation.	nd propagation, grapł	ic representations,	linear regression, m	ean values
Intended lear	ning outcomes				
	are able to evaluate mea to draw, present and dis			gation and of the pri	nciples of
Courses (type,	number of weekly contact hours,	language — if other than Ger	rman)		
V (1) + Ü (1) Module taugi	nt in: Ü: German or Englis	sh			
Method of as	sessment (type, scope, langu	age — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
module is credita	,				
	nation (approx. 120 min assessment: German and				
Allocation of	places				
		_			
Additional in					
this will be co 3 Sentence 4 find that the gistration for ly register for sessment wa sessment to	If a student registers for onsidered a declaration of ASPO (general academic student has obtained the assessment into effect. (an assessment. Student s not put into effect will n which he/she has not be	of will to seek admission and examination reg e qualification for adm Only those students th s who did not register not be admitted to the	on to assessment pu ulations). If the mod ission to assessmen nat meet the respect for an assessment of respective assessm	rsuant to Section 20 ule coordinators sul at, they will put the s we prerequisites can or whose registration ent. If a student tak	o Subsection osequently student's re- n successful- n for an as- es an as-
Workload		_			
60 h					
Teaching cyc	le				
	LPOI (examination regulatio	ns for teaching-degree progra	mmes)		
§ 53 Nr. 1 c) § 77 Nr. 1 d)					
Module appe					
Bachelor's de	egree (1 major) Mathema egree (1 major) Physics (2 egree (1 major) Nanostruc	2015)	5)		
Bachelor's with 1 ma	ajor Mathematics (2015)	-	; • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 332 / 406

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Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Aerospace Computer Science (2015) Bachelor's degree (1 major) Functional Materials (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Mittelschule Physics (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major) Aerospace Computer Science (2017) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Gymnasium Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Aerospace Computer Science (2020) First state examination for the teaching degree Grundschule Physics (2020) First state examination for the teaching degree Gymnasium Physics (2020) First state examination for the teaching degree Realschule Physics (2020) First state examination for the teaching degree Mittelschule Physics (2020) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (1 major) Functional Materials (2025)

Module	title				Abbreviation
Labora	tory Co	urse Physics B for Stude	ents of other Disciplin	ies	11-P-NFB-152-m01
Module	e coord	inator	Module offer		<u></u>
Managi	ing Dire	ector of the Institute of A	pplied Physics	Faculty of Physics a	and Astronomy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
4	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate		recommended to co eting module 11-P-N	mplete modules 11-P-PA and 11- FB.
Conten	ts				
Physica	al laws	of optics, vibrations and	waves, science of el	ectricity and circuits	with electric components.
Intende	ed lear	ning outcomes			
le to inc measur	depenc ring pro	lently plan and conduct	experiments, to coop valuate the measurin	erate with others, an g results on the basi	menting techniques. They are ab- nd to document the results in a is of error propagation and of the
Course	S (type, r	number of weekly contact hours,	language — if other than Ge	rman)	
P (2)			-		
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether
Prepari cessful can be candida	ng, per ly com repeat ate's u	pleted if a Testat (exam) ed once. After completio	(record of readings or is passed. Exactly on n of all experiments, sics-related contents	e experiment that wa talk (with discussion of the module. Talks	riments will be considered suc- as not successfully completed n; approx. 30 minutes) to test the that were not successfully com- uccessfully completed.
Allocat	ion of p	olaces			
			-		
Additio	nal inf	ormation			
Worklo	ad				
120 h					
Teachir	ıg cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
		gree (1 major) Mathemat	-		
		gree (1 major) Computati		015)	
Bachel	or's de	gree (1 major) Mathemat	ics (2023)		



Compulsory Electives 2

(7 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 335 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation
Optics	and Wa	aves			11-E-O-152-m01
Modul	e coord	linator		Module offered by	
Manag	ing Dir	ector of the Institute of A _l	pplied Physics	Faculty of Physics a	and Astronomy
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)	
8	nume	rical grade			
Duratio	on	Module level	Other prerequisites	;	
1 seme	ster	undergraduate			
Conter	its				
1. Light	t (linke	d to 11-E-E): basic concep	ots, the speed of light	, Huygens-Fresnel pi	rinciple: reflection, refraction.

Light (linked to 11-E-E): basic concepts, the speed of light, Huygens-Fresnel principle: reflection, refraction.
 Light in matter: propagation velocity in the medium; dispersion, complex and frequency-dependent dielectric constant; absorption, Kramers-Kronig relation, interfaces, Fresnel equations, polarization, generation by absorption, birefringence, optical activity (dipole)

3. Geometrical optics: basic concepts, Fermat's principle, optical path, planar interfaces, Snell's law, total reflection, optical tunneling, evanescent waves, prism; normal and anomalous dispersion, curved interfaces, thin and thick lenses, lens systems, lens grinder formula, aberrations, imaging errors (spherical & chromatic aberration, astigmatism, coma, distortion, correction approaches).

4. Optical instruments: characteristics; camera, eye, magnifying glass, microscope, telescope types, bundle beam vs. image construction (electron lenses, electron microscope), confocal microscopy.

5. Wave optics: spatial and temporal coherence, Young's double slit experiment, interference pattern (intensity profile), thin films, parallel layers, wedge-shaped layers, phase shift, Newton rings, interferometer (Michelson, Mach-Zender, Fabry-Perot).

6. Diffraction in the far field: Fraunhofer diffraction, , single slit, intensity distribution, apertures, resolving power, Rayleigh & Abbé criterion, Fourier optics, optical grating, n-fold slit, intensity distribution, grating spectrometer and resolution, diffraction off atomic lattices, convolution theorem.

7. Diffraction in the near field: Fresnel, near-field diffraction at circular apertures/disks, Fresnel zone plate, near-field microscopy, holography, Huygens-Fresnel concept; white light hologram.

8. Failure of classical physics I - from light wave to photon: black body radiation and Planck's quantum hypothesis; photoelectric effect and Einstein's explanation, Compton effect, light as a particle, wave-particle duality, , quantum structure of nature

9. Failure of classical physics II - particles as waves: de Broglie's matter wave concept; diffraction of particle waves (Davisson-Germer-experiment, double slit interference).

10. Wave mechanics: wave packets, phase and group velocity (recap of 11-EM), uncertainty principle, Nyquist-Shannon theorem, wave function as probability amplitude, probability of residence, measurement process in quantum mechanics (double-slit experiment & which-way information, collapse of the wave function, Schrödinger's cat).

11. Mathematical concepts of quantum mechanics: Schrödinger equation as wave equation, conceptual comparison to wave optics, free particle and particles in a potential, time-independent Schrödinger equation as eigenvalue equation, simple examples in 1D (potential step, potential barrier and tunnel effect, box potential and energy quantization, harmonic oscillator), box potential in higher dimensions and degeneracy, formal theory of QM (states, operators, observables).

Intended learning outcomes

The students understand the basic principles and contexts of radiation, wave and quantum optics. They understand the theoretical concepts and know the structure and application of important optical instruments and measuring methods. They are able to apply mathematical methods to the formulation of physical contexts and autonomously apply their knowledge to the solution of mathematical-physical tasks.

 $\pmb{\textbf{Courses}} \ (type, number of weekly \ contact \ hours, \ language - if \ other \ than \ German)$

V (4) + Ü (2)

Module taught in: Ü: German or English

Bachelor's with 1 major Mathematics (2015)
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Aethod of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether
nodule is creditable for bonus)
ritten examination (approx. 120 minutes)
anguage of assessment: German and/or English
llocation of places
dditional information
Vorkload
40 h
eaching cycle
eferred to in LPO I (examination regulations for teaching-degree programmes)
Nodule appears in
achelor's degree (1 major) Mathematics (2015)
achelor's degree (1 major) Mathematical Physics (2015)
achelor's degree (1 major) Computational Mathematics (2015)
achelor's degree (1 major, 1 minor) Physics (Minor, 2015)
achelor's degree (1 major) Mathematical Physics (2016)
achelor's degree (1 major) Mathematical Physics (2020)
achelor's degree (1 major, 1 minor) Physics (Minor, 2020)
achelor's degree (1 major) Mathematics (2023)
xchange program Physics (2023)
achelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 337 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation
Atoms	and Qu	ianta			11-E-A-152-m01
Module	e coord	inator		Module offered by	
Managing Director of the Institute of Applied Physics Faculty of Physics and Astron		and Astronomy			
ECTS Method of grading Only		Only after succ. compl. of module(s)			
8	8 numerical grade				
Duration Module level Other pr		Other prerequisites	5		
1 semester undergraduate					
Conten	its				

 Structure of atoms: Experimental evidence for the existence of atoms, size of the atom, charges and masses in the atom, isotopes, internal structure, Rutherford experiment, instability of the "classical" Rutherford atom.
 Quantum mechanical foundations of Atomic Physics (short recap of part A.): Light as particle beam, particles as waves, wave functions and probability of presence, uncertainty relation and stability of atoms, energy quantisation in atoms, Franck-Hertz experiment, atomic spectra, Bohr's model and its limitations, non-relativistic Schrödinger equation.

3. The non-relativistic hydrogen atom: Hydrogen and hydrogen-like atoms, central potential and angular momentum in QM, Schrödinger equation of the H-atom, atomic orbitals: Radial and angular wave functions, quantum numbers, energy eigenvalues.

4. Atoms in external fields: orbital magnetic dipole moment, gyromagnetic ratio, magentic fields: normal Zeeman effect, electrical fields: Stark effect.

5. Fine and hyperfine structure: Electron spin and magnetic spin moment, Stern-Gerlach experiment, Einstein-de Haas effect, glimpse of the Dirac equation (spin as a relativistic phenomenon and existence of antimatter), electron spin resonance (ESR), spin-orbit interaction, relativistic fine structure, Lamb shift (quantum electrodynamics), nuclear spin and hyperfine structure.

6. Multi-electron atoms: Helium atom as simplest example, indistinguishability of identical particles, (anti)symmetry with respect to particle exchange, fermions and bosons, relation to spin, Pauli principle, orbital and spin wave function of two-particle systems (spin singlets and triplets), LS- and jj-coupling, Periodic Table of the Elements, Aufbau principles and Hund's rules.

7. Light-matter interaction: Time-dependent perturbation theory (Fermi's Golden Rule) and optical transitions, matrix elements and dipole approximation, selection rules and symmetry, line broadening (lifespan, Doppler effect, collision broadening), atomic spectroscopy.

8. Laser: Elementary optical processes (absorption, spontaneous and stimulated emission), stimulated emission as light amplification, Einstein's rate equations, thermal equilibrium, non-equilibrium character of a laser: Rate equations, population inversion and laser condition, basic structure of a laser, optical pumping, 2-, 3- and 4-level lasers, examples (ruby laser, He-Ne laser, semiconductor laser).

9. Inner-shell excitations and X-ray physics: Generation of x-radiation, bremsstrahlung and characteristic spectrum, X-ray emission for elemental analysis (EDX), X-ray absorption and contrast formation in X-ray images, X-ray photoemission, non-radiative Auger processes, synchrotron radiation, application examples.

10. Molecules and chemical bonding: Molecular hydrogen ion (H2+) as simplest example: Rigid molecule approximation and LCAO approach, bonding and anti-bonding molecular orbitals, hydrogen molecule (H2): Molecular orbital vs. Heitler-London approximation, diatomic heteronuclear molecules: covalent vs. ionic bonding, van der Waals bonds and Lennard-Jones potential, (time allowing: conjugated molecules).

11. Molecule rotations and vibrations: Born-Oppenheimer approximation, energy levels of the rigid rotator (symmetric and asymmetrical molecules), centrifugal expansion, molecule as (an)harmonic oscillator, Morse potential, normal modes, vibrational-rotational interaction.

12. Molecular spectroscopy: Transition matrix elements, vibrational spectroscopy: Infrared spectroscopy and Raman effect, vibrational-rotational transitions: Fortrat diagram, electronic transitions: Franck-Condon principle.

Intended learning outcomes

The students understand the basic principles and contexts of quantum phenomena as well as Atomic and Molecular Physics. They understand the ideas and concepts of quantum theory and Astrophysics and the relevant experiments to observe and measure quantum phenomena. They are able to apply mathematical methods to the

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 338 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

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formulation of physical contexts and autonomously apply their knowledge to the solution of mathematical-phys cal tasks.
Courses (type, number of weekly contact hours, language — if other than German)
V (4) + Ü (2) Module taught in: Ü: German or English
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)
written examination (approx. 120 minutes) Language of assessment: German and/or English
Allocation of places
Additional information
Workload
240 h
Teaching cycle
Referred to in LPO I (examination regulations for teaching-degree programmes)
Module appears in
Bachelor's degree (1 major) Mathematics (2015)
Bachelor's degree (1 major) Mathematical Physics (2015)
Bachelor's degree (1 major) Computational Mathematics (2015)
Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015)
Bachelor's degree (1 major) Mathematical Physics (2016)
Bachelor's degree (1 major) Mathematical Physics (2020)
Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020)
Bachelor's degree (1 major) Mathematics (2023)
exchange program Physics (2023)
Bachelor's degree (1 major) Mathematical Physics (2024)

Module	Module title				Abbreviation	
Introdu	ntroduction to Solid State Physics 11-E-F-152-m01					
Module coordinator				Module offered by		
Manag	ing Dir	ector of the Institute of	Applied Physics	Faculty of Physics a	ind Astronomy	
ECTS	Meth	od of grading	Only after succ. compl. of module(s)			
8	nume	rical grade				
Duratio	Duration Module level Other prerequisites					
1 seme	ster	undergraduate				
Conten	Its					
Somme deman 2. Crys tice de tronic p 3. The theory: 4. Strue electro 5. lattic branch examp 6. Ther therma 7. Elect strongl on 8. Supe ticle as	 The free-electron gas (FEG), free electrons; density of states; Pauli principle; Fermi-Dirac statistics; spec. heat, Sommerfeld coefficient; electrons in fields: Drude-Lorentz-Sommerfeld; electrical and thermal conductivity, Wie- demann-Franz law; Hall effect; limitations of the model Crystal structure, periodic lattice; types of lattices; Bravais lattice; Miller indices; simple crystal structures; lat- tice defects; polycrystals; amorphous solids; group theoretical approaches, the importance of symmetry for elec- tronic properties The reciprocal lattice (RG), motivation: Diffraction; Bragg condition; definition; Brillouin zones; diffraction theory: Scattering; Ewald construction; Bragg equation; Laue's equation; structure and form factor Structure determination, probes: X-ray, electron, neutron; methods: Laue, Debye-Scherrer, rotating crystal; electron diffraction, LEED lattice vibrations (phonons), equations of motion; dispersion; group velocity; diatomic base: optical, acoustic branch; quantisation: Phonon momentum; optical properties in the infrared; dielectric function (Lorentz model); examples of dispersion curves (occ. Kramers-Kronig), measurement methods Thermal properties of insulators, Einstein and Debye model; phonon density of states; anharmonicity and thermal expansion; thermal conductivity; Umklapp processes; crystal defects Electrons in a periodic potential, Bloch theorem; band structure; approximation of nearly free electrons (NFE); strongly bound electrons (tight binding, LCAO); examples of band structures, Fermi surfaces, spin-orbit interacti- on Superconductivity, BCS theory, pairing, coupling of bosonic and fermionic modes, band structure, many-par- ticle aspects (quasiparticle concept) 					
Intend	ed lear	ning outcomes				
dynam ture of Solid-S	ics, the solids State Pł	ermal properties, princi and know the experime sysics. They are able to	ontexts and principles ples of electronic prope ental methods and theo apply mathematical m e to the solution of mat	erties (free electron g pretical models for th ethods to the formul	gas)). They understar ne description of phe ation of physical cor	nd the struc- momena of
Course	S (type, I	number of weekly contact hour	rs, language — if other than Ge	rman)		
V (4) + Module	• • •	t in: Ü: German or Engl	ish			
		s essment (type, scope, lang ble for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
written examination (approx. 120 minutes) Language of assessment: German and/or English						
Allocation of places						
Additional information						
Worklo	Workload					
240 h						
<u> </u>						
Bachelor's	with 1 ma	jor Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 340 / 406

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 341 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
Nuclea	r and El	ementary Particle Phy	sics		11-E-T-152-m01	
Module coordinator				Module offered by		
Managi	ng Dire	ctor of the Institute of	Applied Physics	Faculty of Physics a	nd Astronomy	
ECTS Method of grading Only after succ. compl. of module(s)						
6	numer	ical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
charge 3. Nucle 4. Struct spin-orl 5. Radio 6. Nucle the che 7. Radia duction 8. Instru 9. Elect 10. Stro confine 11. Wea ce, excl	 Methods of Nuclear Physics, scattering and spectroscopy, nuclear radius, composition of matter, mass and charge distribution in the nucleus, the discovery of the proton and neutron Nuclear models, the mass of the atomic nuclei, droplet model, bonding energy, nuclear shell model Structure of cores, angular momentum, spin, parity, mag. and electr. moments, collective excitation forms, spin-orbit interaction Radioactivity and spectroscopy, radioactive decay, natural and civilisational sources of ionising radiation Nuclear energy, nuclear fission, nuclear reactors, nuclear fusion, star power, star development, formation of the chemical elements of hydrogen Radiation and matter, interaction of radiation and matter, Bethe-Bloch formula, photoelectric effect, pair production Instruments, accelerators and detectors Electromagnetic interaction, differential cross section, virtual photons, Feynman graphs, exchange interaction to. Strong interaction, quarks, gluons, colour and degree of freedom, deep-inelastic electron-proton scattering, confinement, asymptotic freedom, particle zoo, isospin, strangeness, SU (3) symmetry, antiprotons Weak interaction, cracked mirror symmetries, Wu experiment, charge conjugation, time reversal, CP invariance, exchange particles, W and Z, neutrinos, neutrino vibrations 					
		nodel, three families o	f leptons and quarks, q	uark-lepton symmet	ry, Higgs boson, free	e parameters
	ave an o		onnections between fu nental observations of			
Course	S (type, n	umber of weekly contact hour	s, language — if other than Ge	rman)		
V (3) + I Module		t in: Ü: German or Engl	ish			
module is written	creditabl examir	essment (type, scope, lang le for bonus) nation (approx. 120 mi ssessment: German ar		examination offered — if no	nt every semester, informati	on on whether
Allocati	-		. 0			
Additio	nal info	ormation				
Workload						
180 h						
Teaching cycle						
	5 - 9 - 1					
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
Bachelor's	with 1 maj	or Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 342 / 406

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 343 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Theoretical Mechanics					11-T-M-152-m01	
Module coordinator				Module offered by		
Managing Director of the Institute of Theoretical Physics and Astrophysics						
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
8	numei	rical grade				
Duration	n	Module level	Other prerequisites			
1 semes	ster	undergraduate	13 exercise sheets p approx. 50% of exer	site to assessment: o per semester). Stude rcises will qualify for students about the re	nts who successfully admission to asses	y completed sment. The
Content	S					
 Lagrangian formulation: Variational principles, Euler-Lagrange equation; constraints; coordinate transformations, mechanical gauge transformation; symmetries, Noether theorem, cyclic coordinates; accelerated reference systems and apparent forces; Hamiltonian formulation: Legendre transformation, phase space; Hamilton function, canonical equations; Poisson brackets, canonical transformations; generator of symmetries, conservation laws; minimal coupling; Liouville theorem; Hamilton-Jacobi formulation [optional]; Applications: Central-force problems; mechanical similarity, Virial theorem; minor vibrations; particles in an electromagnetic field; rigid bodies, torque and inertia tensor, centrifugal and Euler equations [optional]; scattering, cross section [optional]; Relativistic dynamics: Lorentz Transformation; Minkowski space; equations of motion; 6. Non-linear dyna- 						
		ning outcomes	ptional]; deterministic			
miliar w dently a	ith the pply th	principles of theoretic ne acquired mathemat	iences concerning the v cal mechanics and their ical methods and techr pecially acquired know	r different formulatio niques to simple prol	ns. They are able to blems of Theoretical	indepen-
Courses	i (type, n	umber of weekly contact hour	s, language — if other than Ge	rman)		
V (4) + Ü Module	• •	t in: Ü: German or Engl	ish			
		e essment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		nation (approx. 120 min ssessment: German ar				
Allocati	on of p	olaces				
Additional information						
this will 3 Senter find that gistratio ly regist sessmer sessmer	be con nce 4 A t the s on for a er for a nt was nt to w	nsidered a declaration ASPO (general academ tudent has obtained th assessment into effect. an assessment. Studer not put into effect will		on to assessment pu ulations). If the mod ission to assessmen nat meet the respect for an assessment of respective assessm e achieved in this as • generated 18-Apr-2025 • e	ursuant to Section 20 ule coordinators sub at, they will put the s ive prerequisites car or whose registration ent. If a student tak assessment will not b arm. reg.	o Subsection osequently student's re- n successful- n for an as- es an as-
			data record B	achelor (180 ECTS) Mathema	tik - 2015	

Workload

240 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 345 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation			
Quantu	Quantum Mechanics				11-T-Q-152-m01			
Module coordinator				Module offered by				
	ing Dire	ector of the Institute of	Theoretical Physics	Faculty of Physics a	and Astronomy			
ECTS		od of grading	Only after succ. cor	npl. of module(s)				
8	1	rical grade						
Duratio		Module level	Other prerequisites					
1 seme		undergraduate	Admission prerequi 13 exercise sheets p approx. 50% of exe	Admission prerequisite to assessment: completion of exercises (approx. 13 exercise sheets per semester). Students who successfully completed approx. 50% of exercises will qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning				
Conten	nts							
pulse n tionary 3. Form space a 4. Post certain 5. One- try prop 6. Spin two-lew 7. Angu solutio 8. Cent 9. Moti Gauge of a fre 10. Spi 11. Add 12. App time-de 13. Ato	neasure solution nalisation and Direct ulates of ty; Dimens perties; n-1/2 sy vel syste ular mo on of the tral pote ion in a transfo ee electe in-1/2 s lition of proxima epende ms with ucture a	ement; correspondence ons of SG on of QM: Eigenvalue e ac notation; represent of QM (and their interp sional problems: The h stems I: Theoretical de ems (qubits); mentum: Commutation e eigenvalue equation ential - hydrogen atom n electromagnetic field ystems II: Formulation f angular momenta: and methods: Station nt perturbation theory n several electrons: Ide and Hund's rules	using angular moment ary perturbation theory	s of QM; Ehrenfest the nificance of the eiger ensor products of sta trement; chronologic ential level; potentia tion; Spin 1/2 in the l alues of the angular oncrete); Coulomb potential; Zeeman effect; canc , Heisenberg and inte um algebra; (with examples); va	neorem; continuity nvalues of an oper ate spaces; cal development; e al barrier; potentia homogeneous may momentum opera ponical and kinetic r eraction represent riational method;	equation; sta- rator; state energy-time un- l well; symme- gnetic field; tors (abstract); momentum; ration; motion		
Intende	ed lear	ning outcomes						
miliar v technic	with the ques to	e principles of quantur	riences concerning the n theory. They are able uantum theory and to ir cal concepts.	to apply the acquired	d mathematical m	ethods and		
Course	S (type, r	number of weekly contact hou	rs, language — if other than Ge	rman)				
V (4) + Module		t in: Ü: German or Eng	lish					
		sessment (type, scope, lan le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, inform	nation on whether		
written	exami	nation (approx. 120 mi	inutoc)					
	age of a	ssessment: German a						

Allocation of places

Additional information

Registration: If a student registers for the exercises and obtains the qualification for admission to assessment, this will be considered a declaration of will to seek admission to assessment pursuant to Section 20 Subsection 3 Sentence 4 ASPO (general academic and examination regulations). If the module coordinators subsequently find that the student has obtained the qualification for admission to assessment, they will put the student's registration for assessment into effect. Only those students that meet the respective prerequisites can successfully register for an assessment. Students who did not register for an assessment or whose registration for an assessment was not put into effect will not be admitted to the respective assessment. If a student takes an assessment to which he/she has not been admitted, the grade achieved in this assessment will not be considered.

Workload

240 h

Teaching cycle

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Physics (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major) Physics (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major, 2023) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.
	data record Bachelor (180 FCTS) Mathematik - 2015

Module	title				Abbreviation	
Statisti	cal Phy	/sics			11-T-S-152-m01	
Module	coordi	nator		Module offered by		
Managi and Ast	-	ctor of the Institute of ics	Theoretical Physics	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
8	numer	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Content	ts					
cro-stat 1. Statis closed a 2. Ideal 3. Statis ralised 4. Therr thermoof 5. Ideal se-Einst 6. Syste ter simu 1 and 2 7. Critic BCS sup	es; Pro stical P and op systen stical P forces; nodyna dynam Systen tein co ems of ulation dimen al pher poercon	f statistics; elements o bability space (conditi- hysics: Entropy and pro- en systems (with energ ns: Spin systems; linea hysics and thermodyna- the second and third la amics: Thermodynamic ic machines (Carnot en ns II, quantum statistic ndensation; grids and r interacting particles: A (Monte Carlo method); sions); Yang-Lee-theore nomena: Scaling laws, ductivity); magnetism (of the thermodynamic li	onal probability, statis bability theory; entrop y and / or particle excl r oscillators; ideal gas mics: The 1st law; qua aw; reversibility; transi fundamentals relation gine and efficiency); cl s: Systems of identical normal modes: Phonor oproximation methods interacting phonons (ems; Van der Waals eq critical slowing down, quantum criticality at l	tical independence); by in classical physic hange); ; isi-static processes; ition from Statistical ship; thermodynami hemical potential; l particles; ideal Ferm hs; (mean-field theory, Debye approximation uation for real intera fast variable as Bad	s; thermodynamic entropy and tempera Physics to thermody c potentials; change ni gas; ideal Bose ga Sommerfeld expans n); Ising models (par cting gases; (electron-phonon inf	quilibrium in ature; gene- /namics; es of state; as and Bo- ion); compu- rticularities in teraction and
· · ·		ing outcomes				
The stu stical m	dents h Iechani	nave advanced knowled ics and thermodynamic indently apply them to	s. They are familiar wi	th the corresponding	mathematical meth	
Courses	5 (type, n	umber of weekly contact hours	, language — if other than Ge	rman)		
V (4) + Ü Module		t in: Ü: German or Engli	sh			
		essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	ion on whether
		nation (approx. 120 mir ssessment: German an				
Allocati	ion of p	laces				
Additio	nal info	ormation				
Worklo	ad					
240 h						
Teachin	ig cycle	9				
Referre	d to in	LPOI (examination regulation	ns for teaching-degree progra	ammes)		
Bachelor's v	with 1 maj	or Mathematics (2015)		g • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 348 / 406

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 349 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Electro	dynami	ics			11-T-E-152-m01	
Module	coord	inator		Module offered by		
Managi and Ast	•	ector of the Institute of T sics	heoretical Physics	Faculty of Physics a	nd Astronomy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
8	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Content	ts					
tence; I 1. Maxw 2. Elect multipo ment ac 3. Magr analogi 4. Maxw 5. Dyna waves; on; tem 6. Spec effect, effect ler effect Intende The stur- retical effect	Delta fu vell equ rostatio de expa ccordin netosta es to e well equ mics of wave p porally ial The energy riant el ct; Lore ed learr dents h	al tools: Gradient, dive unction; Fourier transfor uations; cs: Coulomb's law; elec ansion; Boundary value g to orthogonal functio tics: Current density; co lectrostatics; uations in matter: Electu f electromagnetic fields backets; plane waves in v oscillating sources and ory of Relativity: Lorent: and momentum; co- an ectrodynamics: Field st entz force hing outcomes nave advanced knowled dynamics. They are fam bly them to the descripti	m; full functional system; full functional system; for the system of the system; for the system of t	ems; solving PDEs; arged interface; elect solution; Image char ctor potential; Biot-Sa ceptibility; interfaces CL-circuits; field ener cors and wave guides elerated point charg ity; length contraction rs; covariant classica cwell's equations; tra Theoretical Physics.	rostatic field energy ges; Green's functio avart law; magnetic s; rgy and pulse; poter s; inhomogeneous w es; on and time dilation; al mechanics; ansformation of the f	y (capacitor); ons; develop- moment; ntials; plane vave equati- ; light cone; fields; Dopp- iples of theo-
Courses	5 (type, n	umber of weekly contact hours	, language — if other than Ger	rman)		
V (4) + l Module		t in: Ü: German or Englis	sh			
		essment (type, scope, langu le for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
		nation (approx. 120 min ssessment: German and				
Allocati	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
240 h						
Teachin	ig cycl	9				
Referre	d to in	LPOI (examination regulatio	ns for teaching-degree progra	mmes)		
Bachelor's v	with 1 maj	or Mathematics (2015)	-	; • generated 18-Apr-2025 • e. achelor (180 ECTS) Mathemat	-	page 350 / 406

Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Nanostructure Technology (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015) Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major, 1 minor) Physics (Minor, 2020) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Mathematics (2023) exchange program Physics (2023)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 351 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Focus Economics

(30 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 352 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation
Introdu	ction to Business Admi	inistratior	n		12-EBWL-G-152-m01
Module	coordinator			Module offered by	
holder o Organis	of the Chair for Human sation	Resource	Management and	Faculty of Managem	nent and Economics
ECTS	IS Method of grading Only after se		Only after succ. con	npl. of module(s)	
5	numerical grade				
Duratio	n Module level		Other prerequisites		
1 semes	ster undergraduate				
Content	ts				
behavic behave Outline 1. What 2. Why 3. Organ 4. Goals 5. Strate 6. From 7. Empi Intende After co ses as p	our of business enterpri- and in what form they of syllabus is business administra do organisations exist? nisational forms s, strategies and organi egic decisions of entrep the research questions rical research in organi ed learning outcomes ompleting the module, sport of modern busines	ises. The c are organi ition? sation str preneurs s to causa sation - so students s s adminis	course focuses on w ised. For this purpos ructures of enterpris Il relationships ome selected examp should be able to de tration as a scientif	hat companies or ot se, the focus lies on es bles escribe and understa ic discipline. They als	nethods necessary to analyse the ther organisations are, how they the organisation of enterprises. nd the organisation of enterpri- so should master an appropriate evel of a first grade lecture and tu-
	S (type, number of weekly cont	act hours, lar	nguage — if other than Gei	rman)	
V(2) + 1					
	creditable for bonus)	ope, language	e — If other than German,	examination offered — If no	t every semester, information on whether
written	examination (approx. 6	o minute:	s)		
Allocati	ion of places				
Manage (BSc wir as well (60 ECT allocate will be a ready a ved, pla applica ta 3 (25	estrictions with regard t ement and Economics) th 180 ECTS credits), W as Bachelor's students S credits). (2) The rema ed in accordance with (2 allocated according to t chieved in the respectiv aces will be allocated b nt; among applicants w 0% of places): lottery.	(BSc with irtschafts with the r aining place and the che follow ve degree y lot. b) Q	180 ECTS credits), N informatik (Busines minor Wirtschaftswi ces will be allocated number of applicat ing quotas: a) Quot subject; among ap uota 2 (25 % of plac	Wirtschaftsmathema s Information Systen ssenschaft (Busines I to students of other tions exceeds the nu a 1 (50 % of places): plicants with the sam ces): number of subje	schaftswissenschaft (Business tik (Mathematics for Economics) ns) (BSc with 180 ECTS credits) s Management and Economics) r subjects. (3) When places are mber of available places, places total number of ECTS credits al- ne number of ECTS credits achie- ect semesters of the respective s will be allocated by lot. c) Quo-
Additio	nal information				

Workload

150 h

Teaching cycle

Teaching cycle: winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 354 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title			Abbreviation
Introduction to Economics			12-EVWL-G-152-m01
Module coordinator		Module offered by	
holder of the Senior Professorship for and International Economic Relations	Economics, Money	Faculty of Managen	nent and Economics
ECTS Method of grading	Only after succ. con	npl. of module(s)	
5 numerical grade			
Duration Module level	Other prerequisites		
1 semester undergraduate			
Contents			
The course deals with the following top 1. Economics shows how markets func 2. The division of labour is the basis of 3. The market in action 4. Monopolies and cartels endanger m 5. The labour market and the role of ur 6. The government's role in a social mar 7. Governmental redistribution guaran 8. Environmental policy and the govern 9. Objectives and agents in the macro 10How do aggregate supply and dema 11.The role of fiscal policy 12How does a central bank stabilise ag Intended learning outcomes By completing this course, students re grasp microeconomic as well as macro Courses (type, number of weekly contact hours, V (2) + T (2)	tion our wealth arket economies tions arket economy tees the social baland ment's allocation fur economy nd come into equilibr ggregate demand by s ceive a fundamental peconomic subjects a	nction fium? setting interest rates understanding of eco nd to analyze them i	? onomics. Students are able to
Method of assessment (type, scope, langua	age — if other than German,	examination offered — if no	t every semester, information on whether
module is creditable for bonus)			
written examination (approx. 60 minut	.es)		
Allocation of places 840 places. (1) No restrictions with regard to availa Management and Economics) (BSc wit (BSc with 180 ECTS credits), Wirtschaft as well as Bachelor's students with the (60 ECTS credits). (2) The remaining pl allocated in accordance with (2) and th will be allocated according to the follo ready achieved in the respective degree ved, places will be allocated by lot. b) applicant; among applicants with the ta 3 (25 % of places): lottery. Additional information	h 180 ECTS credits), N tsinformatik (Busines e minor Wirtschaftswi aces will be allocated ne number of applicat wing quotas: a) Quot e subject; among ap Quota 2 (25 % of plac	Wirtschaftsmathema s Information Systen ssenschaft (Busines I to students of other tions exceeds the nu a 1 (50 % of places): plicants with the san ces): number of subje	tik (Mathematics for Economics) ns) (BSc with 180 ECTS credits) s Management and Economics) r subjects. (3) When places are mber of available places, places total number of ECTS credits al- ne number of ECTS credits achie- ect semesters of the respective
Workload			
150 h			

150 h

Bachelor's with 1 major Mathematics (2015)
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Teaching cycle

Teaching cycle: no courses offered

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 356 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation	
Financi	ial Acco	ounting			12-ExtUR-G-152-m01	_
Module	e coord	inator		Module offered by	<u> </u>	
	of the (gement and Business		nent and Economics	
ECTS	1	od of grading	Only after succ. con	ıpl. of module(s)		
5	nume	rical grade		· · · · · · · · · · · · · · · · · · ·		
Duratio	· · · · · · · · · · · · · · · · · · ·	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conten						
ble-ent ties an	try book d equit	-keeping as well as the y according to German	e fundamentals of reco		ncluding the technique of onder the second of a second	
Intend	ed learı	ning outcomes				
			ng of the fundamental .e. they are able to solv		ting. They are able to arran	ge, re
•			s, language — if other than Ger		, problems.	
V (2) +	_	umber of weekly contact hour.		many		
		essment (type scope lang	uage — if other than German	examination offered — if no	ot every semester, information on wh	ether
		le for bonus)			every semester, monitation on wi	ether
written	ı examiı	nation (approx. 60 min	utes)			
Allocat	tion of p	olaces				
(BSc w as well (60 EC allocat will be ready a ved, pl applica	ith 180 I as Bac TS cred ed in ac allocat achieve laces wi ant; am	ECTS credits), Wirtscha helor's students with t its). (2) The remaining cordance with (2) and ed according to the foll d in the respective deg Il be allocated by lot. b	aftsinformatik (Busines he minor Wirtschaftswi places will be allocated the number of applicat owing quotas: a) Quota ree subject; among app) Quota 2 (25 % of place	s Information Syster ssenschaft (Busines I to students of othe ions exceeds the nu a 1 (50 % of places): plicants with the san ces): number of subj	tik (Mathematics for Econo ns) (BSc with 180 ECTS cred s Management and Econor r subjects. (3) When places unber of available places, p total number of ECTS credits ne number of ECTS credits a ect semesters of the respect s will be allocated by lot. c)	lits) nics) are laces s al- chie tive
Additio	onal info	ormation				
Worklo	oad					
150 h						
-	ng cycl	e				
- cuciii						
	ng cycle	e: winter semester				
Teachi			ons for teaching-degree progra	mmes)		
Teachi			ons for teaching-degree progra	mmes)		
Teachi Referre 	ed to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)		
Teachin Referre Bachel Bachel Bachel Bachel	ed to in e appea lor's deg lor's deg lor's deg	LPOI (examination regulati ars in gree (1 major) Compute gree (1 major) Mathema gree (1 major) Business	er Science (2015) atics (2015) 5 Management and Eco			
Teachii Referre Bachel Bachel Bachel Bachel Bachel	ed to in e appea lor's deg lor's deg lor's deg lor's deg	LPOI (examination regulati ars in gree (1 major) Compute gree (1 major) Mathema	er Science (2015) atics (2015) 5 Management and Eco athematics (2015)		ixam. reg. page 35	7 / 40

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Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Management and Economics (Minor, 2019) Bachelor's degree (1 major) Business Information Systems (2020)

Module title					Abbreviation	
Managerial Accounting 12-IntUR-G-152-m01					12-IntUR-G-152-m01	
Module coordinator				Module offered by		
holder of the Chair of Business Manage and Accounting			ement, Controlling	Faculty of Management and Economics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Content: This course offers an introduction to aims and methods of managerial accounting (cost accounting). Outline of syllabus: 1. Managerial accounting and financial accounting 2. Managerial accounting: basic terms 3. Different types of costs 4. Cost centre accounting based on total costs 5. Job costing based on total costs 6. Cost centre accounting and job costing based on direct/variable costs 7. Budgeting and cost-variance analysis 8. Cost-volume-profit analysis 9. Cost information and operating decisions						
Reading: Coenenberg/Fischer/Günther: Kostenrechnung und Kostenanalyse, Stuttgart. Friedl/Hofmann/Pedell: Kostenrechnung. Eine entscheidungsorientierte Einführung. (most recent editions)						
		ning outcomes				
After completing the course "Management Accounting and Control", the students will be able to (i) set out the responsibilities of the company's internal accounting and control; (ii) define the central concepts of internal enterprise computing restriction and control and assign case studies the terms; (iii) apply the basic methods of internal corporate accounting and control on a full and cost base to idealized ca- se studies of medium difficulty that calculate relevant costs and benefits and take on this basis a reasoned deci- sion.						
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ge	rman)		
V (2) +						
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether	
written examination (approx. 60 minutes)						
Allocat	ion of p	olaces				
Manage (BSc wi as well (60 ECT allocate	estricti ement ith 180 as Bac IS cred ed in ac	and Economics) (BSc with ECTS credits), Wirtschaft helor's students with the its). (2) The remaining pla ccordance with (2) and th	h 180 ECTS credits), \ sinformatik (Busines minor Wirtschaftswi aces will be allocated ne number of applica	Wirtschaftsmathema s Information Systen ssenschaft (Busines I to students of othe tions exceeds the nu	schaftswissenschaft (Business tik (Mathematics for Economics) ns) (BSc with 180 ECTS credits) s Management and Economics) r subjects. (3) When places are mber of available places, places total number of ECTS credits al-	

 Bachelor's with 1 major Mathematics (2015)
 JMU Würzburg • generated 18-Apr-2025 • exam. reg.
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 data record Bachelor (180 ECTS) Mathematik - 2015
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ready achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery. (4) A waiting list will be maintained and places re-allocated by lot as they become available.

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

_		_

Module appears in	Mod	ule a	ppears	in
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Bachelor's degree (1 major) Computer Science (2015)

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015)

Dachelor's degree (1 major) business Management and Economics

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Bachelor's degree (1 major) Computer Science (2017)

Bachelor's degree (1 major) Computer Science (2019)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 360 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
Microe	conom	ics 1		12-Mik1-G-152-m01		
Module	e coord	inator		Module offered by		
holder (formati		Chair for Economics, Cont nomics	tract Theory and In-	Faculty of Managem	nent and Economics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
a theory of aggregate economic outcomes, which then can be applied for conducting welfare analysis and giving policy advice. This lecture addresses the core building block of this thought complex: individual decision making and behavior. Specifically, students will come to understand the determinants of demand and supply behavior in final-good markets, i.e., how households allocate their feasible income to different products and how firms determine which products to offer. Furthermore, it will be analyzed how this behavior changes in response to a change in the economic environment such as a change in a household's feasible income or in the market price of a product. Throughout the lecture, we will work with precise mathematical formalizations of the ideas that we want to think and talk about. In this regard, a solid understanding of the basics of differential calculus is required. Further ma-						
 thematical knowledge is not required. The material covered in the lecture can be reviewed in the following textbooks: Varian: "Intermediate Microeconomimcs" Pindyck und Rubinfeld: "Microeconomics" Nechyba: "Microeconomics - An Intuitive Approach with Calculus" 						
		ning outcomes				
• e: • a	 After completing the course students will be able to explain essential findings of microeconomic theory, apply the involved methods to given stylized examples on their own, 					
		number of weekly contact hours, l	anguage — if other than Ger	man)		
module is	d of ass creditab	le for bonus)		examination offered — if no	t every semester, information on whether	
		nation (approx. 60 minut ssessment: German and,				
Allocat	ion of p	olaces				
Manage (BSc wi as well (60 ECT allocate will be ready a	estricti ement ith 180 as Bac IS cred ed in ad allocat cchieve	and Economics) (BSc with ECTS credits), Wirtschaft helor's students with the its). (2) The remaining pla ccordance with (2) and th ed according to the follow d in the respective degre	h 180 ECTS credits), N sinformatik (Busines minor Wirtschaftswi aces will be allocated ne number of applicat wing quotas: a) Quota e subject; among app	Virtschaftsmathemat s Information Systen ssenschaft (Busines I to students of other tions exceeds the nu a 1 (50 % of places): plicants with the sam	schaftswissenschaft (Business tik (Mathematics for Economics) ns) (BSc with 180 ECTS credits) s Management and Economics) r subjects. (3) When places are mber of available places, places total number of ECTS credits al- ne number of ECTS credits achie- ect semesters of the respective	

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 361 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	10571

applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery.

Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 362 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

			ſ	
Module title			Abbreviation	
Microeconomics 2			12-Mik2-G-152-m01	
Module coordinator		Module offered by		
holder of the Chair of Industrial Econor	nics	Faculty of Managen	nent and Economics	
ECTS Method of grading	Only after succ. com	pl. of module(s)		
5 numerical grade				
Duration Module level	Other prerequisites			
1 semester undergraduate				
Contents				
Outline of syllabus: 1. Cost minimisation 2. Profit maximisation and the supply function 3. Short-run market equilibrium 4. Long-run market equilibrium 5. Government interventions 6. Monopoly 7. Pricing strategies with market power 8. Introduction to game theory 9. Strategic interaction and oligopoly Intended learning outcomes The aim of the course is to understand how markets work. We will investigate the behavior of a company in different market structures; namely perfectly competitive markets, monopoly markets and all forms in between, the so-called oligopoly markets. Ultimately, we are interested in whether the market results from a social point of view is desirable. Using our models, we will also try to analyze the consequences of different government interventions. The knowledge that students gain in this course will be in their future course of studies of benefits to them. In almost all business and economics lectures markets play a role. It also discussed in detail how eco-				
This knowledge will also be useful in th Courses (type, number of weekly contact hours, I	· · ·	•	25.	
V(2) + T(2)				
Method of assessment (type, scope, langua module is creditable for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
written examination (approx. 60 minute Language of assessment: German and				
Allocation of places				
620 places. (1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery.				
Additional information				

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.
	data record Bachelor (180 ECTS) Mathematik - 2015

Workload

150 h

Teaching cycle

Teaching cycle: winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 364 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Module title A				Abbreviation		
Macroe	Macroeconomics 1 12-Mak1-G-152-mo1					
Module	e coord	inator		Module offered by		
holder	of the (Chair of International Eco	nomics	Faculty of Managem	nent and Economics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5		rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme		undergraduate				
Conten						
<u>Conten</u>	<u>t</u>					
The course covers basic macroeconomic relationships, the explanation of employment, production, the interest rate, the current and capital accounts, nominal and real exchange rates, the price level and inflation both for the long-run where wages and prices are flexible and for the short-run which is characterized by nominal rigidities. The course teaches concepts which are of key importance in the globalized environment (e.g. interest rate arbitrage, purchasing power parity). These concepts are applied to current research questions (e.g. trade deficits, issues pertaining to the Euro-Zone, developments such as the great recession or the Covid-recession).						
<u>Outline</u>	<u>.</u>					
Кеу Ма	croeco	nomic Issues and Variab	les			
1 Macro	oecono	mics – the key issues				
2 Meas	uring e	conomic activity				
The ecc	onomy	in the long-run				
3 The c	lassica	l model: closed economy	,			
4 Mone	ey and i	nflations				
5 The cl	lassica	l model: open economy				
6 Unem	nploym	ent				
The ecc	onomy	in the short-run				
7 An int	troduct	ion to fluctuations				
8 IS-LM	l-Mode	l: closed economy				
9 IS-LM	l-Mode	l: open economy				
10 Aggr	regate S	Supply and the Phillips-C	urve			
Literature:						
Recent editions of:						
Gregory Mankiw: Macroeconomics						
Olivier Blanchard and David H. Johnson, Macroeconomics Prentice Hall						
Michael Burda and Charles Wyplosz: Macroeconomics. A European Text.						
		velops several case stud				
Bachelor's	with 1 ma	jor Mathematics (2015)		; • generated 18-Apr-2025 • e. achelor (180 ECTS) Mathemat	-	page 365 / 406

Intended learning outcomes

Students acquire the ability to critically understand key macroeconomic trends and developments such as the factors explaining production, employment and unemployment, and inflation. They are enabled to understand and defend the causes and consequences of the evolution of macroeconomies and of macroeconomic policies both analytically as well as in an intuitive manner. The acquire the scientific knowledge to evaluate macroeconomic issues and controversies (e.g. the trade deficit, unemployment, monetary policies, minimum wages).

Courses (type, number of weekly contact hours, language - if other than German)

V (2) + T (2)

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes) Language of assessment: German and/or English

Allocation of places

840 places.

(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery.

Additional information

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Workload

150 h

Teaching cycle

Teaching cycle: winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 366 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Macroeconomics 2 12-Mak2-G-152-mo1				
Module coordinator	Module offered by			
holder of the Chair of Public Finance	Faculty of Managen	nent and Economics		
ECTS Method of grading Only after succ. co	mpl. of module(s)			
5 numerical grade				
Duration Module level Other prerequisite	S			
1 semester undergraduate				
Contents				
Description: The lecture provides an introduction to long run or dynami	c issues of macroecor	nomic theory and po	licy.	
Contents: 1. Growth theory and policy				
- The Solow modell				
- Automation, employment, growth and income distributio	n			
- Ideas, innovation and endogenous growth				
2. Microeconomic foundations of macroeconomics				
- Consumption and savings				
- Neoclassical investment theory				
3. Macroeconomic policy				
- Public debt and intergenerational redistribution				
- Public debt and pensions in the OLG model				
Lecture notes to be provided by Chair.				
Intended learning outcomes				
After completing the course "Macroeconomics 2" students th theory, they know the microeconomic foundations of m tertemporal budget constraint of the government. Therefor nal consequences of policy reforms by applying simple ec	odern macroeconomic re they are able to disc	theory and underst	and the in-	
Courses (type, number of weekly contact hours, language — if other than G	erman)			
V (2) + T (2)				
Method of assessment (type, scope, language — if other than German module is creditable for bonus)	, examination offered — if no	t every semester, informati	on on whether	
written examination (approx. 60 minutes) Language of assessment: German and/or English				
Allocation of places				
	Wirtschaftsmathema ss Information Syster	tik (Mathematics for ns) (BSc with 180 EC s Management and I ^{xam. reg.}	Economics) TS credits)	

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(60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery.

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

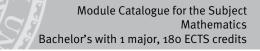
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Module appears in

Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 368 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

	e title				Abbreviation
Supply	r, Produ	iction and Operations	Management. An Introc	luction	12-BPL-G-152-m01
Module	e coord	inator		Module offered by	
holder Manag		Chair of Business Man	agement and Industrial	Faculty of Managen	nent and Economics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conten	nts				
					procurement, production and lo n to related planning procedu-
Intende	ed lear	ning outcomes			
The stu rate pro	udents ocurem	will be able to describe ent, production and lo		nterdependencies. F	esses in the domains of corpo- furthermore, they are capable of
Course	S (type, r	number of weekly contact hou	rs, language — if other than Ger	rman)	
V (2) +	T (2)				
		sessment (type, scope, lan le for bonus)	guage — if other than German, o	examination offered — if no	t every semester, information on whether
written	exami	nation (approx. 60 mir	utes)		
Allocat	tion of _l	olaces			
Manag (BSc wi as well (60 ECT allocate will be ready a ved, pl applica ta 3 (25	restricti rement ith 180 as Bac TS cred ed in a allocat achieve aces w ant; am 5 % of p ble.	and Economics) (BSc w ECTS credits), Wirtsch helor's students with its). (2) The remaining ccordance with (2) and ed according to the fol d in the respective deg ill be allocated by lot. I ong applicants with th	vith 180 ECTS credits), V aftsinformatik (Busines the minor Wirtschaftswi places will be allocated the number of applicat lowing quotas: a) Quota gree subject; among app b) Quota 2 (25 % of plac e same number of subje	Wirtschaftsmathema s Information Syster ssenschaft (Busines I to students of othe tions exceeds the nu a 1 (50 % of places): plicants with the san ces): number of subj ect semesters, place	schaftswissenschaft (Business tik (Mathematics for Economics ns) (BSc with 180 ECTS credits) s Management and Economics) r subjects. (3) When places are mber of available places, place total number of ECTS credits al- ne number of ECTS credits achie ect semesters of the respective s will be allocated by lot. c) Quo allocated by lot as they become
availab	nal inf				
		ormation			
Additio		ormation			
Additio Worklo		ormation			
Additio Worklo 150 h	oad				
Additio Worklo 150 h Teachin	oad ng cycl	e			
Additio Worklo 150 h Teachin Teachin	ng cycl ng cycl	e e: winter semester			
Additio Worklo 150 h Teachin Teachin	ng cycl ng cycl	e e: winter semester	ions for teaching-degree progra	mmes)	
Additio Worklo 150 h Teachin Teachin Referre	ng cycl ng cycl ng cyclo ed to in	e e: winter semester LPO I (examination regulat	ions for teaching-degree progra	mmes)	
Additio 150 h Teachin Teachin Referre Module	ng cycl ng cycl ed to in e appea	e e: winter semester LPOI (examination regulat ars in		mmes)	
Additio 150 h Teachin Teachin Referre Bachel	ng cycl ng cycl ed to in e appea or's de	e e: winter semester LPO I (examination regulat	er Science (2015)	Immes)	



Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019)

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Module title				Abbreviation		
Investn	Investment and Finance. An Introduction 12-I&F-G-152-mo1					
Module	coord	inator		Module offered by	_	
holder o Finance		Chair of Business Mana	gement and Corporate	Faculty of Managem	nent and Economics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	, <u>,</u>			
Conten	ts	U				
rized w	ith the	rovides an overview of basics of finance, inclu				ll be familia-
Structu	re:					
a. Finar b. Inves c. Inves d. Inves Part 2: 1 a. Form b. Capit	Part 1: Investment calculation a. Financial Mathematics: calculation of compound interest and annuities b. Investments under certainty c. Investments taking into account taxes d. Investments under uncertainty Part 2: Financing a. Forms of financing b. Capital structure policy (equity versus debt financing)					
· · · · · ·		licy (external versus int	ernal financing)			
		ning outcomes				
(i) unde (ii) solv	erstand	ng the course "Investm the fundamentals in fi tments decisions by m	nancial mathematics;			
lues;	tematiz	ze forms of financing ar	nd evaluate their applic	ation		
_		umber of weekly contact hours				
V (2) +		,,				
Method	l of ass	s essment (type, scope, langu le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informati	ion on whether
written	examir	nation (approx. 60 minu	ites)			
Allocat	ion of p	olaces				
620 places. (1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits al- ready achieved in the respective degree subject; among applicants with the same number of ECTS credits achie- ved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quo- ta 3 (25 % of places): lottery. (4) A waiting list will be maintained and places re-allocated by lot as they become available.						
Bachelor's	with 1 maj	or Mathematics (2015)	-	• generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 371 / 406

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Bachelor's degree (1 major) Computer Science (2015) Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Business Management and Economics (2015) Bachelor's degree (1 major) Economathematics (2015) Bachelor's degree (1 major) Business Information Systems (2015) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015) Master's degree (1 major) China Business and Economics (2016) Bachelor's degree (1 major) Business Information Systems (2016) Bachelor's degree (1 major) Economathematics (2017) Bachelor's degree (1 major) Computer Science (2017) Bachelor's degree (1 major) Computer Science (2019) Master's degree (1 major) China Business and Economics (2019) Bachelor's degree (1 major) Business Information Systems (2019) Bachelor's degree (1 major) Business Management and Economics (2019) Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019) Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.
	data record Bachelor (180 ECTS) Mathematik - 2015

Modul	e title				Abbreviation	
Introdu	uction t	o Market-Oriented Ma	nagement		12-Mark-G-152-mo1	
Modul	e coord	inator		Module offered by		
holder ting	of the (Chair of Business Admi	nistration and Marke-	Faculty of Managen	nent and Economics	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	undergraduate				
Conter	nts					
Conter With th	module nt: ne stake	cholder approach as a	the theoretical founda starting point, the basi ssical steps: situation a	c design of market-o	riented managemen	
ling. Th al purc sed on	ne cours hasing a conjo	se will focus not only of behaviour. A case stuc bint analysis will provic	n the behavioural appr ly introducing students le students with deepe	oaches of consumer to the fundamental	behaviour but also of principles of market	on industri-
1. Mark 2. Expl 3. Func 4. Stra	anatior dament tegic m	entrepreneurship and b is of consumer behavio als of market research arketing; marketing too	our	lue		
Wiesba Hombu Untern Hombu Untern Kroebe Meffert zepte - Meffert 4th ed. Meyer, Wiesba Porter, New Yo	, T. / Sw aden 20 urg, Ch. ehmen: urg, Ch. ehmen: er-Riel, V t, H. / B Instru t, H. / B ., Stuttg M.: Ök aden 19 M. E.: V ork 2012 , H. / Fa	911. : Grundlagen des Mark sführung, 4th revised a : Grundlagen des Mark sführung, 3rd ed., Wies N. /Weinberg, P.: Kons urman, Ch / Kirchgeorg mente Praxisbeispiel urman, Ch / Becker, Ch gart 2010. onomische Organisatio 95. Nettbewerbsvorteile 4. (Original: Porter, M.:	alten: Grundlagen Pe etingmanagements: Ein ind exp. ed., Wiesbade etingmanagements: Ein ibaden, 2012a. umentenverhalten, 9th g, M.: Marketing Grun e, 11th revised and exp n.: Internationales Marl on der Industrie: Netzw Spitzenleistungen erre Competitive Advantage agement, Strategie A	nführung in Strategie n 2012. nführung in Strategie ed., Munich 2009. dlagen marktorientie . ed., Wiesbaden 20 keting-Management erkarrangements zwi ichen und behaupter e, New York 1985.)	e, Instrumente, Umse e, Instrumente, Umse erter Unternehmenst 12. Ein markenorientie ischen Markt und Ur n, 8th ed., Campus F	etzung und etzung und führung: Kon erter Ansatz, hternehmung frankfurt /
Intend	ed lear	ning outcomes				
matica	ılly. In a		ding of business mana he acquired knowledge	-	-	
Course	es (type, r	umber of weekly contact hour	s, language — if other than Ge	rman)		
V (2) +	T (2)					
3achelor's	with 1 ma	or Mathematics (2015)		g ● generated 18-Apr-2025 ● e achelor (180 ECTS) Mathema	-	page 373 / 406
				. ,	-	

Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)

written examination (approx. 60 minutes)

Allocation of places

620 places.

(1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits already achieved in the respective degree subject; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quota 3 (25 % of places): lottery.

Additional information

Workload

150 h

Teaching cycle

Teaching cycle: summer semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's degree (1 major) Business Information Systems (2019)

Bachelor's degree (1 major) Business Management and Economics (2019)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2019)

Bachelor's degree (1 major) Business Information Systems (2020)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 374 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Introdu	ction t	o Economic Policy			12-WiPo-G-152-mo1	
Module	coord	inator		Module offered by		
		Chair of Labour Econom	ics		nent and Economics	
ECTS		od of grading	Only after succ. com	· · · ·		
5		rical grade				
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	Contents					
nment i the gov the way 1. Intro 2. Theo 3. Empi 4. Publi 5. Cost Main re New Yo Intende The aim governi will lea	This course provides an introduction into public economics/finance. Public finance studies the role of the gover- nment in the economy. It basically answers four questions: When should the government intervene? How might the government intervene? What is the effect of those interventions? Why do governments choose to intervene in the way that they do? The lecture will cover the following topics: 1. Introduction into public economics/finance 2. Theoretical toolkit 3. Empirical toolkit 4. Public goods 5. Cost Benefit Analysis Main reference for the lecture is Gruber, J. (2016): Public Finance and Public Policy, 5 th edition, Worth Publishers, New York. Intended learning outcomes The aim of the course is to provide students with and understanding of the public policy making process of the government and to endow them with the necessary skills to judge about and/or design public policies. Students will learn the core theoretical models of public economics as well as modern empirical methods of public fi-					How might o intervene in Publishers, cess of the es. Students
de ansv	wers to	public policy questions	5			
V (2) +						
Method	d of ass	s essment (type, scope, langu le for bonus)	uage — if other than German, e	examination offered — if no	ot every semester, informat	ion on whether
written	examiı	nation (approx. 60 minu	ites)			
Allocat	ion of p	olaces	-			
620 places. (1) No restrictions with regard to available places for Bachelor's students of Wirtschaftswissenschaft (Business Management and Economics) (BSc with 180 ECTS credits), Wirtschaftsmathematik (Mathematics for Economics) (BSc with 180 ECTS credits), Wirtschaftsinformatik (Business Information Systems) (BSc with 180 ECTS credits) as well as Bachelor's students with the minor Wirtschaftswissenschaft (Business Management and Economics) (60 ECTS credits). (2) The remaining places will be allocated to students of other subjects. (3) When places are allocated in accordance with (2) and the number of applications exceeds the number of available places, places will be allocated according to the following quotas: a) Quota 1 (50 % of places): total number of ECTS credits al- ready achieved in the respective degree subject; among applicants with the same number of ECTS credits achie- ved, places will be allocated by lot. b) Quota 2 (25 % of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. c) Quo- ta 3 (25 % of places): lottery.						
Additional information						
Worklo	ad					
150 h						
Bachelor's	with 1 maj	or Mathematics (2015)	-	• generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 375 / 406

Teaching cycle

Teaching cycle: winter semester

Referred to in LPO I (examination regulations for teaching-degree programmes)

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Module appears in

Bachelor's degree (1 major) Mathematics (2015)

Bachelor's degree (1 major) Business Management and Economics (2015)

Bachelor's degree (1 major) Economathematics (2015)

Bachelor's degree (1 major) Business Information Systems (2015)

Bachelor's degree (1 major) Political and Social Studies (2015)

Bachelor's degree (1 major, 1 minor) Business Management and Economics (Minor, 2015)

Master's degree (1 major) China Business and Economics (2016)

Bachelor's degree (1 major) Business Information Systems (2016)

Bachelor's degree (1 major) Economathematics (2017)

Master's degree (1 major) China Business and Economics (2019)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 376 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Key Skills Area (20 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 377 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



General Key Skills

(5 ECTS credits)

In addition to the modules listed below, students may also take modules offered by JMU as part of the pool of general transferable skills (ASQ).

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 378 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1



General Key Skills (subject-specific)

(ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 379 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Exercis	se tutor	or proof-reading in Ma	thematics		10-M-TuKo-152-mo	L
Module	e coord	inator		Module offered by	<u>I</u>	
Dean of Studies Mathematik (Mathematics			matics)	Institute of Mathem	natics	
			Only after succ. con			
5		successfully completed				
Duratio	<u></u>	Module level	Other prerequisites			
1 seme	-	undergraduate				
Conten						
		ading homework for on	 of the basic courses i	n the Bachelor's or t	eaching degree prog	rammes un-
		on of the respective lect			caching acgree prog	Jannies un
Intend	ed lear	ning outcomes				
The stu	udent is	able to support the ac	 quisition of mathemati	cal skills and knowle	edge. He/She helps	to identify
		athematical proof exer				,
Course	S (type, r	number of weekly contact hour	s, language — if other than Ger	man)		
Т (о)						
Metho	d of ass	sessment (type, scope, lang	uage — if other than German, (examination offered — if no	ot every semester, informati	ion on whether
		le for bonus)	-		•	
		f tutoring activities or c		rvising lecturers or e	exercise supervisors	(1 to 2 tea-
ching ι	units or	approx. 5 pieces of cor	recting work)			
Allocat	tion of p	olaces				
Additio	onal inf	ormation				
Please	direct	application to teaching	coordinator Mathemat	ics, he/she will sele	ct participants.	
Worklo	ad					
150 h						
Teachi	ng cvcl	e				
	0.7	-				
Referre	d to in	LPOI (examination regulati	ons for teaching-degree progra	mmes)		
§ 22						
Module		are in				
		gree (1 major) Mathema	atics (201r)			
		gree (1 major) Economa				
		gree (1 major) Mathema				
		gree (1 major) Computa	• •	015)		
		mination for the teachi		-		
Bachel	or's de	gree (1 major) Mathema	atical Physics (2016)			
Bachel	or's de	gree (1 major) Economa	thematics (2017)			
		mination for the teachi		Mathematics (2019)		
		gree (1 major) Mathema	-			
		gree (1 major) Economa				
		gree (1 major) Economa				
		gree (1 major) Mathema		22)		
		gram Mathematics (202 mination for the teachi		Mathematics (2022)		
		gree (1 major) Mathema		mathematics (2023)		
		or Mathematics (2015)		• generated 18-Apr-2025 • e	wam reg	page 380 / 406
sachelor's	with Tild	or mathematics (2015)	-	achelor (180 ECTS) Mathema		page 300 / 400

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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)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 381 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
E-Learn	ning an	d Blended Learning Mat	thematics 1		10-M-VHB1-152-mo	1
Madula		instar		Madula affared by	<u> </u>	
Module coordinator				Module offered by		
Dean of Studies Mathematik (Mathe				Institute of Mathem	latics	
ECTS		od of grading	Only after succ. com	ipl. of module(s)		
2		successfully completed				
Duratio	ion Module level Other prerequisites					
1 seme	ster	undergraduate				
Conten	ts					
Becom	ing farr	niliar with and reflecting	techniques in e-learni	ng and blended lear	ming in mathematics	5.
Intende	ed lear	ning outcomes				
		able to employ basic m	ethods of e-learning a	nd blended learning	in mathematics-	
		number of weekly contact hours			<u>, minatrematies</u>	
	J (type, f		i anguage — ii other tridii Ger	many		
Ü (2) Course	typere	Learning, mostly Virtue	lle Hochschule Ravern	(vhb)		
		sessment (type, scope, langu ele for bonus)	lage — If other than German, e	examination offered — if no	ot every semester, informat	ion on whether
	-	based, 15 to 20 hours)				
		ffered: Once a year, win	ter semester			
Allocat		*				
Allocat		Jaces				
			_			
Additio	nal inf	ormation				
			_			
Worklo	ad		_			
60 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulatio	ns for teaching-degree progra	mmes)		
Madula		are in				
Module			ting (ng 1 -)			
		gree (1 major) Mathema gree (1 major) Economa	-			
		gree (1 major) Economa gree (1 major) Mathema	-			
		gree (1 major) Mathema gree (1 major) Computat	,	015)		
		gree (1 major) Mathema		<i></i>		
		gree (1 major) Economa	•			
Bachel	or's de	gree (1 major) Mathema	tical Physics (2020)			
		gree (1 major) Economa				
		gree (1 major) Economa		,		
		gree (1 major) Mathema		22)		
		gram Mathematics (202				
		gree (1 major) Mathema groe (1 major) Economa	-			
	Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2027)					
	Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (1 major) Economathematics (2024)					
		gree (1 major) Economa	•			
		jor Mathematics (2015)	JMU Würzburg	• generated 18-Apr-2025 • e		page 382 / 406
			data record B	achelor (180 ECTS) Mathema	tik - 2015	

Module	e title				Abbreviation	
E-Learn	ing an	d Blended Learning Ma	thematics 2		10-M-VHB2-152-mc	1
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Mathematik (Mather	natics)	Institute of Mathem	natics	
ECTS		od of grading	Only after succ. con			
2		successfully completed				
Duratio		Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts	0				
Becoming familiar with and reflecting techniques in e-learning and blended learning in mathematics.						
		ning outcomes		ing and blended leaf		J.
						_
		able to employ advance			rning in mathematic	S-
	S (type, r	number of weekly contact hours	, language — if other than Ger	rman)		
Ü (2)				()))		
		Learning, mostly Virtue				
		sessment (type, scope, lang	uage — if other than German, o	examination offered — if no	ot every semester, informat	ion on whether
		le for bonus)				
		based, 15 to 20 hours) ffered: Once a year, sui	nmer semester			
Allocat						
Allocal		JIALES				
Additio	nal inf	ormation				
Worklo	ad					
60 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
				-		
Module	appea	ars in				
		gree (1 major) Mathema	atics (2015)			
		gree (1 major) Economa				
		gree (1 major) Mathema				
Bachelo	or's de	gree (1 major) Computa	tional Mathematics (20	015)		
Bachelo	or's de	gree (1 major) Mathema	tical Physics (2016)			
Bachelo	or's de	gree (1 major) Economa	thematics (2017)			
Bachelo	or's de	gree (1 major) Mathema	atical Physics (2020)			
		gree (1 major) Economa				
	Bachelor's degree (1 major) Economathematics (2022)					
	Bachelor's degree (1 major) Mathematical Data Science (2022)					
	exchange program Mathematics (2023)					
	Bachelor's degree (1 major) Mathematics (2023)					
	Bachelor's degree (1 major) Economathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2023)					
	Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (1 major) Economathematics (2024)					
	Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Economathematics (2025)					
		jor Mathematics (2015)		• generated 18-Apr-2025 • e	exam. reg.	page 383 / 406
		,		achelor (180 ECTS) Mathema		1.0.9297 400



Subject-specific Key Skills

(15 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 384 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Subject-specific Key Skills, Compulsory Courses

(11 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 385 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Compu	tationa	Il Mathematics			10-M-COM-152-m01	L
Module	e coord	inator		Module offered by		
Dean of	f Studi	es Mathematik (Mathem	atics)	Institute of Mathem	natics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
4		successfully completed				
Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate	1			
					A (1) (1) AA	
merical and 10-	l compi ·M-LNA	o modern mathematical utation (e.g. Matlab) to -G). Computer-based so egral calculus; visualisa	supplement the basic lution of problems in	modules in analysis	and linear algebra	(10-M-ANA-G
Intende	ed lear	ning outcomes				
		earns the use of advance cation to solve mathema		cal software package	es, and is able to ass	sess their
Course	S (type, r	number of weekly contact hours,	 language — if other than Ger	man)		
V (1) + Ú						
Method	d of ass	Sessment (type, scope, langu Ile for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
Langua	ge of a	form of programming ex ssessment: German and ffered: Once a year, win	l/or English	25 hours)		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
120 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
§ 22						
Module		ars in				
		gree (1 major) Mathemat	ice (2015)			
		gree (1 major) Mathemat				
		gree (1 major) Nanostruc		5)		
		gree (1 major) Economat		,		
		gree (1 major) Mathemat				
		gree (1 major) Computat	,	015)		
		gree (1 major) Functiona				
First sta	ate exa	mination for the teachin	g degree Gymnasium	Mathematics (2015)		
Bachel	or's de	gree (1 major) Mathema	ical Physics (2016)			
Bachel	or's de	gree (1 major) Economat	hematics (2017)			
First sta	ate exa	mination for the teachin	g degree Gymnasium	Mathematics (2019)		
Bachel	or's de	gree (1 major) Physics (2	020)			
Bachelor's	with 1 ma	jor Mathematics (2015)	-	; • generated 18-Apr-2025 • e achelor (180 FCTS) Mathema	-	page 386 / 406

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Bachelor's degree (1 major) Nanostructure Technology (2020) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Economathematics (2022) Bachelor's degree (1 major) Economathematics (2022) 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) Economathematics (2023) Bachelor's degree (1 major) Functional Materials (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) Economathematics (2025)

Module	e title				Abbreviation	
Progra	mming	course for students of	Mathematics and othe	er subjects	10-M-PRG-152-m01	
Module	e coord	inator		Module offered by	<u> </u>	
		es Mathematik (Mather	matics)	Institute of Mathem	natics	
ECTS		od of grading	Only after succ. con			
		successfully completed				
3 Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate				
		odern programming lan	guage (e. g. C).			
		ning outcomes				
The stu in math			lently on small program	nming exercises and	standard programm	ing problems
Course	S (type, n	umber of weekly contact hour	 s, language — if other than Ger	rman)		
P (2)	.,, .,.	, , , , , , , , , , , , , , , , , , , ,				
	l of acc	essment (type score land	uage — if other than German, o	examination offered — if no	t every semester informat	ion on whethor
		le for bonus)			se every semester, informat	ion on whether
project	in the	form of programming e		25 hours)		
Langua	ge of a	ssessment: German an	d/or English			
Assess	ment o	ffered: Once a year, su	mmer semester			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
90 h						
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	immes)		
§ 22				-		
Module		irs in				
		gree (1 major) Mathema	atics (2015)			
		gree (1 major) Physics (
			icture Technology (201	5)		
		gree (1 major) Economa				
		gree (1 major) Mathema	,			
			tional Mathematics (20	015)		
		gree (1 major) Function				
			ng degree Gymnasium	inathematics (2015)		
		gree (1 major) Mathema gree (1 major) Economa				
			ng degree Gymnasium	Mathematics (2010)		
		gree (1 major) Physics (
			icture Technology (202	o)		
		gree (1 major) Mathema				
Dachel						
	or's de	gree (1 major) Function	al Materials (2021)			

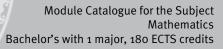
Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Bachelor's degree (1 major) Quantum Technology (2021) Bachelor's degree (1 major) Economathematics (2021) Bachelor's degree (1 major) Economathematics (2022) 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) Economathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2024) Bachelor's degree (1 major) Economathematics (2024) Bachelor's degree (1 major) Functional Materials (2025) Bachelor's degree (1 major) Economathematics (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 389 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	e title				Abbreviation	
Basic N	lotions	and Methods of Mathe	ematical Reasoning		10-M-GBM-152-mo1	L
Module	e coord	inator		Module offered by	<u> </u>	
Dean o	f Studie	es Mathematik (Mathe	matics)	Institute of Mathem	natics	
ECTS		d of grading	Only after succ. con			
2		uccessfully completed		<u></u>		
Duratio	ı	Module level	Other prerequisites			
1 seme		undergraduate				
Conten						
		the basic notions and	l proof techniques in m	athematics: approa	ch to sets, formal los	vic and mans.
		ing outcomes		athematics: approa		
	·	•	bacia working tachnia	u oc which are prore	autoitac far tha furth	or courses in
		degree study program	e basic working technic Ime.	lues which are prefe	quisites for the furth	er courses m
			s, language — if other than Ge	rman)		
V (1) + (-,			
		essment (type scope land	uage — if other than German,	examination offered — if no	t every semester informat	ion on whether
		le for bonus)	auge in other than benildli,		cvery semester, monilat	
project	(10 to :	15 pages)				
		ssessment: German ar	ıd/or English			
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Additio	nal info	ormation on module du		ior to the beginning	of the lecture period	
Worklo						
60 h						
Teachi	ng cycle	2				
	15 cyck	•				
Poforro	d to in	IDO I (avamination regulati	ons for teaching-degree progra	mmac)		
§ 22				innines)		
§ 22	,					
Module	· · · · ·	rs in				
		gree (1 major) Mathema	atics (2015)			
		gree (1 major) Economa	-			
	-	gree (1 major) Mathema				
Bachel	or's deg	gree (1 major) Computa	ational Mathematics (20	015)		
First sta	ate exa	mination for the teachi	ng degree Grundschule	e Mathematics (2015)	
			ng degree Realschule I			
			ng degree Mittelschule	Mathematics (2015))	
	-	gree (1 major) Mathem				
	-	gree (1 major) Economa		Mathews		
First sta 2015))	ate exa	mination for the teachi	ng degree Mittelschule	wathematics (2020	Prutungsordnungs	version
-	or's deg	gree (1 major) Mathem	atical Physics (2020)			
	-	gree (1 major) Economa				
Bachel	or's deg	gree (1 major) Economa	athematics (2022)			
Bachel	or's deg	gree (1 major) Mathem	atical Data Science (20	22)		
Bachelor's	with 1 maj	or Mathematics (2015)		• generated 18-Apr-2025 • e	-	page 390 / 406
			data record B	achelor (180 ECTS) Mathema	tik - 2015	

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exchange program Mathematics (2023) 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 (2025)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 391 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module	title				Abbreviation	
Reason	ing an	d Writing in Mathemati	cs		10-M-ASM-152-m01	
Module	coord	inator		Module offered by	<u> </u>	
		es Mathematik (Mathen	natics)	Institute of Mathem	natics	
ECTS		od of grading	Only after succ. com			
		successfully completed				
2 Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		6 1 1 1 1	<u></u>			
	ical wri	o fundamental methods ting;insight into examp				
Intende	ed lear	ning outcomes				
	isy mat	acquainted with the ba hematical arguments in				
		umber of weekly contact hours	, language — if other than Ger	rman)		
V (1) + Ü	Ü (1)					
Method	d of ass	essment (type, scope, lang	uage — if other than German, e	examination offered — if no	ot every semester, informat	ion on whether
		le for bonus)				
		20 pages)	d / e v E v e li e la			
	_	ssessment: German an	a/or English			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
60 h						
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	ns for teaching-degree progra	mmes)		
Module	e appea	ars in				
Bachel	or's de	gree (1 major) Mathema	tics (2015)			
		gree (1 major) Economa				
		gree (1 major) Mathema				
		gree (1 major) Computa		015)		
		gree (1 major) Mathema	•			
		gree (1 major) Economa				
		gree (1 major) Mathema	•			
		gree (1 major) Economa gree (1 major) Economa				
		gree (1 major) Mathema		22)		
		gram Mathematics (202		/		
		gree (1 major) Mathema	-			
		gree (1 major) Economa	_			
Bachelor's	with 1 maj	or Mathematics (2015)	-	; • generated 18-Apr-2025 • e achelor (180 ECTS) Mathema	-	page 392 / 406



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

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 393 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	



Subject-specific Key Skills, Compulsory Electives

(4 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 394 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Modul	e title				Abbreviation
Supple	ementa	ry Seminar Mathematics			10-M-SEM2-152-m01
Modul	e coord	inator		Module offered	by
Dean o	of Studi	es Mathematik (Mathema	atics)	Institute of Math	nematics
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
4		successfully completed		•	
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conter		undergraduate	<u> </u>		
		vic in mathematics			
		bic in mathematics.			
	-	ning outcomes			
					masters elaboration and structuring
-		ic using selected literatur ic discussion.	re, and prepares a tal	ik on the subject.	He/She is able to participate active-
-					
	o (type, i	number of weekly contact hours, l	anguage — If other than Ge	rman)	
S (2)					
		sessment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered —	if not every semester, information on whether
talk (6	o to 120	o minutes)			
		ssessment: German and,	/or English		
Allocat	tion of	places			
Additio	onal inf	ormation			
Worklo	ad				
120 h					
Teachi	ng cycl	e	-		
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	ammes)	
Modul	e appea	ars in			
		gree (1 major) Mathemati gree (1 major) Mathemati			
		gree (1 major) Mathemati gree (1 major) Computatio	• •	015)	
		gree (1 major) Kathemati		((10)	
		gree (1 major) Mathemati	•		
		• • • •	,	22)	
		gree (1 major) Mathemati		ZZ)	
		gree (1 major) Mathemati	-		
Bachel	or's de	gree (1 major) Mathemati	ical Physics (2024)		

Module	e title				Abbreviation	
Introdu	uction t	o Stochastic Financial	Mathematics		10-M-EFM-152-m01	
Module	e coord	inator		Module offered by	<u> </u>	
Dean o	of Studie	es Mathematik (Mathe	matics)	Institute of Mathem	natics	
ECTS	1	od of grading	Only after succ. con			
	1	rical grade				
9 Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
term st of asse	tructure et pricin	s and yield curves, fon g in the stochastic one	wards, payout profiles o -period model, risk neu	of options and other utral price measures	h flows, actuarial prese derivates, fundamenta , replication and comple nodel, Black-Scholes fo	l theorem eteness,
Intend	ed learı	ning outcomes	· · ·			
The stu	udent is	acquainted with the fu	undamental concepts a d knows about typical f		nastic financial mathem	atics, can
Course	S (type, n	umber of weekly contact hour	s, language — if other than Gei	rman)		
V (4) +	Ü (2)					
		essment (type, scope, lang le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, information o	on whether
credita	ble for t ion of p		-			
Additio	onal inf	ormation				
Worklo						
270 h						
reachi	ng cycl	9				
Referre	ed to in	LPO I (examination regulati	ons for teaching-degree progra	ammes)		
	e appea					
Bachel Bachel	or's de or's de	gree (1 major) Mathem gree (1 major) Economa	-	015)		
Bachel Bachel Bachel	or's de or's de or's de	gree (1 major) Mathem gree (1 major) Economa	athematics (2015) ational Mathematics (20	015)		
Bachel Bachel Bachel Bachel Bachel	or's de or's de or's de or's de or's de	gree (1 major) Mathem gree (1 major) Economa gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021)	015)		
Bachel Bachel Bachel Bachel Bachel Bachel	or's de or's de or's de or's de or's de or's de	gree (1 major) Mathem gree (1 major) Econom gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021) athematics (2022)	015)		
Bachel Bachel Bachel Bachel Bachel Bachel Bachel	or's deg or's deg or's deg or's deg or's deg or's deg	gree (1 major) Mathem gree (1 major) Economa gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa gree (1 major) Mathem	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021) athematics (2022) atics (2023)	015)		
Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	or's deg or's deg or's deg or's deg or's deg or's deg or's deg or's deg	gree (1 major) Mathem gree (1 major) Economa gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa gree (1 major) Mathem gree (1 major) Economa	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021) athematics (2022) atics (2023) athematics (2023)	015)		
Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	or's deg or's deg or's deg or's deg or's deg or's deg or's deg or's deg or's deg	gree (1 major) Mathem gree (1 major) Economa gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa gree (1 major) Mathem	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021) athematics (2022) atics (2023) athematics (2023) athematics (2024)	015)		
Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel Bachel	or's de or's de	gree (1 major) Mathem gree (1 major) Economa gree (1 major) Computa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa gree (1 major) Economa	athematics (2015) ational Mathematics (20 athematics (2017) athematics (2021) athematics (2022) atics (2023) athematics (2023) athematics (2024) athematics (2025)	015) • generated 18-Apr-2025 • ¢		ge 396 / 406

Module title					Abbreviation
Introduction to Topology					10-M-TOP-152-m01
Module	coord	inator		Module offered by	
Dean of	fStudie	es Mathematik (Mathema	atics)	Institute of Mathem	atics
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed		•	
Duratio		Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten		undergraduate			
les and compa	constr ctness,	uctions of topological sp	aces, quotients, conv	vergence of sequenc	properties, connectivity, examp- es and nets, different notions of aß, Arzela-Ascoli and Baire, and
Intende	ed learr	ning outcomes			
is able theory f	to appl to othe	y methods from linear al r branches of mathemati	gebra and analysis to cs.	topology, and realis	as the pertinent proof methods, ses the broad applicability of the
· · · · · · · · · · · · · · · · · · ·		umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (2) +	U (2)				
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
b) oral c) oral e Langua	examin examin ge of a ment o	nination (approx. 90 to 1 ation of one candidate e ation in groups (groups c ssessment: German and, ffered: In the semester in bonus	ach (15 to 30 minutes of 2, 10 to 15 minutes /or English	s) or per candidate)	ıbsequent semester
Allocat					
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	۹			
	13 0 0 0	•			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appears in					
Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2015) Bachelor's degree (1 major) Computational Mathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2016) Bachelor's degree (1 major) Mathematical Physics (2020) Bachelor's degree (1 major) Mathematics (2023) Bachelor's degree (1 major) Mathematical Physics (2024)					

Bachelor's with 1 ma	jor Mathematics (2015)
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Module title Ab					Abbreviation	
Selected Topics in History of Mathematics					10-M-GES-152-m01	
Module coordinator				Module offered by	<u> </u>	
Dean of	Studie	es Mathematik (Mather	natics)	Institute of Mathem	atics	
		od of grading	Only after succ. con			
		successfully completed				
5 Duratio		Module level	Other prerequisites			
1 semes		undergraduate				
Content						
Historic the func	al and damen	cultural development a tals of mathematics, in rematics in modern soc	particular in its relatio			
Intende	d learı	ning outcomes				
	eories a	cted examples, the stu and their social relevan	• •		•	
Courses	5 (type, n	umber of weekly contact hours	s, language — if other than Ger	man)		
V (2) + Ü	Ü (2)					
		essment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informat	ion on whether
Languag	ge of a nent o	< (15 to 25 hours) ssessment: German an ffered: In the semester blaces		offered and in the su	ubsequent semester	
	•					
Additio	nal inf	ormation				
Workloa	ad					
150 h						
Teachin	ig cycl	e				
Referred	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
§ 22 N		-	- · · ·			
Module		ars in				
		gree (1 major) Mathema	atics (2015)			
		gree (1 major) Mathema				
Bachelor's degree (1 major) Computational Mathematics (2015)						
First state examination for the teaching degree Gymnasium Mathematics (2015)						
Bachelor's degree (1 major) Mathematical Physics (2016)						
First state examination for the teaching degree Gymnasium Mathematics (2019)						
	Bachelor's degree (1 major) Mathematical Physics (2020)					
Bachelor's degree (1 major) Mathematical Data Science (2022)						
		gram Mathematics (202 mination for the teachi	-	Mathematics (2023)		
Bachelor's w	vith 1 mai	or Mathematics (2015)	JMU Würzburg	• generated 18-Apr-2025 • e	xam. reg.	page 398 / 406
			-	achelor (180 ECTS) Mathema	-	



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

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 399 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title					Abbreviation	
Mathematical Writing 10-M-MSC-152-m01						
Module	e coord	inator		Module offered by		
Dean of Studies Mathematik (Mathemati			natics)	Institute of Mathem	atics	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	on in the second s	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts		•			
vers the compre	e whole hensiv	good and bad mathema e range of mathematica re works such as Bache ciency but also didactio	texts from short proof or's or Master's these	fs and the formulatio	on of theorems and d	lefinitions to
Intende	ed lear	ning outcomes				
		able to formulate math ctures and conventions				
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
V (2) +	Ü (2)					
		Sessment (type, scope, langule for bonus)	age — if other than German, o	examination offered — if no	t every semester, informati	on on whether
c) proje Langua	ect wor ige of a ment o	(10 to 15 pages) or k (15 to 25 hours) ssessment: German an ffered: In the semester		offered and in the su	ıbsequent semester	
			_			
Additio	nal inf	ormation	_			
	inat init					
Worklo	ad					
150 h			-			
Teachi	ng cycl					
	is cyci		_			
Roforro	d to in	LPO I (examination regulation	ns for toaching dogroo progra	mmoc)		
§ 22				inines)		
Module		ors in				
			tics (2015)			
	Bachelor's degree (1 major) Mathematics (2015) Bachelor's degree (1 major) Mathematical Physics (2015)					
Bachelor's degree (1 major) Computational Mathematics (2015)						
First state examination for the teaching degree Gymnasium Mathematics (2015)						
Bachelor's degree (1 major) Mathematical Physics (2016) First state examination for the teaching degree Cympasium Mathematics (2010)						
	First state examination for the teaching degree Gymnasium Mathematics (2019) Bachelor's degree (1 major) Mathematical Physics (2020)					
Bachelor's degree (1 major) Mathematical Data Science (2022)						
exchange program Mathematics (2023)						
First sta	ate exa	mination for the teaching	ng degree Gymnasium	Mathematics (2023)		
Bachelor's	with 1 ma	jor Mathematics (2015)	-	; • generated 18-Apr-2025 • e achelor (180 ECTS) Mathemat	-	page 400 / 406



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

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 401 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	

Module title Abbreviation						
School Mathematics from a Higher Perspective 10-M-SCH-152-mo					10-M-SCH-152-m01	
Module coordinator Mo				Module offered by	Nodule offered by	
Dean of	f Studi	es Mathematik (Mathe	natics)	Institute of Mathem	atics	
ECTS Method of grading Only after succ. compl. of module(s)						
		successfully completed				
5 Duratio		Module level	Other prerequisites			
1 seme		undergraduate				
Conten		undergraduate				
		1 , 1,				• •
			ool mathematics with re n school and university		ation into wider theo	ories and
Intende	ed lear	ning outcomes				
	vanced	mathematical theories	student gains insight ir s. He/She is able to dis			
Course	S (type, r	umber of weekly contact hour	s, language — if other than Ger	man)		
V (2) +	Ü (2)					
Method	d of ass	sessment (type, scope, lang	uage — if other than German, e	examination offered — if no	t every semester, informat	ion on whether
module is	creditab	le for bonus)				
Langua Assess	ge of a ment o		d/or English in which the course is	offered and in the su	ıbsequent semester	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
150 h						
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	mmes)		
Referred to in LPO I (examination regulations for teaching-degree programmes) § 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
-	Nr. 3 f)					
-	_	irs in				
§ 22 II N Module	e appea	r rs in gree (1 major) Mathema	atics (2015)			
§ 22 II N Module Bachelo Bachelo	e appea or's de or's de	gree (1 major) Mathem gree (1 major) Mathem	atical Physics (2015)			
§ 22 II N Module Bachelo Bachelo Bachelo	e appea or's de or's de or's de	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa	atical Physics (2015) Itional Mathematics (20	-		
§ 22 II N Module Bacheld Bacheld First sta	e appea or's de or's de or's de ate exa	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa mination for the teachi	atical Physics (2015) Itional Mathematics (20 ng degree Grundschule	Mathematics (2015)	
§ 22 II N Module Bachelo Bachelo First sta First sta	e appea or's de or's de or's de ate exa ate exa	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa mination for the teachi mination for the teachi	atical Physics (2015) ational Mathematics (20 ng degree Grundschule ng degree Realschule M	Mathematics (2015) Nathematics (2015))	
§ 22 II N Module Bachelo Bachelo First sta First sta First sta	e appea or's de or's de or's de ate exa ate exa ate exa	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa mination for the teachi mination for the teachi mination for the teachi	atical Physics (2015) Itional Mathematics (20 ng degree Grundschule ng degree Realschule M ng degree Gymnasium	Mathematics (2015) Aathematics (2015) Mathematics (2015)		
§ 22 II N Module Bachelo Bachelo First sta First sta First sta	e appea or's de or's de or's de ate exa ate exa ate exa ate exa	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa mination for the teachi mination for the teachi mination for the teachi mination for the teachi	atical Physics (2015) Itional Mathematics (20 ng degree Grundschule ng degree Realschule M ng degree Gymnasium ng degree Mittelschule	Mathematics (2015) Aathematics (2015) Mathematics (2015)		
§ 22 II N Module Bachelo Bachelo First sta First sta First sta Bachelo	e appea or's des or's des or's des ate exa ate exa ate exa ate exa ate exa or's des	gree (1 major) Mathem gree (1 major) Mathem gree (1 major) Computa mination for the teachi mination for the teachi mination for the teachi mination for the teachi gree (1 major) Mathem	atical Physics (2015) Itional Mathematics (20 ng degree Grundschule ng degree Realschule M ng degree Gymnasium ng degree Mittelschule	Mathematics (2015) Aathematics (2015) Mathematics (2015) 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)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 403 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module	Module title Abbreviation						
Prosem	Proseminar Mathematics 10-M-PRO-152-m01						
Module	Module coordinator Module offered by						
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
4	(not) s	successfully completed					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
Selecte	d basi	c topics in mathematics.					
Intende	ed lear	ning outcomes					
of a giv	en top				sters elaboration and structuring /She is able to participate active-		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)			
S (2)							
module is	creditab	sessment (type, scope, langua le for bonus) o minutes)	ge — if other than German, ·	examination offered — if no	ot every semester, information on whether		
Assess	ment o	ssessment: German and, ffered: In the semester in		offered			
Allocat	ion of _l	olaces					
Additio	nal inf	ormation					
 Worklo							
120 h	au						
Teachi		۵					
	-5 - 9 - 1						
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)			
Module	e appea	urs in					
	Bachelor's degree (1 major) Mathematics (2015)						
Bachel	Bachelor's degree (1 major) Mathematical Physics (2015)						
	Bachelor's degree (1 major) Computational Mathematics (2015)						
		gree (1 major) Mathemati					
		gree (1 major) Mathemati	•				
		gram Mathematics (2023)					
		gree (1 major) Mathemati gree (1 major) Mathemati	-				
Dachel		siee (1 illajoi) Mathelliati	cai Filysics (2024)				



Thesis

(11 ECTS credits)

Bachelor's with 1 major Mathematics (2015)	JMU Würzburg • generated 18-Apr-2025 • exam. reg.	page 405 / 406
	data record Bachelor (180 ECTS) Mathematik - 2015	1

Module	Module title Abbreviation						
Bachel	Bachelor Thesis Mathematics 10-M-BAM-152-mo1						
Module coordinator Module offered by							
Dean o	f Studi	es Mathematik (Mathema	atics)	Institute of Mathem	natics		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
11	nume	rical grade					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate			l completion of certain modu- opic a prerequisite for the assign-		
Conten	Its		·				
Indepe	ndently	researching and writing	on a topic in mathen	natics selected in co	nsultation with the supervisor.		
Intend	ed lear	ning outcomes					
tained		his/her studies in the ba			oply the skills and methods ob- vn the result of his/her work in a		
Course	S (type, r	number of weekly contact hours,	anguage — if other than Ger	rman)			
No cou	rses as	signed to module					
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether		
Bachel	or's the	esis (approx. 275 to 330 ł	iours)				
Allocat	ion of p	olaces					
Additio	onal inf	ormation					
Time to	o compl	ete: 10 weeks.					
Worklo	ad						
330 h							
Teachi	ng cycl	e					
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)			
Module	e appea	ars in					
Bachel	or's de	gree (1 major) Mathemat gree (1 major) Mathemat					