

Subdivided Module Catalogue for the Subject

Chemistry

as vertieft studiertes Fach (studied with a focus on the scientific discipline) with the degree "Erste Staatsprüfung für das Lehramt an Gymnasien"

> Examination regulations version: 2015 Responsible: Faculty of Chemistry and Pharmacy

Abbreviations used

Course types: \mathbf{E} = field trip, \mathbf{K} = colloquium, \mathbf{O} = conversatorium, \mathbf{P} = placement/lab course, \mathbf{R} = project, \mathbf{S} = seminar, \mathbf{T} = tutorial, $\ddot{\mathbf{U}}$ = exercise, \mathbf{V} = lecture

Term: **SS** = summer semester, **WS** = winter semester

Methods of grading: **NUM** = numerical grade, **B/NB** = (not) successfully completed

Regulations: **(L)ASPO** = general academic and examination regulations (for teaching-degree programmes), **FSB** = subject-specific provisions, **SFB** = list of modules

Other: **A** = thesis, **LV** = course(s), **PL** = assessment(s), **TN** = participants, **VL** = prerequisite(s)

Conventions

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

Notes

Should there be the option to choose between several methods of assessment, the lecturer will agree with the module coordinator on the method of assessment to be used in the current semester by two weeks after the start of the course at the latest and will communicate this in the customary manner.

Should the module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.

Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

In accordance with

the general regulations governing the degree subject described in this module catalogue:

LASPO2015

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

08-Sep-2015 (2015-126)

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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The subject is divided into

Abbreviation Module title		ECTS	Method of	page	
			credits	grading	F-3-
Scientific Discipline (92 E	TS credits)				
Compulsory Courses (92	CTS credits)			r	
08-AC1-152-m01	rinciples of Inorganic Chemi	istry	8	NUM	7
08-AC-KAC-152-m01	oncepts of Inorganic Chemis	stry	5	NUM	12
08-ACP1-LA-152-m01	organic and Analytical Cher	mistry (lab) (teaching degree)	7	B/NB	13
08-AS1-152-m01	organic Chemistry of the Ele	6	NUM	15	
08-AC-FK-152-m01	olid State Chemistry		3	NUM	11
08-0C1-152-m01	rganic Chemistry 1		5	NUM	43
08-0C2-VL-152-m01	rganic Chemistry 2		6	NUM	48
08-0CP-LAGY-152-m01	rganic Chemistry - laborator ondary schools)	ry course (teaching degree for se-	6	B/NB	53
08-0C4-152-m01	rganic Chemistry 4		5	NUM	51
08-0C-Spec-152-m01	ractical spectroscopy 1		3	NUM	54
08-PC-TKE-152-m01	hermodynamics, Kinetics, E	lectrochemistry	9	NUM	65
08-PC-MBS-152-m01	lolecular structure and spec	troscopy	5	NUM	56
08-PCP-LA-152-m01	hysical Chemistry lab (teach	ning degree)	3	B/NB	63
08-PHP-LAGY-152-m01	raktikum der Physik für Lehı	ramt Gymnasium	3	B/NB	67
08-BC1-152-m01	iochemistry 1		5	NUM	17
08-Forsch-LAGY-152- m01	08-Forsch-LAGY-152- Practical Research Course for Grammar School Teachers		8	B/NB	42
08-ÜiVmD-LAGY-152- Exercises in Experimental Presentation, Intermediate School		5	B/NB	72	
	(TS credits)				
	traduction into Tooching Ch	amistry for High School	-	NILINA	21
08-1D1-LAG1-152-1101	asching Chomical Practico f	or High School	5		21
Bapar (A ECTS gradits)			5	NOM	
Paper (4 ECTS credits) Students studying for a teaching degree Gymnasium must complete a practical training in didactics and teaching methodolo- gy (studienbegleitendes fachdidaktisches Praktikum) which refers to one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) pursuant to Section 34 Subsection 1 No. 4 LPO I (examination regulations for teaching-degree programmes). The obligatory accompanying tutorial is offered by the respective subject. The ECTS credits obtained are counted in the subject Erziehungswissenschaften pursuant to Section 10 Subsection 3 LASPO (ge- neral academic and examination regulations for teaching-degree programms).					
o8-Ch-SBPrakt-LAGY-152- mo1	iternship at High Schools		4	B/NB	20
Freier Bereich (general as well as subject-specific electives) Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as sub- ject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below. Freier Bereich interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective An- nex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".					
Chemistry	l as subject specific election	as) subject specific)			
(Freier Bereich (general as well as subject-specific electives) subject specific)			3	NUM	1/1
08-AC-ELO-152-m01	Elemental Organic Chemistry		5	NUM	
08-0C3-152-m01	rganic Chemistry 3		6	NUM	50
08-TC-152-m01	uantum Chemistry		3	NUM	70
08-1C-152-fil01 Quantum Chemistry 3 NOM /0 LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Lebramt Gympasien Chemia - 2015 page 3 / 72				3 / 72	

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08-PC-SBL1-152-m01	08-PC-SBL1-152-mo1 Symmetry, chemical bonding and light - Part 1		NUM	64
03-TR-152-m01	Toxicology and legal studies	3	NUM	5
08-PC-EKM-152-m01	Basic Mathematics	2	B/NB	55
08-PVAC-152-m01	Training for Exams in Inorganic Chemistry	2	B/NB	68
08-PVOC-152-m01	Training for Exams in Organic Chemistry	3	B/NB	69
08-ED-PV/ AGV-152-m01	Training for Exams in Chemistry Teaching for High School Tea-	2	B/NB	20
00-10-172-1101	chers	2	БЛИВ	59
08-FD-WA-152-m01	Instructions for Scientific Research	2	B/NB	40
08-FD-LLL-152-m01	o8-FD-LLL-152-mo1 Chemistry SchoolLabs		B/NB	30
08-FD-CAS-152-m01 Collecting Data with CASSY System		2	B/NB	24
08-FD-MS-152-m01	Microscale Experiments in Chemistry Teaching		B/NB	38
o8-FD-ASL-152-mo1 Out-Of-School Education		2	B/NB	23
08-FD-WP-152-m01	W- and P-Seminars in High Schools	2	B/NB	41

Paper (10 ECTS credits)

Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Gymnasium may write this thesis in one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.

	Final Thesis according to § 29 LPO I in Chemistry for High	10	NILIMA	10
08-CII-IIA-01-152-1101	School Teachers	10	NOM	19

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Module title			Abbreviation			
Toxico	logy an	d legal studies			03-TR-152-m01	
Module	e coord	inator		Module offered by		
lecture	r of lect	ure "Toxikologie und R	echtskunde"	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
3	numei	ical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
Basics of legal regulations for chemists (handling and transportation of hazardous materials), fundamentals of toxicology.						
Intende	ed learr	ning outcomes				
The stu ces) as	dents r well as	naster the basics of leg the fundamentals of t	al regulations for chen oxicology.	nists (handling and t	ransport of hazardo	us substan-
Course	s (type,	number of weekly con	tact hours, language –	- if other than Germa	n)	
V (1) + '	V (1)	,				
Metho	d of ass	essment (type_scope		an German, examina	tion offered — if not	every seme-
ster, in	formati	on on whether module	can be chosen to earn	a bonus)		
written	examir	nation (approx. 90 min	utes)			
Allocat	ion of p	laces				
Additio	nal info	ormation				
accord of anne	ing to § ex 1 to t	2 para. 2 sentence 2 A he APOLmCh and No. 5	POLmCh in conjunction and 6 of annex 3 to th	n with No. II 2nd lette e APOLmCh	er g) and i) and No. I	I 1st letter d)
Worklo	ad					
90 h						
Teachi	ng cycle	9				
Referre	d to in	LPOI (examination reg	gulations for teaching-o	degree programmes)		
§ 22	Nr. 1 h)		<u> </u>	5 1 5 7		
§ 22	Nr. $2f$					
Modula	NI. 31)	rcin				
Bachelor's degree (1 major) Biochemistry (2015) Bachelor's degree (1 major) Chemistry (2015) First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Chemistry (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) Master's degree (1 major) Chemistry (2016) Bachelor's degree (1 major) Biochemistry (2017) Deschede degree (1 major) Biochemistry (2017)						
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu	irg • generated 18-Apr-2025 •	exam.	page 5 / 72

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Master's degree (1 major) Chemistry (2018)

Bachelor's degree (1 major) Food Chemistry (2019)

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

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

Bachelor's degree (1 major) Food Chemistry (2021)

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

Master's degree (1 major) Chemistry (2024)

Bachelor's degree (1 major) Food Chemistry (2025)

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 6 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module title			Abbreviation		
Principles of I	norganic Chemistry			08-AC1-152-m01	
Module coord	inator		Module offered by		
lecturer of lec Chemistry)	ture "Experimentalchem	ie" (Experimental	Institute of Inorganic Chemistry		
ECTS Metho	od of grading	Only after succ. con	npl. of module(s)		
8 nume	rical grade				
Duration	Module level	Other prerequisites	i		
1 semester	undergraduate				
Contents					
The module p rial and partic In addition, th mistry.	rovides an overview of th le level, metals, acid-ba le module introduces fur	ne fundamental know se reactions, the perio ndamental concepts o	ledge of chemistry. E odic table, chemical f chemistry and teac	mphasis is placed o equilibrium and com hes the basics of inc	n the mate- pplexometry. organic che-
Intended lear	ning outcomes				
The student u cient in basic actions using dents know he lication.	nderstands the principle models of the structure typical chemical formula ow the most important q	es of the periodic table of matter and can des a language and interp uantitative and qualit	e and can obtain info cribe them properly. ret them by identifyin cative analytical meth	ormation from it. He/ He/she can depict c ng the type of reaction nods work and their a	she is profi- chemical re- on. The stu- areas of app-
Courses (type	, number of weekly cont	act hours, language –	- if other than Germa	n)	
V (4) + V (2)					
Method of ass ster, informat	sessment (type, scope, l ion on whether module o	anguage — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
 a) written exa b) oral examin c) oral examin d) log (approx e) presentatio Language of a 	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes)				
Allocation of	olaces				
Additional inf	ormation				
according to § and No. 1 of a	2 para. 2 sentence 2 AF nnex 2 to the APOLmCh	OLmCh in conjunctio	n with No. I 2nd lette	r a) of annex 1 to the	APOLmCh
Workload					
240 h					
Teaching cycl	e				
Referred to in	LPOI (examination reg	ulations for teaching-	degree programmes)		
§ 42 Nr. 1 and § 22 Nr. 1 h) § 62 Nr. 1					
Module appears in					
Bachelor's degree (1 major) Biochemistry (2015) Bachelor's degree (1 major) Chemistry (2015) First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015) First state examination for the teaching degree Realschule Chemistry (2015)					
LA Gymnasien Chem	istry (2015)	JMU Würzbı reg. data reco	urg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	exam. iie - 2015	page 7 / 72

First state examination for the teaching degree Gymnasium Chemistry (2015)

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

First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) Bachelor's degree (1 major) Biochemistry (2017)

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

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

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

Bachelor's degree (1 major) Food Chemistry (2021)

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

Bachelor's degree (1 major) Food Chemistry (2025)

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	e title				Abbreviation	
Elemen	Elemental Organic Chemistry 08-AC-ELO-152-m01				1	
Module	e coord	inator		Module offered by	<u>.</u>	
lecture Organic	r of lec c Chem	ture "Elementorganisch istry)	ne Chemie" (Elemental	Institute of Inorgan	ic Chemistry	
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				
Contents						
This module equips students with an advanced knowledge of organometallics. It focuses on their structures and properties, special material classes, reactivity and technical processes.						
Intende	ed lear	ning outcomes				
Studen able to explain	its are a systen princi	able to describe the str nise them and characte ples for the synthesis o	ucture and properties o rise their structure and f elementary organic co	f organometallics in reactivity. In additic ompounds.	an appropriate man on, they are able to d	ner. They are evelop and
Course	s (type	, number of weekly con	tact hours, language –	- if other than Germa	n)	
V (2) +	Ü (1)					
Methoo ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
c) oral (d) log (e) preso Langua	examin approx entatio	ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German an	o 3 candidates (approx	. 15 minutes per cano	didate) or	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
Worklo	ad					
150 h						
Teachir		•				
Teacini	ig cyci					
Doforro	d to in	IDOL (avamination ro		dagraa programmac)		
S oo III				regree programmes)		
§ 22 Nr. 1 h) § 22 Nr. 2 f) § 22 Nr. 2 f)						
Module appears in						
Bachelor's degree (1 major) Biochemistry (2015)						
First state examination for the teaching degree Grundschule Chemistry (2015)						
First state examination for the teaching degree Realschule Chemistry (2015)						
First state examination for the teaching degree Gymnasium Chemistry (2015)						
First state examination for the teaching degree Mittelschule Chemistry (2015)						
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)						
Master	u side 's teacl	sice (1 major) biochem jing degree Gymnasiur	n MINT Teacher Educat	ion PLUS, Flite Netwo	ork Bavaria (FNR) (20	020)
1	2					
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu reg. data reco	irg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	exam. iie - 2015	page 9 / 72

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

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module title				Abbreviation	
Solid S	tate Ch	emistry			08-AC-FK-152-m01
Module	coord	inator		Module offered by	
lecturer mistry)	oflect	ture "Festkörperchemie" (Solid State Che-	Institute of Inorgani	c Chemistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Contents					
This mo on their	odule e r struct	quips students with an a ures and properties, spec	dvanced knowledge cial material classes,	of metals, alloys and reactivity and techn	saline compounds. It focuses ical processes.
Intende	ed learn	ning outcomes			
Studen priate n	ts are a nanner	able to describe the struc . They are able to system	ture and properties o ise them and charact	f metals, alloys and erise their structure	saline compounds in an appro- and reactivity.
Courses	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (2)					
Method ster, inf	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
b) oral e c) oral e d) log (a e) prese Langua	examin examin approx entatio ge of a	ation of one candidate e ation in groups of up to 3 . 20 pages) or n (approx. 30 minutes) ssessment: German and/	ach (20 to 30 minute candidates (approx. ′or English	s) or . 15 minutes per cano	lidate) or
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
90 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)	
§ 22 N § 22 N § 62 N	§ 22 Nr. 1 h) § 22 Nr. 2 f) § 62 Nr. 1				
Module appears in					
First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Mittelschule Chemistry (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) 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)) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)					

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Module	e title				Abbreviation
Concep	ots of In	organic Chemistry			08-AC-KAC-152-m01
Module	e coord	inator		Module offered by	
lecture mie" (C	rs of leo oncept	cture "Konzepte der Anor s of Anorganic Chemistry	ganischen Che-)	Institute of Inorgani	ic Chemistry
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			
Conten	ts				
This mo theory a chemis	odule p and the try.	rovides an introduction t valence bond theory. Th	o atoms and the MO e course also focuse	theory. It discusses s on redox reactions	the orbital model, the VSEPR , acids and bases and electro-
Intende	ed learı	ning outcomes			
Studen sis of d differer	ts are a ifferent nt acid-	able to describe the bond t models. They are able to base concepts.	ing situations and ge assign oxidation nu	eometry of molecules Imbers to atoms in cl	s of lower complexity on the ba- hemical compounds and know
Course	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)
V (1) + Ü	Ü (2)				
Methoo ster, inf	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other than be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
a) writte b) oral c) oral e d) log (a e) prese Langua	a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of assessment: German and/or English				
Allocat	ion of p	olaces			
Additional information					
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-	degree programmes)	
§ 42 Nr. 1 § 62 Nr. 1					
Module	e appea	ars in			
First sta First sta First sta First sta	ate exa ate exa ate exa ate exa	mination for the teaching mination for the teaching mination for the teaching mination for the teaching	g degree Grundschule g degree Realschule (g degree Gymnasium g degree Mittelschule	e Chemistry (2015) Chemistry (2015) Chemistry (2015) Chemistry (2015)	
FIRST STA	ate exa	mination for the teaching	, degree mittelschule	Chemistry (2020 (Pr	urungsoranungsversion 2015))

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Module	title				Abbreviation
Inorgar	nic and	Analytical Chemistry (la	b) (teaching degree)		08-ACP1-LA-152-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Anorganic Chemi	stry	Institute of Inorgani	ic Chemistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
7	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This mo lated le course unknov	odule g ecture(s focuse vn subs	ives students the opport). After a safety briefing, s on laboratory safety, si stances.	unity to apply in prac the students autonor mple lab techniques,	tice the knowledge t nously conduct expe the synthesis of sim	hey have gained through the re- eriments in the laboratory. The nple substances and analyses of
Intende	ed learr	ning outcomes			
Studen have de cesses	ts are a evelope in an a	ble to identify fundamen ed the ability to perform t ppropriate manner, both	ital problems in chem he necessary stoichio in written and oral fo	nistry and perform ex ometric calculations orm.	xperiments to solve them. They and describe the chemical pro-
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (12)					
Method ster, inf Vortest pages e Langua Assess	Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English				
Allocat	ion of r	olaces			
	<u> </u>				
Additio	nal info	ormation			
Worklo	ad				
210 h					
Teachir	ng cycl	9			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§ 42 N § 62 N	§ 42 Nr. 1 § 62 Nr. 1				
Module	appea	in in			
First sta First sta First sta First sta First sta	ate exa ate exa ate exa ate exa ate exa	mination for the teaching mination for the teaching mination for the teaching mination for the teaching mination for the teaching	g degree Grundschule g degree Realschule C g degree Gymnasium g degree Mittelschule g degree Mittelschule	Chemistry (2015) Chemistry (2015) Chemistry (2015) Chemistry (2015) Chemistry (2020 (Pr	rüfungsordnungsversion 2015))

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Module	e title				Abbreviation
Practic	al spec	troscopy 2			o8-AC-Spec-152-mo1
Module	e coord	inator		Module offered by	
lecture	r of lec	ture "Praktische Spektros	skopie 2"	Institute of Inorgani	ic Chemistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
This mo on thei	odule e r struct	quips students with an a sures and properties, spe	dvanced knowledge cial material classes,	of metals, alloys and reactivity and techn	l saline compounds. It focuses ical processes.
Intende	ed lear	ning outcomes		•	
Studen priate r describ	its are a manner be them	able to describe the struc r. They can list spectrosco n in an appropriate mann	ture and properties o opic methods that car er.	f metals, alloys and 1 be used for the stru	saline compounds in an appro- uctural analysis of solids and can
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V (2)					
Methoo ster, in	d of ass formati	sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
d) oral c) oral d) log (e) pres Langua	examir examin approx entatio age of a	ation of one candidate e ation in groups of up to <u>3</u> . 20 pages) or n (approx. 30 minutes) ssessment: German and,	ach (20 to 30 minute) 3 candidates (approx. /or English	5) or 15 minutes per cano	didate) or
Allocation of places					
Additio	onal inf	ormation	·		
Worklo	ad				
90 h					
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§ 22 § 22 § 22	Nr. 1 h) Nr. 2 f) Nr. 3 f)				
Module	e appea	ars in			
First sta First sta First sta First sta First sta	ate exa ate exa ate exa ate exa ate exa	mination for the teaching mination for the teaching mination for the teaching mination for the teaching mination for the teaching	g degree Grundschule g degree Realschule C g degree Gymnasium g degree Mittelschule g degree Mittelschule	Chemistry (2015) hemistry (2015) Chemistry (2015) Chemistry (2015) Chemistry (2020 (Pr	rüfungsordnungsversion 2015))

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	title				Abbreviation
Inorganic Chemistry of the Elements 08-AS1-152-m01			08-AS1-152-m01		
Module	coord	inator		Module offered by	
lecturer te" (Che	r of lect emistry	ure "Chemie der Hauptgr of Main-group Elements)	ruppenelemen-)	Institute of Inorgani	ic Chemistry
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
This mo ses on l on, it in	odule e bondin troduc	quips students with an a g conditions, trends in th es students to elementar	dvanced knowledge ne periodic table and y organic chemistry,	of the periodic table the description and coordination chemis	and selected elements. It focu- structure of elements. In additi- stry and complex chemistry.
Intende	ed learn	ning outcomes			
Studen reactivi how to	ts are a ty and use the	ble to characterise main fabrication. They are able periodic table, an esser	group elements and e to identify the coord ntial tool for chemists	transition metal eler lination of the atoms	ments in terms of their structure, s. In addition, they have learned
Course	s (type,	, number of weekly conta	ct hours, language —	- if other than Germa	n)
V (2) + V	V (2)				
Method ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
a) writte b) oral e c) oral e d) log (a e) prese Langua	 a) written examination (approx. 90 to 180 minutes) or b) oral examination of one candidate each (20 to 30 minutes) or c) oral examination in groups of up to 3 candidates (approx. 15 minutes per candidate) or d) log (approx. 20 pages) or e) presentation (approx. 30 minutes) Language of accessment: German and/or English 				
Allocati	ion of p	olaces			
Additio	nal info	ormation			
accordi and No	ng to § . 1 of ai	2 para. 2 sentence 2 APC nnex 2 to the APOLmCh	OLmCh in conjunction	n with No. I 2nd lette	er a) of annex 1 to the APOLmCh
Worklo	ad				
180 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)	
§ 62∣N	r. 1			<u> </u>	
Module appears in					
Bachelo Bachelo Bachelo First sta Bachelo Bachelo Module	pr's des pr's des pr's des pr's des pr's des pr's des pr's des studie	gree (1 major) Biochemist gree (1 major) Chemistry gree (1 major) Mathemati gree (1 major) Computatio mination for the teaching gree (1 major) Biochemist gree (1 major) Chemistry (2	try (2015) (2015) cs (2015) onal Mathematics (20 g degree Gymnasium try (2017) (2017) 2019)	015) Chemistry (2015)	

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Julius-Maximilians-UNIVERSITÄT WÜRZBURG



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)

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	reg. data record Lehramt Gymnasien Chemie - 2015	1

Module	e title			Abbreviation	
Biochemistry 1 08-BC1-152-m01					
Module coordinator Module offered by					
holder	of the Chair of Biochemistry		Chair of Biochemist	try	
ECTS	Method of grading	Only after succ. con	Only after succ. compl. of module(s)		
5	numerical grade				
Duratio	on Module level	Other prerequisites	i		
1 seme	ster undergraduate				
Conten	ts				
Compri mistry. tertiary sis, glu tion, fa discuss	sing lectures and exercises, the particular focus is on the betand quaternary structures), of coneogenesis, citric acid cyce tty acid synthesis), nucleotid ses the structure of the DNA actional set of the DNA actional set of the DNA actional set of the structure of the DNA actional set of the structure of the DNA actional set of the structure of the structure of the structure set of the structure of the structure set of the structur	his module acquaints s iochemistry of proteins atalytic strategies and e, cellular respiration, e metabolism, the urea nd the central dogma c	tudents with the fun (amino acids, peptic enzyme kinetics, car photosynthesis), fatt cycle and amino aci f molecular biology.	damental principles de bonds, primary, s bohydrate metabolis y acid metabolism (h d metabolism. The m	of bioche- econdary, sm (glycoly- peta oxida- nodule also
Intende	ed learning outcomes				
Studen sed in t	ts have become familiar with the module. They are able to	the fundamental princ describe the key bioche	ples of the topics in mical processes in c	biochemistry that we cellular systems.	ere discus-
Course	s (type, number of weekly co	ntact hours, language –	- if other than Germa	ın)	
V (2) +	Ü (1)				
Methoo ster, in written	d of assessment (type, scope formation on whether module examination (approx. 60 to g	, language — if other th e can be chosen to earn no minutes)	an German, examina a bonus)	tion offered — if not	every seme-
Allocat	ion of places				
Additio	onal information				
accord nex 1 to	ing to § 2 para. 2 sentence 2 a the APOLmCh and No. 3 of a	APOLmCh in conjunctio nnex 3 to the APOLmCh	n with No. II 2nd lette 1	er e) and No. II 1st le	tter c) of an-
Worklo	ad				
150 h					
Teachi	ng cycle				
Referre	ed to in LPO I (examination re	gulations for teaching-	degree programmes)		
§ 42 N § 62 N	Nr. 2 Nr. 2				
Module	e appears in				
Bachel	or's degree (1 major) Biochen	nistry (2015)			
Bachel	or's degree (1 major) Biology	(2015)			
Bachel	or's degree (1 major) Chemist	ry (2015)			
Bachelor's degree (1 major) Food Chemistry (2015)					
Bachelor's degree (1 major) Functional Materials (2015)					
First state examination for the teaching degree Grundschule Chemistry (2015)					
First st	ate examination for the teach	ing degree Gymnasium	Chemistry (2015)		
First sta	First state examination for the teaching degree Mittelschule Chemistry (2015)				
Bachel	or's degree (1 major) Food Ch	emistry (2016)	, (<u>)</u> ,		
Bachel	or's degree (1 major) Biology	(2017)			
LA Gymnas	ien Chemistry (2015)	JMU Würzb reg. data rec	urg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	• exam. nie - 2015	page 17 / 72





Bachelor's degree (1 major) Biochemistry (2017) Bachelor's degree (1 major) Chemistry (2017) Module studies (Bachelor) Chemistry (2019) Bachelor's degree (1 major) Food Chemistry (2019) Module studies (Bachelor) Orientierungsstudien (2020) First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015)) Bachelor's degree (1 major) Biology (2021) Bachelor's degree (1 major) Functional Materials (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Food Chemistry (2021) Bachelor's degree (1 major) Biochemistry (2022) Bachelor's degree (1 major) Biology (2022) Bachelor's degree (1 major) Functional Materials (2025)

Bachelor's degree (1 major) Food Chemistry (2025)

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	title				Abbreviation	
Final Thesis according to § 29 LPO I in Chemistry for High School Teachers			o8-Ch-HA-GY-152-mo1			
Module	coord	inator		Module offered by		
head of	f the re	search group offering the	module	Faculty of Chemistr	y and Pharmacy	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Depending on their of arbeit (thesis) pursu teaching-degree pro died with a focus on highly recommender completing module	Depending on their choice of topic, students who are writing their Haus- arbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) in the vertieft studiertes Fach (subject stu- died with a focus on the scientific discipline) Chemie (Chemistry) are highly recommended to complete module o8-Forsch-LAGY directly before completing module o8. Ch HA GY		
Conten	ts					
Adherir in cherr provisio	ng to th nistry o ons of S	e principles of good scie r chemistry didactics the Section 29 LPO (examina	ntific practice, studer y have agreed upon v tion regulations for te	nts will independent vith an authorised e eaching degree prog	ly research and write on a topic xaminer in accordance with the rammes).	
Intende	ed learr	ning outcomes				
To pass and and sions, a priate v	this m alyse a and offe vritten	odule, students will be e problem, conduct a liter er approaches to the solu account of the results of	expected to: - be able ature search, refer to ution of said problem) their work.	to independently w relevant theories, in) be able to work to	rite an academic paper (define terpret data, draw logical conclu- o deadlines prepare an appro-	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
No cou	rses as	signed to module				
Methoo ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
Hausar	Hausarbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) (30					
to 50 pa Langua ons for	ages) ge of a teachii	ssessment: German; exc 1g-degree programmes)	eptions pursuant to S	Section 29 Subsectio	on 4 LPO I (examination regulati-	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	Workload					
300 h						
Teachir	ng cycl	e				
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
§ 29		``				
Module	appea	irs in				
First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)		

Module	e title				Abbreviation
Interns	hip at l	High Schools			o8-Ch-SBPrakt-LAGY-152-mo1
Module	e coord	inator		Module offered by	
holder	of the F	Professorship of Didactic	s of Chemistry	Faculty of Chemistr	y and Pharmacy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed learı	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (o) +	S (2)				
Methoo ster, in	d of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
term pa	aper (w	ritten elaboration of teac	hing practice, approx	. 8 pages)	
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
120 h					
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§34 1	Nr. 4				
Module	e appea	in and a second s			
First sta	ate exa	mination for the teachinន	g degree Gymnasium	Educational Science	(2015)

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	title				Abbreviation
Introdu	ction i	nto Teaching Chemistry f	for High School		08-FD1-LAGY-152-m01
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Didactic	s of Chemistry	Institute of Inorgan	ic Chemistry
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed learr	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Courses	s (type,	, number of weekly conta	ct hours, language –	- if other than Germa	n)
V (2) + 9	S (2)				
Method ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
a) writte Langua	en exar ge of a	nination (approx. 90 min ssessment: German and,	utes) and b) present /or English	ation (approx. 20 mi	nutes)
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
150 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)	
§621N	lr. 6				
Module	appea	ins in			
First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)	

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	reg. data record Lehramt Gymnasien Chemie - 2015	1

Module	title				Abbreviation
Teachin	ng Chei	mical Practice for High S	chool		08-FD2-LAGY-152-m01
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Didactic	s of Chemistry	Institute of Inorgan	ic Chemistry
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	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed learı	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Courses	s (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
S (2) + S	S (2)				
Method ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
a) writte Langua	en exai ge of a	nination (approx. 60 min ssessment: German and,	utes) and b) portfolio /or English	o (approx. 15 pages)	
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teachin	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)	
§621N	lr. 6				
Module	appea	ins in			
First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)	

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	title				Abbreviation
Out-Of-	Schoo	l Education			o8-FD-ASL-152-mo1
Module	coord	inator		Module offered by	
holder	of the I	Professorship of Didactics	s of Chemistry	Institute of Inorgani	c Chemistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed lear	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
S (2)					
Methoo ster, inf	l of ass formati	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
project: Langua	: prese ge of a	ntation of a project (appr ssessment: German and/	ox. 30 minutes) ′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 regu	lations for teaching-d	legree programmes)	
§ 22 § 22 § 22	Nr. 1 h) Nr. 2 f) Nr. 3 f)			<u> </u>	
Module	appea	irs in			
First sta First sta First sta First sta First sta First sta First sta First sta fungson First sta (Prüfun	ate exa ate exa ate exa ate exa ate exa ate exa ate exa ate exa rdnung ate exa gsordn	mination for the teaching mination for the teaching sversion 2015)) mination for the teaching sversion 2015))	degree Grundschule degree Grundschule degree Realschule C degree Gymnasium degree Sonderpädag degree Mittelschule degree Mittelschule degree Mittelschule degree Mittelschule degree Mittelschule	Chemistry (2015) Didactics in Chemis hemistry (2015) Chemistry (2015) gogik Didactics in Ch Chemistry (2015) Didactics in Chemis Chemistry (2020 (Pr Didactics in Chemis gogik Didactics in Ch	etry (Primary School) (2015) nemistry (Middle School) (2015) try (Middle School) (2015) üfungsordnungsversion 2015)) try (Middle School) (2020 (Prü- nemistry (Middle School) (2020

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	reg. data record Lehramt Gymnasien Chemie - 2015	1

Modul	e title				Abbreviation	
Collect	ing Dat	a with CASSY System			08-FD-CAS-152-m01	
Modul	e coord	inator		Module offered by		
holder	of the F	Professorship of Didactic	s of Chemistry	Institute of Inorgani	ic Chemistry	
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)	,	
2	(not) s	successfully completed		1		
Duratio	n l	Module level	Other prerequisites			
1 seme	ster	unknown				
Conter	its		1			
No info	ormatio	n on contents available.				
Intend	ed learr	ning outcomes	-			
No info	ormatio	n on learning outcomes a	available.			
Course	s (type	number of weekly conta	act hours, language –	- if other than Germa	n)	
S(2)		number of weekly conta		il other than oerna	")	
Motho	d of acc	accmant (type scope)		an Corman, ovamina	tion offered if not	ovoni como
ster, in	formati	on on whether module c	an be chosen to earn	a bonus)	tion onered — if not	every seme-
presen Langua	tation o age of a	of a project (approx. 30 n ssessment: German and	ninutes) /or English			
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
60 h						
Teachi	ng cycl	9	-			
Referre	ed to in	LPOI (examination regu	llations for teaching-	degree programmes)		
§ 22	Nr. 2 f)					
§ 22	Nr. 3 f)					
§ 22 II	Nr. 1 N)					
Modul	e appea	rs in				
First st	ate exa	mination for the teaching	g degree Hauptschule	e English (2009)		
First st	ate exa	mination for the teaching	g degree Hauptschule	e Biology (2009)		
First st	ate exa	mination for the teaching	g degree Hauptschule	e Chemistry (2009)		
First st	ate exa	mination for the teaching	g degree Hauptschule	e Geography (2009)	<i>.</i>	
First st	ate exa	mination for the teaching	g degree Hauptschule	Protestant Theology	/ (2009)	
First st	ate exa	mination for the teaching	g degree Hauptschule	e German (2009)		
First st	ate exa	mination for the teaching	g degree Hauptschule	e History (2009)	``	
First st	ate exa	mination for the teaching	g degree Hauptschule	e Catholic Theology (2009)	
First st	ate exa	mination for the teaching	g degree Hauptschule	e Mathematics (2009)	
First st	ate exa	mination for the teaching	g degree Hauptschule	e Music (2009)		
First st	ate exa	mination for the teaching	g degree Hauptschule	Physics (2009)	`	
First st	ate exa	mination for the teachin	g degree Hauptschule	Social Science (200)9)	
First st	ate exa	mination for the teaching	g degree Hauptschule	e Science of Sport (20	009)	
First st	ate exa	mination for the teaching	g degree Realschule E	nglish (2009)		
First st	ate exa	mination for the teaching	g degree Realschule E	310logy (2009)		
First st	ate exa	mination for the teaching	g degree Realschule (.hemistry (2009)		
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First state examination for the teaching degree Realschule Geography (2009) First state examination for the teaching degree Realschule Protestant Theology (2009) First state examination for the teaching degree Realschule French Studies (2009) First state examination for the teaching degree Realschule German (2009) First state examination for the teaching degree Realschule History (2009) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Realschule Catholic Theology (2009) First state examination for the teaching degree Realschule Mathematics (2009) First state examination for the teaching degree Realschule Music (2009) First state examination for the teaching degree Realschule Physics (2009) First state examination for the teaching degree Realschule Science of Sport (2009) First state examination for the teaching degree Gymnasium English (2009) First state examination for the teaching degree Gymnasium Biology (2009) First state examination for the teaching degree Gymnasium Chemistry (2009) First state examination for the teaching degree Gymnasium Geography (2009) First state examination for the teaching degree Gymnasium French Studies (2009) First state examination for the teaching degree Gymnasium German (2009) First state examination for the teaching degree Gymnasium History (2009) First state examination for the teaching degree Gymnasium Greek Philology (2009) First state examination for the teaching degree Gymnasium Computer Science (2009) First state examination for the teaching degree Gymnasium Italian Studies (2009) First state examination for the teaching degree Gymnasium Catholic Theology (2009) First state examination for the teaching degree Gymnasium Latin Philology (2009) First state examination for the teaching degree Gymnasium Mathematics (2012) First state examination for the teaching degree Gymnasium Mathematics (2009) First state examination for the teaching degree Gymnasium Music (2009) First state examination for the teaching degree Gymnasium Physics (2009) First state examination for the teaching degree Gymnasium Russian (2009) First state examination for the teaching degree Gymnasium Social Science (2009) First state examination for the teaching degree Gymnasium Spanish Studies (2009) First state examination for the teaching degree Gymnasium Science of Sport (2009) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009) First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009) First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013) First state examination for the teaching degree Mittelschule English (2013) First state examination for the teaching degree Mittelschule Biology (2013) First state examination for the teaching degree Mittelschule Chemistry (2013) First state examination for the teaching degree Mittelschule Geography (2013) First state examination for the teaching degree Mittelschule Protestant Theology (2013) First state examination for the teaching degree Mittelschule German (2013) First state examination for the teaching degree Mittelschule History (2013) First state examination for the teaching degree Mittelschule Catholic Theology (2013) First state examination for the teaching degree Mittelschule Mathematics (2013) First state examination for the teaching degree Mittelschule Physics (2013) First state examination for the teaching degree Mittelschule Social Science (2013) First state examination for the teaching degree Mittelschule Science of Sport (2013) First state examination for the teaching degree Realschule English (2015) First state examination for the teaching degree Realschule Biology (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Realschule Protestant Theology (2015) First state examination for the teaching degree Realschule French Studies (2015) First state examination for the teaching degree Realschule German (2015) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 25 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

First state examination for the teaching degree Realschule History (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Realschule Catholic Theology (2015) First state examination for the teaching degree Realschule Mathematics (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Realschule Science of Sport (2015) First state examination for the teaching degree Gymnasium English (2015) First state examination for the teaching degree Gymnasium Biology (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Gymnasium French Studies (2015) First state examination for the teaching degree Gymnasium German (2015) First state examination for the teaching degree Gymnasium History (2015) First state examination for the teaching degree Gymnasium Greek Philology (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) First state examination for the teaching degree Gymnasium Italian Studies (2015) First state examination for the teaching degree Gymnasium Catholic Theology (2015) First state examination for the teaching degree Gymnasium Latin Philology (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Gymnasium Russian (2015) First state examination for the teaching degree Gymnasium Social Science (2015) First state examination for the teaching degree Gymnasium Spanish Studies (2015) First state examination for the teaching degree Gymnasium Science of Sport (2015) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Social Science (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2015) First state examination for the teaching degree Mittelschule English (2015) First state examination for the teaching degree Mittelschule Biology (2015) First state examination for the teaching degree Mittelschule Chemistry (2015) First state examination for the teaching degree Mittelschule Geography (2015) First state examination for the teaching degree Mittelschule Protestant Theology (2015)

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First state examination for the teaching degree Mittelschule Catholic Theology (2015) First state examination for the teaching degree Mittelschule Mathematics (2015) First state examination for the teaching degree Mittelschule Physics (2015) First state examination for the teaching degree Mittelschule Social Science (2015) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2015) First state examination for the teaching degree Mittelschule Ergonomics (Teaching at the German Mittelschule) (2015) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2015) First state examination for the teaching degree Mittelschule Art Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Mittelschule Music Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Social Science (Middle School) (2015) First state examination for the teaching degree Mittelschule Science of Sport (2015) First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2015) First state examination for the teaching degree Realschule Music (2015) First state examination for the teaching degree Gymnasium Music (2015) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015) First state examination for the teaching degree Mittelschule Music (2015) First state examination for the teaching degree Gymnasium French Studies (2016) First state examination for the teaching degree Gymnasium Italian Studies (2016) First state examination for the teaching degree Gymnasium Spanish Studies (2016) First state examination for the teaching degree Realschule French Studies (2016) First state examination for the teaching degree Realschule English (2016) First state examination for the teaching degree Gymnasium English (2016) First state examination for the teaching degree Mittelschule English (2016) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016) First state examination for the teaching degree Gymnasium Greek Philology (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) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Gymnasium Mathematics (2019) First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015))

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

First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016)) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

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

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

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

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

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

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

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

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

First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))

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

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

First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

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

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

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

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

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

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

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

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

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Module title		Abbreviation				
Chemi	stry Sch	noolLabs			08-FD-LLL-152-m01	
Module coordinator			Module offered by			
holder	of the F	Professorship of Didact	tics of Chemistry	Institute of Inorgani	ic Chemistry	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	,	
2	(not) s	successfully completed	1	, , , , , , , , , , , , , , , , , , , ,		
Duratio	n	Module level	Other prerequisites			
1 seme	ster	unknown				
Conten	ts					
No info	rmatio	n on contents available	2.			
Intend	ed lear	ningoutcomes				
No info	rmatio	n on loarning outcome	s availablo			
					`	
Course	s (type	, number of weekly cor	itact hours, language –	- if other than Germa	n)	
P (3)						
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
practic Langua	al assig ige of a	gnment (successful sug ssessment: German ar	pervision of 2 sessions nd/or English	in learn-teach-lab, a	pprox. 4 to 6 hours e	ach)
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
60 h						
Teachi	ng cycl	е				
Referre	d to in	LPOI (examination re	gulations for teaching-o	degree programmes)		
§ 22	Nr. 1 h)					
§ 22	Nr. 2 f)					
§ 22	Nr. 3 f)					
Modul	e appea	irs in				
First st	ate exa	mination for the teach	ing degree Grundschule	e English (2009)		
First st	ate exa	mination for the teach	ing degree Grundschule	e Biology (2009)		
First st	ate exa	mination for the teach	ing degree Grundschule	e Chemistry (2009)		
First st	ate exa	mination for the teach	ing degree Grundschule	e Geography (2009)		
First st	ate exa	mination for the teach	ing degree Grundschule	Protestant Theology	/ (2009)	
First st	First state examination for the teaching degree Grundschule German (2009)					
First state examination for the teaching degree Grundschule History (2009)						
First state examination for the teaching degree Grundschule History (2015)						
First state examination for the teaching degree Grundschule Catholic Theology (2009)						
First state examination for the teaching degree Grundschule Mathematics (2009)						
First st	ate exa	mination for the teach	ing degree Grundschule	e Music (2009)		
	ate exa	mination for the teach	ing degree Grundschule	e Physics (2009)		
	ate exa	mination for the teach	ing degree Grundschule	e Social Science (200	(9)	
First state examination for the teaching degree Grundschule Science of Sport (2009)						
FIRST ST	ale exa	mination for the teach	ing degree Hauptschule	Eliguisti (2009)		
riist St	ate exa			е Бююду (2009)		
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First state examination for the teaching degree Hauptschule Chemistry (2009) First state examination for the teaching degree Hauptschule Geography (2009) First state examination for the teaching degree Hauptschule Protestant Theology (2009) First state examination for the teaching degree Hauptschule German (2009) First state examination for the teaching degree Hauptschule History (2009) First state examination for the teaching degree Hauptschule Catholic Theology (2009) First state examination for the teaching degree Hauptschule Mathematics (2009) First state examination for the teaching degree Hauptschule Music (2009) First state examination for the teaching degree Hauptschule Physics (2009) First state examination for the teaching degree Hauptschule Social Science (2009) First state examination for the teaching degree Hauptschule Science of Sport (2009) First state examination for the teaching degree Realschule English (2009) First state examination for the teaching degree Realschule Biology (2009) First state examination for the teaching degree Realschule Chemistry (2009) First state examination for the teaching degree Realschule Geography (2009) First state examination for the teaching degree Realschule Protestant Theology (2009) First state examination for the teaching degree Realschule French Studies (2009) First state examination for the teaching degree Realschule German (2009) First state examination for the teaching degree Realschule History (2009) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Realschule Catholic Theology (2009) First state examination for the teaching degree Realschule Mathematics (2009) First state examination for the teaching degree Realschule Music (2009) First state examination for the teaching degree Realschule Physics (2009) First state examination for the teaching degree Realschule Science of Sport (2009) First state examination for the teaching degree Gymnasium English (2009) First state examination for the teaching degree Gymnasium Biology (2009) First state examination for the teaching degree Gymnasium Chemistry (2009) First state examination for the teaching degree Gymnasium Geography (2009) First state examination for the teaching degree Gymnasium French Studies (2009) First state examination for the teaching degree Gymnasium German (2009) First state examination for the teaching degree Gymnasium History (2009) First state examination for the teaching degree Gymnasium Greek Philology (2009) First state examination for the teaching degree Gymnasium Computer Science (2009) First state examination for the teaching degree Gymnasium Italian Studies (2009) First state examination for the teaching degree Gymnasium Catholic Theology (2009) First state examination for the teaching degree Gymnasium Latin Philology (2009) First state examination for the teaching degree Gymnasium Mathematics (2012) First state examination for the teaching degree Gymnasium Mathematics (2009) First state examination for the teaching degree Gymnasium Music (2009) First state examination for the teaching degree Gymnasium Physics (2009) First state examination for the teaching degree Gymnasium Russian (2009) First state examination for the teaching degree Gymnasium Social Science (2009) First state examination for the teaching degree Gymnasium Spanish Studies (2009) First state examination for the teaching degree Gymnasium Science of Sport (2009) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2009) First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009) First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2009) First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013) First state examination for the teaching degree Mittelschule English (2013) First state examination for the teaching degree Mittelschule Biology (2013) First state examination for the teaching degree Mittelschule Chemistry (2013) First state examination for the teaching degree Mittelschule Geography (2013) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 31 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

First state examination for the teaching degree Mittelschule Protestant Theology (2013) First state examination for the teaching degree Mittelschule German (2013) First state examination for the teaching degree Mittelschule History (2013) First state examination for the teaching degree Mittelschule Catholic Theology (2013) First state examination for the teaching degree Mittelschule Mathematics (2013) First state examination for the teaching degree Mittelschule Physics (2013) First state examination for the teaching degree Mittelschule Social Science (2013) First state examination for the teaching degree Mittelschule Science of Sport (2013) First state examination for the teaching degree Grundschule English (2015) First state examination for the teaching degree Grundschule Biology (2015) First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Grundschule Geography (2015) First state examination for the teaching degree Grundschule German (2015) First state examination for the teaching degree Grundschule Catholic Theology (2015) First state examination for the teaching degree Grundschule Mathematics (2015) First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015) First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Social Science (2015) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Geography (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Catholic Theology (Primary School) (2015) First state examination for the teaching degree Grundschule Art Education in Primary School (2015) First state examination for the teaching degree Grundschule Didactics in Science of Sport (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Mathematics (Primary School) (2015) First state examination for the teaching degree Grundschule Music Education in Primary School (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Social Science (Primary School) (2015) First state examination for the teaching degree Grundschule Science of Sport (2015) First state examination for the teaching degree Realschule English (2015) First state examination for the teaching degree Realschule Biology (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Realschule Protestant Theology (2015) First state examination for the teaching degree Realschule French Studies (2015) First state examination for the teaching degree Realschule German (2015) First state examination for the teaching degree Realschule History (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Realschule Catholic Theology (2015) First state examination for the teaching degree Realschule Mathematics (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Realschule Science of Sport (2015) First state examination for the teaching degree Gymnasium English (2015) First state examination for the teaching degree Gymnasium Biology (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Gymnasium Geography (2015) First state examination for the teaching degree Gymnasium French Studies (2015) First state examination for the teaching degree Gymnasium German (2015) First state examination for the teaching degree Gymnasium History (2015) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 32 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

First state examination for the teaching degree Gymnasium Greek Philology (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) First state examination for the teaching degree Gymnasium Italian Studies (2015) First state examination for the teaching degree Gymnasium Catholic Theology (2015) First state examination for the teaching degree Gymnasium Latin Philology (2015) First state examination for the teaching degree Gymnasium Mathematics (2015) First state examination for the teaching degree Gymnasium Physics (2015) First state examination for the teaching degree Gymnasium Russian (2015) First state examination for the teaching degree Gymnasium Social Science (2015) First state examination for the teaching degree Gymnasium Spanish Studies (2015) First state examination for the teaching degree Gymnasium Science of Sport (2015) First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015) First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2015)First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Social Science (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2015) First state examination for the teaching degree Mittelschule English (2015) First state examination for the teaching degree Mittelschule Biology (2015)

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

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

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

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

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

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First state examination for the teaching degree Mittelschule Social Science (2015) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2015) First state examination for the teaching degree Mittelschule Ergonomics (Teaching at the German Mittelschule) (2015) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2015) First state examination for the teaching degree Mittelschule Art Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Mittelschule Music Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Social Science (Middle School) (2015) First state examination for the teaching degree Mittelschule Science of Sport (2015) First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2015) First state examination for the teaching degree Grundschule Protestant Theology (2015) First state examination for the teaching degree Grundschule Music (2015) First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015) First state examination for the teaching degree Realschule Music (2015) First state examination for the teaching degree Gymnasium Music (2015) First state examination for the teaching degree Gymnasium Music Education, Advanced Studies (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015) First state examination for the teaching degree Mittelschule Music (2015) First state examination for the teaching degree Gymnasium French Studies (2016) First state examination for the teaching degree Gymnasium Italian Studies (2016) First state examination for the teaching degree Gymnasium Spanish Studies (2016) First state examination for the teaching degree Realschule French Studies (2016) First state examination for the teaching degree Grundschule English (2016) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016) First state examination for the teaching degree Realschule English (2016) First state examination for the teaching degree Gymnasium English (2016) First state examination for the teaching degree Mittelschule English (2016) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016) First state examination for the teaching degree Gymnasium Greek Philology (2018) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (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) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Gymnasium Mathematics (2019)

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WÜRZBURG

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

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

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

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

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

First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016)) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

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

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

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

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

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

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

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

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

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

First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015))

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

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

First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

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

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

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

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

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

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

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

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

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

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

First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))

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

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

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

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

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

First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))

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

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

First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (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 Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020)

First state examination for the teaching degree Grundschule Political and Social Studies (2020) First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)

First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020) First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020)

First state examination for the teaching degree Mittelschule Political and Social Studies (2020)

First state examination for the teaching degree Gymnasium Political and Social Studies (2020)

First state examination for the teaching degree Grundschule History (2021)

First state examination for the teaching degree Gymnasium History (2021)

First state examination for the teaching degree Realschule History (2021)

First state examination for the teaching degree Mittelschule History (2021)

First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021)

First state examination for the teaching degree Gymnasium English (2021)

First state examination for the teaching degree Gymnasium Philosophy and Ethics (2021)

First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021)

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First state examination for the teaching degree Gymnasium Philosophy and Ethics (2022) First state examination for the teaching degree Gymnasium Russian (2023) First state examination for the teaching degree Gymnasium Mathematics (2023) First state examination for the teaching degree Gymnasium English (2023) First state examination for the teaching degree Realschule English (2023) First state examination for the teaching degree Grundschule English (2023) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023) First state examination for the teaching degree Mittelschule English (2023) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2023) 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) First state examination for the teaching degree Grundschule German (2024) First state examination for the teaching degree Gymnasium German (2024) First state examination for the teaching degree Realschule German (2024) First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2024) First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2024) First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2024) First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2024) First state examination for the teaching degree Mittelschule German (2024) First state examination for the teaching degree Grundschule Music Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024) First state examination for the teaching degree Mittelschule Music Education in Middle School (2024) First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024) First state examination for the teaching degree Gymnasium Latin Philology (2024) First state examination for the teaching degree Gymnasium English (2024) First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2024) First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2024) First state examination for the teaching degree Grundschule History (2024) First state examination for the teaching degree Gymnasium History (2024) First state examination for the teaching degree Realschule History (2024) First state examination for the teaching degree Mittelschule History (2024) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2024) First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2024) First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2024) First state examination for the teaching degree Gymnasium Greek Philology (2024) First state examination for the teaching degree Grundschule Art Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2024) First state examination for the teaching degree Mittelschule Art Education in Middle School (2024)

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Module	title				Abbreviation
Microso	cale Ex	periments in Chemistry 1	eaching		08-FD-MS-152-m01
Module	coord	inator		Module offered by	
holder	of the F	Professorship of Didactic	s of Chemistry	Institute of Inorgani	c Chemistry
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed lear	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
S (2)					
Method ster, inf	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
project: Langua	: prese ge of a	ntation of a project (appr ssessment: German and,	ox. 30 minutes) ′or English		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)	
§ 22 § 22 § 22	Nr. 1 h) Nr. 2 f) Nr. 3 f)			<u> </u>	
Module	e appea	nrs in			
First sta First sta First sta First sta First sta First sta First sta First sta fungson First sta (Prüfun	ate exa ate exa gsordn	mination for the teaching mination for the teaching sversion 2015)) mination for the teaching ungsversion 2015))	degree Grundschule degree Grundschule degree Realschule C degree Gymnasium degree Sonderpäda degree Mittelschule degree Mittelschule degree Mittelschule degree Mittelschule degree Sonderpäda	Chemistry (2015) Didactics in Chemis chemistry (2015) Chemistry (2015) gogik Didactics in Ch Chemistry (2015) Didactics in Chemis Chemistry (2020 (Pr Didactics in Chemis gogik Didactics in Ch	stry (Primary School) (2015) nemistry (Middle School) (2015) try (Middle School) (2015) üfungsordnungsversion 2015)) try (Middle School) (2020 (Prü- nemistry (Middle School) (2020

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Module title				Abbreviation
Training for Exams in Chemistry Teaching for High School			eachers	08-FD-PVLAGY-152-m01
Module coord	linator		Module offered by	·
holder of the	Professorship of Didactic	s of Chemistry	Institute of Inorgan	ic Chemistry
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)	
2 (not)	successfully completed			
Duration	Module level	Other prerequisites		
1 semester	unknown			
Contents				
No informatio	n on contents available.			
Intended lear	ning outcomes			
No informatio	n on learning outcomes a	available.		
Courses (type	, number of weekly conta	act hours, language –	- if other than Germa	ın)
S (2)				
Method of as ster, informat	sessment (type, scope, la ion on whether module c	anguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
talk on 3 sele Language of a	cted assignments (approx assessment: German and	x. 30 minutes each) /or English		
Allocation of	places			
Additional inf	ormation			
Workload				
60 h				
Teaching cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)				
§ 22 II Nr. 3 f)				
Module appea	ars in			
First state exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)	

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Module	e title				Abbreviation
Instructions for Scientific Research				08-FD-WA-152-m01	
Module	Module coordinator			Module offered by	
holder	of the l	Professorship of Didactics	s of Chemistry	Institute of Inorgani	ic Chemistry
ECTS	Methe	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	unknown			
Conten	ts				
No info	rmatio	n on contents available.			
Intende	ed lear	ning outcomes			
No info	rmatio	n on learning outcomes a	vailable.		
Course	s (type	, number of weekly conta	ct hours, language –	· if other than Germa	n)
S (2)	- (-)	,			,
Method ster, inf present	d of ass format	sessment (type, scope, la ion on whether module ca (approx. 30 minutes)	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Langua	ge of a	ssessment: German and	/or English		
Allocat	ion of _l	places			
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)	
§ 22 § 22	Nr. 1 h) Nr. 2 f)				
§ 22 Nr. 3 f)					
Module	e appea	ars in			
First sta	ate exa	mination for the teaching	g degree Grundschule	Chemistry (2015)	
First state examination for the teaching degree Realschule Chemistry (2015)					
First sta	ate exa	mination for the teaching	degree Gymnasium	Chemistry (2015)	
First sta	ate exa	mination for the teaching	degree Mittelschule	Chemistry (2015)	
First sta	First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))				

Module title				Abbreviation	
W- and	P-Sem	inars in High Schools			08-FD-WP-152-m01
Module	Module coordinator			Module offered by	
holders Physics	holders of the Professorships of Chemistry Teaching and Physics Teaching			Institute of Inorgan	ic Chemistry
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
2	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Project um sch ers adv Oberstu minar.	semina ools: V vice and ufe stu	ars (P-Seminars) and aca Vhat do they teach and ho I project management in dents to good academic p	demic skills seminar ow are they designed the context of a P-Se practice in the contex	s (W-Seminars) for O l?; sitting in on class minar; supervising s tt of a W-Seminar; de	berstufe students at Gymnasi- es at a Gymnasium school; care- eminar papers and introducing esigning a W-Seminar and a P-Se-
Intende	ed lear	ning outcomes			
Studen Gymna:	ts are a sium s	able to independently de chools.	sign and teach W-Ser	ninars and P-Semina	ars for Oberstufe students at
Course	s (type	, number of weekly conta	ct hours, language —	- if other than Germa	in)
S (2)					
Methoo ster, in	d of ass formati	sessment (type, scope, la ion on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
project Langua	: prese ige of a	ntation of a project (appr ssessment: German and,	ox. 30 minutes) /or English		
Allocat	ion of _l	olaces			
Additio	nal inf	ormation	·		
Worklo	ad				
60 h	60 h				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
§ 22	§ 22 Nr. 3 f)				
Module	appea	ars in			
First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)	
			=		

Module	title				Abbreviation
Practica	al Rese	arch Course for Gramma	r School Teachers		08-Forsch-LAGY-152-m01
Module	coord	inator		Module offered by	
lecture	r of the	respective research grou	ıp	Faculty of Chemistry	y and Pharmacy
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	Depending on their arbeit (thesis) pursu teaching-degree pro died with a focus on highly recommende completing module	Depending on their choice of topic, students who are writing their Haus- arbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) in the vertieft studiertes Fach (subject stu- died with a focus on the scientific discipline) Chemie (Chemistry) are highly recommended to complete module o8-Forsch-LAGY directly before completing module o8-Ch-HA-GY	
Conten	ts				
This mo and usi	odule g ng the	ives students the opport scientific methods they h	unity to research and nave learned during t	write on a defined p he programme.	roblem within a given time frame
Intende	ed learr	ning outcomes			
Studen [®] practice	ts are a e, and t	able to conduct research to present the results of t	on a defined problem heir work in written fo	n/topic, adhering to to form.	the principles of good scientific
Course	s (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (16)					
Methoo ster, inf	l of ass formati	e ssment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Log (ap Langua	prox. 2 ge of a	o pages) ssessment: German and,	/or English		
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Additio 30 days	nal info 5.	ormation on module dura	ition: block placemer	it / block taught prac	ctical course with a duration of
Worklo	ad				
240 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§621N	lr. 4				
Module	appea	rs in			
First sta Master' Master' Master'	Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)				

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 42 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module title			Abbreviation			
Organi	c Chem	istry 1			08-0C1-152-m01	
Module	e coord	inator		Module offered by		
holder	of the F	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		•		
Duration Module level Other pres		Other prerequisites				
1 seme	ster	undergraduate				
Conten	its					
This me the bou organic dition a	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.					
Intend	ed learr	ning outcomes				
Studer of nom lecules that pu synthe	its knov enclatu . They a irpose, ses.	v important categories are to determine simple are able to describe an they can analyse and c	of substances in orgar substance names. Stu d formulate some of th ategorise the characte	ic chemistry. They a udents are able to an e most important rea ristic reaction condit	re able to use differe alyse the stereochen actions in organic ch ions and can use the	nt systems mistry of mo- emistry. For em for simple
Course	s (type	number of weekly con	tact hours, language –	- if other than Germa	n)	
V (3) +	Ü (1)					
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
a) writt b) oral c) oral d) log (e) pres Langua	en exar examin examin (approx entatio age of a	nination (approx. 90 to ation of one candidate ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German ar	9 180 minutes) or 9 each (20 to 30 minute 9 3 candidates (approx 9 d/or English	s) or . 15 minutes per can	didate) or	
Allocat	ion of p	olaces				
Additio	onal info	ormation				
accord and No	ing to § 0. 2 of a	2 para. 2 sentence 2 A nnex 2 to the APOLmCl	POLmCh in conjunctio	n with No. I 2nd lette	r b) of annex 1 to the	e APOLmCh
Worklo	ad					
150 h						
Teachi	ng cycl	9				
Teachi	ng cycle	e: every year, summer s	emester			
Referre	ed to in	LPOI (examination reg	gulations for teaching-	degree programmes)		
§ 62 Nr. 2						
Module	e appea	rs in				
Bachelor's degree (1 major) Biology (2011)						
Bachelor's degree (1 major) Chemistry (2010)						
Bachelor's degree (1 major) Psychology (2010)						
Bachelor's degree (1 major, 1 minor) Pedagogy (2013)						
Bachelor's degree (1 major, 1 minor) Political and Social Studies (2013)						
Bachel	Bachelor's degree (1 major, 1 minor) Russian Language and Culture (2008)					
Bachel	or's deg	gree (2 majors) Special	Education (2009)			
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu reg. data reco	urg • generated 18-Apr-2025 • ord Lehramt Gymnasien Cherr	exam. iie - 2015	page 43 / 72

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 degree (1 major) Mathematical Physics (2016) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Lehramt Gymnasien Chemie - 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) 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 degree (1 major) Nanostructure Technology (2020) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. reg. data record Lehramt Gymnasien Chemie - 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) 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) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 46 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

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)

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 47 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module title			Abbreviation			
Organi	c Chem	istry 2			08-0C2-VL-152-mo	L
Module	e coordi	inator		Module offered by		
holder	of the C	Chair of Physically Orga	nic Chemistry	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
6	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
This module introduces students to the rules of aromaticity and discusses specific reactions of aromatics. Using the example of carbonyl compounds, it extends the students' knowledge of substitution, elimination and addition reactions to complex reaction mechanisms. The course also focuses on oxidation and reduction reactions as well as rearrangement.						
Intende	ed learr	ning outcomes				
Studen bonyl c they ca unknov	ts have ompou n plan vn reac	become familiar with nds. They are able to c and formulate multi-st tions.	the criteria for aromatic lescribe specific reactic age syntheses with con	tity. They can analyse ons of carbonyls and oplex reaction mecha	e the varying reactiv aromatics. For that J anisms and can tran	ity of car- ourpose, sfer them to
Course	s (type,	number of weekly cor	tact hours, language –	· if other than Germa	n)	
V (3) +	Ü (1)					
Method ster, in	l of ass formati	essment (type, scope, on on whether module	language — if other tha can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
b) oral c) oral d) log (e) pres Langua	examin examin approx entatio ge of a	ation of one candidate ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German ar	e each (20 to 30 minute o 3 candidates (approx od/or English	s) or . 15 minutes per cano	didate) or	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
accordi and No	ing to § . 2 of a	2 para. 2 sentence 2 A nnex 2 to the APOLmCl	POLmCh in conjunction	n with No. I 2nd lette	r b) of annex 1 to the	e APOLmCh
Worklo	ad					
180 h						
Teachi	ng cycl	9				
	<u> </u>					
Referre	d to in	LPOI (examination re	gulations for teaching-o	legree programmes)		
§ 42 Nr. 2 and § 22 Nr. 1 h) § 62 Nr. 2						
Module appears in						
Bachel	or's deg	gree (1 major) Function	al Materials (2015)			
First state examination for the teaching degree Grundschule Chemistry (2015)						
First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015)						
First state examination for the teaching degree Realschule Chemistry (2015)						
First sta	ate exa	mination for the teachi	ng degree Gymnasium	Chemistry (2015)		
First sta	ate exa	mination for the teachi	ng degree Sonderpäda	gogik Didactics in Ch	nemistry (Middle Sch	100l) (2015)
First sta	ate exa	mination for the teachi	ng degree Mittelschule	Chemistry (2015)		
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu reg. data reco	irg • generated 18-Apr-2025 • rrd Lehramt Gymnasien Chem	exam. ie - 2015	page 48 / 72

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

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

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

Bachelor's degree (1 major) Food Chemistry (2021)

Bachelor's degree (1 major) Food Chemistry (2025)

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 49 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	Module title Abbreviation					
Organic Chemistry 3 08-0C3-152-m01						
Module coordinator			Module offered by			
holder of the Professorship of Organic Chemistry		c Chemistry	Institute of Organic	Chemistry		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	Contents					
This mo radical tallic cl	odule fo s. It dis nemistr	ocuses on polar rearrar cusses the fundamenta y and retrosynthesis.	gements, olefination r al principles of stereos	eactions, pericyclic r elective synthesis, a	eactions, carbenes, symmetric catalysis,	nitriles and organome-
Intende	ed learr	ning outcomes				
Studen asymm thetic a	ts are a etric ca malyse	ble to formulate olefin italyses. Students are a s of molecules.	ation reactions. They a ble to describe organc	re able to develop st metallic reactions. T	ereoselective synthe hey are able to cond	eses and luct retrosyn-
Course	s (type,	, number of weekly con	tact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Method ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
b) oral c) oral d) log (e) pres Langua	examin examin approx entatio ige of a	ation 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 d/or English	s) or . 15 minutes per cano	didate) or	
Allocation of places						
Additio	nal info	ormation				
Workload						
180 h						
Teachi		n				
Teacini	ig cycu					
 Doforra	d to in	IDOL (avamination ra				
Kelelle S a a llu				regree programmes)		
§ 22 § 22 § 22	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)					
Module appears in						
First state examination for the teaching degree Grundschule Chemistry (2015)						
First state examination for the teaching degree Realschule Chemistry (2015)						
First state examination for the teaching degree Gymnasium Chemistry (2015)						
First state examination for the teaching degree Mittelschule Chemistry (2015)						
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)						
master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)						
Master	's teach	ning degree Gymnasium	n MINT Teacher Educat	ion PLUS. Elite Netwo	ork Bayaria (FNB) (20)25)
		<u> </u>				<i></i>
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu reg. data reco	irg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	exam. nie - 2015	page 50 / 72

Modul	Module title Abbreviation					
Organic Chemistry 4 08-OC4-152-mo1						
Module coordinator Module offered			Module offered by	<u> </u>		
holder of the Chair of Organic Chemistry II			trv ll	Institute of Organic Chemistry		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	nume	rical grade				
Durati	n	Module level	Other prorequisites			
1 seme	ster	undergraduate				
Conter	Contents					
This m cial ha analys	odule d zardou: is.	iscusses biologically in s substances, complica	nportant bonding class ted working and synth	ses, their reactions a esis techniques, pur	nd syntheses, workin ification methods an	ng with spe- id product
Intend	ed lear	ning outcomes				
Studer able to proteir ids.	nts are a charac ns. In ac	able to name important terise and categorise d Idition, they are able to	heteroaromatics and t yes. Students are able describe the structure	o formulate their rea to describe the struc of the DNA, carbohy	ctions and synthese cture and selective s /drates, fats, terpene	s. They are ynthesis of es and stero-
Course	s (type	, number of weekly cont	tact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other th can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
c) oral d) log (e) pres Langua	examin (approx entatio age of a	ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German an	3 candidates (approx d/or English	. 15 minutes per cano	didate) or	
Allocation of places						
Additio	onal inf	ormation				
Worklo	bad					
150 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination reg	ulations for teaching-	degree programmes)		
§ 22 § 22 § 62	§ 22 Nr. 1 h) § 22 Nr. 2 f) § 62 Nr. 2					
Module appears in						
Bachel	or's de	gree (1 major) Biochemi	stry (2015)			
First state examination for the teaching degree Grundschule Chemistry (2015)						
First st	First state examination for the teaching degree Realschule Chemistry (2015)					
First st	ate exa	mination for the teachir	ng degree Gymnasium	Chemistry (2015)		
First state examination for the teaching degree Mittelschule Chemistry (2015)						
Master's degree (1 major) Functional Materials (2016)						
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)						
Bachel	or's de	gree (1 major) Biochemi	stry (2017)			
LA Gymnas	sien Chemi	stry (2015)	JMU Würzbı reg. data reco	urg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	exam. nie - 2015	page 51 / 72

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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) Biochemistry (2022)

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

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 52 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	1

Module	title				Abbreviation	
Organic Chemistry - laboratory course (teaching degree for secondary			08-OCP-LAGY-152-m01			
schools	ichools)					
Module	Module coordinator Module offered by					
lecturer	rs Orga	nische Chemie (Organic	Chemistry)	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
6	(not) s	successfully completed	08-0C1			
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate				
Conten	ts					
This mo lated le dition to their kn operatio	odule g cture(s o those owledg ons of	ives students the opport s). After a safety briefing, e experiments, students v ge. The course focuses of organic chemistry, simple	unity to apply in prac the students autonor will be expected to ta n the safe handling or e to multi-level synthe	tice the knowledge t nously conduct expo ke oral tests and wri f hazardous substan eses and the analys	they have gained through the re- eriments in the laboratory. In ad- ite lab reports to demonstrate nces, simple experimental unit is of the products.	
Intende	ed leari	ning outcomes				
Student rations error so in the la	Students know how to safely handle hazardous substances. They are able to conduct simple experimental operations of organic chemistry. They are able to analyse the yield and purity of the products and identify possible error sources. They are able to connect the theoretical aspects covered in the lecture with practical experiments in the laboratory.					
Courses	s (type	, number of weekly conta	ct hours, language —	if other than Germa	in)	
P (9)						
Method ster, inf	l of ass formati	sessment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
Vortesta pages e Langua Assessi	ate/Na each) a ge of a ment o	chtestate (pre and post-e nd assessment of practic ssessment: German and, ffered: Once a year, sum	experiment examinati al performance (2 to /or English mer semester	on talks approx. 15 4 random examinati	minutes each, log approx. 5 to 10 ions)	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
180 h						
Teaching cycle						
	<u> </u>					
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
§ 62 N	8 62 Nr 2					
Module	annea	urs in				
First sta	ate exa	mination for the teaching	degree Gymnasium	Chemistry (2015)		
First sta	ate exa	mination for the teaching	degree Gymnasium	Chemistry (2015)		

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 53 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	e title				Abbreviation	
Practical spectroscopy 1				08-0C-Spec-152-m01		
Module	e coord	inator		Module offered by		
lecture	r of lect	ture "Organische Chemie	2"	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
This mo NMR sp	odule ir pectros	ntroduces students to the copy.	e spectroscopic meth	ods of infrared spec	troscopy, mass spectrometry and	
Intende	ed learı	ning outcomes				
Studen regardi	ts are a ng the	able to describe importar molecular structure.	nt spectroscopic meth	ods, to evaluate a s	pectrum and to draw conclusions	
Course	s (type	, number of weekly conta	ict hours, language —	if other than Germa	n)	
V (2)						
Methoo ster, in	d of ass formati	sessment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
c) oral d) log (e) pres Langua	examin approx entatio ge of a	ation of one candidate e ation in groups of up to g . 20 pages) or n (approx. 30 minutes) ssessment: German and,	/or English	15 minutes per cano	didate) or	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
90 h						
Teachi	ng cycl	e				
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
§ 22	Nr. 1 h)		<u>_</u>	· · · ·		
§ 22	Nr. 2 f)					
§ 62 Nr. 2						
Module	e appea	ars in				
Bachel	Bachelor's degree (1 major) Functional Materials (2015)					
First sta	First state examination for the teaching degree Grundschule Chemistry (2015)					
First sta	ate exa	mination for the teaching	g degree Realschule C	hemistry (2015)		
First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)		
First Sta	ate exa	mination for the teaching	g degree Mittelschule	Chemistry (2015)	(iifungsordnungsvorsion 2015))	
LIIST SLO	First state examination for the teaching degree Mittelschule Chemistry (2020 (Prurungsordnungsversion 2015))					

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Basic Mathematics					
Sasic Mathematics 08-PC-EKM-152-m01					
Module coordinator	Module offered by				
lecturer of block course "Mathematik" (Mather	s) Institute of Physical and Theoretical Chemistry				
ECTS Method of grading Only a	ucc. compl. of module(s)				
2 (not) successfully completed					
Duration Module level Other	quisites				
1 semester undergraduate					
Contents					
This module provides an introduction to mathemistry. It trains students in those methods wit	cal concepts and methods used in physical/theoretical che- help of examples taken from thermodynamics and kinetics.				
Intended learning outcomes					
Students have been trained in mathematical n mistry.	ds. They are able to apply those methods to problems in che-				
Courses (type, number of weekly contact hour	guage — if other than German)				
V (1) + Ü (1)					
Method of assessment (type, scope, language ster, information on whether module can be ch	other than German, examination offered — if not every seme- to earn a bonus)				
written exercises (approx. 20) Language of assessment: German and/or Engl					
Allocation of places					
Additional information					
Workload					
60 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
First state examination for the teaching degree	nasium Chemistry (2015)				

LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 55 / 72
	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	Module title Abbreviation					
Molecu	Molecular structure and spectroscopy 08-PC-MBS-152-mo1					
Module coordinator			Module offered by			
lecturer of lecture "Molekülbau and Spektroskopie"		Institute of Physica	l and Theoretical Che	emistry		
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	lts					
This me le in a chemic spectro troscop	odule p box mo cal bonc oscopy, oy.	rovides an introduction del, quantum mechani Is. Analysis of molecul a particular focus will	n to molecular structure cal description of the h es on the basis of the h be on UV-VIS spectrosc	e, spectroscopy and hydrogen atom, atom harmonic oscillator a copy, vibrational spe	quantum mechanics ic orbitals, molecula nd rigid rotor model: ctroscopy and micro	. The partic- Ir orbitals, s. As regards wave spec-
Intend	ed learr	ning outcomes				
Studer descrit	its are a be diffei	ble to explain key mod ent spectroscopic met	lels of quantum mecha hods.	nics and to apply the	em to molecules. The	ey are able to
Course	s (type,	, number of weekly con	itact hours, language –	- if other than Germa	n)	
V (2) +	Ü (2)					
Metho ster, in	d of ass formati	essment (type, scope, on on whether module	language — if other the can be chosen to earn	an German, examina a bonus)	tion offered — if not	every seme-
c) oral d) log (e) pres Langua credita	examin approx entatio age of a ble for	ation in groups of up to . 20 pages) or n (approx. 30 minutes) ssessment: German ar bonus	o 3 candidates (approx nd/or English	. 15 minutes per cano	didate) or	
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
150 h						
Teachi	ng cycl	9				
Referre		LPOT (examination reg	gulations for teaching-	uegree programmes)		
9 62 1 f	Nr. 1					
Module appears in						
First state examination for the teaching degree Grundschule English (2009)						
First state examination for the teaching degree Grundschule Chemistry (2009)						
First state examination for the teaching degree Grundschule Geography (2009)						
First st	ate exa	mination for the teachi	ng degree Grundschule	e Protestant Theology	y (2009)	
First st	First state examination for the teaching degree Grundschule German (2009)					
First st	First state examination for the teaching degree Grundschule History (2009)					
First st	ate exa	mination for the teachi	ng degree Grundschule	e history (2015)		
LA Gymnas	ien Chemi	stry (2015)	JMU Würzbu reg. data reco	urg • generated 18-Apr-2025 • ord Lehramt Gymnasien Chem	exam. iie - 2015	page 56 / 72

First state examination for the teaching degree Grundschule Catholic Theology (2009) First state examination for the teaching degree Grundschule Mathematics (2009) First state examination for the teaching degree Grundschule Music (2009) First state examination for the teaching degree Grundschule Physics (2009) First state examination for the teaching degree Grundschule Social Science (2009) First state examination for the teaching degree Grundschule Science of Sport (2009) First state examination for the teaching degree Hauptschule English (2009) First state examination for the teaching degree Hauptschule Biology (2009) First state examination for the teaching degree Hauptschule Chemistry (2009) First state examination for the teaching degree Hauptschule Geography (2009) First state examination for the teaching degree Hauptschule Protestant Theology (2009) First state examination for the teaching degree Hauptschule German (2009) First state examination for the teaching degree Hauptschule History (2009) First state examination for the teaching degree Hauptschule Catholic Theology (2009) First state examination for the teaching degree Hauptschule Mathematics (2009) First state examination for the teaching degree Hauptschule Music (2009) First state examination for the teaching degree Hauptschule Physics (2009) First state examination for the teaching degree Hauptschule Social Science (2009) First state examination for the teaching degree Hauptschule Science of Sport (2009) First state examination for the teaching degree Realschule English (2009) First state examination for the teaching degree Realschule Biology (2009) First state examination for the teaching degree Realschule Chemistry (2009) First state examination for the teaching degree Realschule Geography (2009) First state examination for the teaching degree Realschule Protestant Theology (2009) First state examination for the teaching degree Realschule French Studies (2009) First state examination for the teaching degree Realschule German (2009) First state examination for the teaching degree Realschule History (2009) First state examination for the teaching degree Realschule Computer Science (2012) First state examination for the teaching degree Realschule Catholic Theology (2009) First state examination for the teaching degree Realschule Mathematics (2009) First state examination for the teaching degree Realschule Music (2009) First state examination for the teaching degree Realschule Physics (2009) First state examination for the teaching degree Realschule Science of Sport (2009) First state examination for the teaching degree Sonderpädagogik Pedagogy of Secondary Education (2009) First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2009) First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2013) First state examination for the teaching degree Mittelschule English (2013) First state examination for the teaching degree Mittelschule Biology (2013) First state examination for the teaching degree Mittelschule Chemistry (2013) First state examination for the teaching degree Mittelschule Geography (2013) First state examination for the teaching degree Mittelschule Protestant Theology (2013) First state examination for the teaching degree Mittelschule German (2013) First state examination for the teaching degree Mittelschule History (2013) First state examination for the teaching degree Mittelschule Catholic Theology (2013) First state examination for the teaching degree Mittelschule Mathematics (2013) First state examination for the teaching degree Mittelschule Physics (2013) First state examination for the teaching degree Mittelschule Social Science (2013) First state examination for the teaching degree Mittelschule Science of Sport (2013) Bachelor's degree (1 major) Biochemistry (2015) First state examination for the teaching degree Grundschule English (2015) First state examination for the teaching degree Grundschule Biology (2015) First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Grundschule Geography (2015) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 57 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

First state examination for the teaching degree Grundschule German (2015) First state examination for the teaching degree Grundschule Catholic Theology (2015) First state examination for the teaching degree Grundschule Mathematics (2015) First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2015) First state examination for the teaching degree Grundschule Physics (2015) First state examination for the teaching degree Grundschule Social Science (2015) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Chemistry (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Geography (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Catholic Theology (Primary School) (2015) First state examination for the teaching degree Grundschule Art Education in Primary School (2015) First state examination for the teaching degree Grundschule Didactics in Science of Sport (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Mathematics (Primary School) (2015) First state examination for the teaching degree Grundschule Music Education in Primary School (2015) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015) First state examination for the teaching degree Grundschule Didactics in Social Science (Primary School) (2015) First state examination for the teaching degree Grundschule Science of Sport (2015) First state examination for the teaching degree Realschule English (2015) First state examination for the teaching degree Realschule Biology (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Realschule Geography (2015) First state examination for the teaching degree Realschule Protestant Theology (2015) First state examination for the teaching degree Realschule French Studies (2015) First state examination for the teaching degree Realschule German (2015) First state examination for the teaching degree Realschule History (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Realschule Catholic Theology (2015) First state examination for the teaching degree Realschule Mathematics (2015) First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Realschule Science of Sport (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2015) First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Primary School) (2015)First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Mathematics (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Ergonomics (Teaching at the German Mittelschule) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Middle School) (2015) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 58 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

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First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Catholic Theology (Middle School) (2015)

First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Science of Sport (Middle School) (2015)

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

First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Social Science (Middle School) (2015)

First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2015) First state examination for the teaching degree Mittelschule English (2015)

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

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

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

First state examination for the teaching degree Mittelschule Protestant Theology (2015)

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

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

First state examination for the teaching degree Mittelschule Catholic Theology (2015)

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

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

First state examination for the teaching degree Mittelschule Social Science (2015)

First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2015) First state examination for the teaching degree Mittelschule Ergonomics (Teaching at the German Mittelschule) (2015)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2015)

First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2015)

First state examination for the teaching degree Mittelschule Art Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2015) First state examination for the teaching degree Mittelschule Music Education in Middle School (2015) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Social Science (Middle School) (2015)

First state examination for the teaching degree Mittelschule Science of Sport (2015) First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2015)

First state examination for the teaching degree Grundschule Protestant Theology (2015)

First state examination for the teaching degree Grundschule Music (2015)

First state examination for the teaching degree Grundschule Didactics in Protestant Theology (Primary School) (2015)

First state examination for the teaching degree Realschule Music (2015)

First state examination for the teaching degree Sonderpädagogik Didactics in Protestant Theology (Primary School) (2015)

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

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	reg. data record Lehramt Gymnasien Chemie - 2015	

First state examination for the teaching degree Realschule French Studies (2016) First state examination for the teaching degree Grundschule English (2016) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2016) First state examination for the teaching degree Realschule English (2016) First state examination for the teaching degree Mittelschule English (2016) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2016) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2016) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) Bachelor's degree (1 major) Biochemistry (2017) First state examination for the teaching degree Grundschule Physics (2018) First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Mittelschule Physics (2018) First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020) First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Chemistry (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule German (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule English (2020 (Prüfungsordnungsversion 2016)) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016)) First state examination for the teaching degree Mittelschule Protestant Theology (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Protestant Theology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Geography (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Geography (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule History (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Catholic Theology (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Catholic Theology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Mathematics (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Mathematics (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Art Education in Middle School (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Science of Sport (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Science of Sport (Middle School) (2020 (Prüfungsordnungsversion 2015)) LA Gymnasien Chemistry (2015) JMU Würzburg • generated 18-Apr-2025 • exam. page 60 / 72 reg. data record Lehramt Gymnasien Chemie - 2015

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

First state examination for the teaching degree Mittelschule Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))

First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (2020 (Prüfungsordnungsversion 2016))

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

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

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

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

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

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

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

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

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

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

First state examination for the teaching degree Sonderpädagogik Teaching at the German Mittelschule (2020 (Prüfungsordnungsversion 2015))

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

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

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

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

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

First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2020 (Prüfungsordnungsversion 2015))

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

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

First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2020) First state examination for the teaching degree Grundschule Physics (2020)

First state examination for the teaching degree Realschule Physics (2020)

First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2020) First state examination for the teaching degree Mittelschule Physics (2020)

First state examination for the teaching degree Grundschule Political and Social Studies (2020)

First state examination for the teaching degree Grundschule Didactics in Political and Social Studies (Primary School) (2020)

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First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2020) First state examination for the teaching degree Sonderpädagogik Didactics in Political and Social Studies (Secondary School) (2020) First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2020) First state examination for the teaching degree Mittelschule Didactics in Political and Social Studies (Secondary School) (2020) First state examination for the teaching degree Mittelschule Political and Social Studies (2020) First state examination for the teaching degree Grundschule History (2021) First state examination for the teaching degree Realschule History (2021) First state examination for the teaching degree Mittelschule History (2021) First state examination for the teaching degree Grundschule Pedagogy of Primary Education (2021) First state examination for the teaching degree Sonderpädagogik Pedagogy of Primary Education (2021) Bachelor's degree (1 major) Biochemistry (2022) First state examination for the teaching degree Realschule English (2023) First state examination for the teaching degree Grundschule English (2023) First state examination for the teaching degree Grundschule Didactics in English (Primary School) (2023) First state examination for the teaching degree Mittelschule English (2023) First state examination for the teaching degree Mittelschule Didactics in English (Middle School) (2023) First state examination for the teaching degree Sonderpädagogik Didactics in English (Middle School) (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) First state examination for the teaching degree Grundschule German (2024) First state examination for the teaching degree Realschule German (2024) First state examination for the teaching degree Sonderpädagogik Didactics in German (Middle School) (2024) First state examination for the teaching degree Mittelschule Didactics in German (Middle School) (2024) First state examination for the teaching degree Grundschule Didactics in German (Primary School) (2024) First state examination for the teaching degree Sonderpädagogik Didactics in German (Primary School) (2024) First state examination for the teaching degree Mittelschule German (2024) First state examination for the teaching degree Grundschule Music Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Music Education in Primary School (2024) First state examination for the teaching degree Mittelschule Music Education in Middle School (2024) First state examination for the teaching degree Sonderpädagogik Music Education in Middle School (2024) First state examination for the teaching degree Mittelschule MS-Didaktik Career and Economics (2024) First state examination for the teaching degree Sonderpädagogik MS-Didaktik Career and Economics (2024) First state examination for the teaching degree Grundschule History (2024) First state examination for the teaching degree Realschule History (2024) First state examination for the teaching degree Mittelschule History (2024) First state examination for the teaching degree Mittelschule Didactics in History (Middle School) (2024) First state examination for the teaching degree Sonderpädagogik Didactics in History (Middle School) (2024) First state examination for the teaching degree Grundschule Didactics in History (Primary School) (2024) First state examination for the teaching degree Grundschule Art Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Art Education in Primary School (2024) First state examination for the teaching degree Sonderpädagogik Art Education in Middle School (2024) First state examination for the teaching degree Mittelschule Art Education in Middle School (2024) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2025)

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Module	Module title Abbreviation				
Physical Chemistry lab (teaching degree)				08-PCP-LA-152-m01	
Module	e coord	inator		Module offered by	
lecture mie"	r of lect	ture "Thermodynamik, Kiı	netik, Elektroche-	Institute of Physica	l and Theoretical Chemistry
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
3	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
lated le dition t their kr	odule g ecture(s to those nowled	ives students the opport s). After a safety briefing, e experiments, students v ge.	unity to apply in prac the students autono will be expected to ta	tice the knowledge t mously conduct expe ke oral tests and wri	hey have gained through the re- eriments in the laboratory. In ad- te lab reports to demonstrate
Intend	ed lear	ning outcomes			
Studen troscop	its are a by with	able to connect the theor practical laboratory expe	etical principles of th riments. They are ab	ermodynamics, kine e to analyse the resu	tics, electrochemistry and spec- ulting measurements.
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (3)					
Metho ster, in	d of ass formati	sessment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Vortest pages Langua Assess	ate/Na each) a ge of a ment o	chtestate (pre and post-e nd assessment of practic ssessment: German and, ffered: Once a year, winte	experiment examinat cal performance (2 to /or English er semester	ion talks approx. 15 ı 4 random examinati	minutes each, log approx. 5 to 10 ons)
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
90 h					
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
§ 42 Nr. 1 § 62 Nr. 1					
Module	Module appears in				
First sta First sta	ate exa ate exa	mination for the teaching mination for the teaching	g degree Realschule (g degree Gymnasium	Chemistry (2015) Chemistry (2015)	

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module title				Abbreviation	
Symme	Symmetry, chemical bonding and light - Part 1 08-PC-SBL1-152-m01				
Module coordinator Module offered				Module offered by	
lecturer Licht"	oflect	ture "Symmetrie, chemiso	che Bindung and	Institute of Physical	l and Theoretical Chemistry
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
This mo tions, p qualitat	odule p oint gr tive MC	rovides an introduction t oups, character tables ar) theory and gives an intr	o the symmetry of mo nd selection rules. Th oduction to the fund	olecules. It focuses on e module deals with amentals of computa	on group theory, symmetry opera- the chemical bond based on the ational chemistry.
Intende	ed leari	ning outcomes			
Student copic p	ts are a roperti	able to analyse the symm es of a particular molecu	etry of molecules. Th le from the symmetry	ey are able to draw o of that molecule.	conclusions about the spectros-
Courses	s (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)
V (3) + Ü	Ü (2)				
Method	l of ass	essment (type, scope, la	nguage — if other tha	an German, examina	tion offered — if not every seme-
ster, inf	formati	on on whether module ca	an be chosen to earn	a bonus)	
a) writte b) oral e c) oral e d) log (a e) prese	en exar examin examin approx entatio ge of a	nination (approx. 90 to 1 ation of one candidate e ation in groups of up to 3 . 20 pages) or n (approx. 30 minutes) ssessment: German and	80 minutes) or ach (20 to 30 minute 3 candidates (approx. /or English	s) or . 15 minutes per cano	didate) or
Allocati	ion of r	olaces			
Additio	nal inf	ormation			
Worklo	ad				
180 h					
Teachin	ng cycl	e			
	<u>15 cyce</u>	•			
Referre	d to in	LPOI (examination regu	lations for teaching-	legree programmes)	
§ 22 N § 22 N § 22 N	Nr. 1 h) Nr. 2 f) Nr. 3 f)				
Module appears in					
First state examination for the teaching degree Grundschule Chemistry (2015) First state examination for the teaching degree Realschule Chemistry (2015) First state examination for the teaching degree Gymnasium Chemistry (2015) First state examination for the teaching degree Mittelschule Chemistry (2015) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016) 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)) Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2020)					

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LA Gymnasien Chemistry (2015)	JMU Würzburg • generated 18-Apr-2025 • exam.	page 64 / 72
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Module title				Abbreviation		
Thermo	Thermodynamics, Kinetics, Electrochemistry 08-PC-TKE-152-m01				L	
Module coordinator Module offered by				Module offered by	<u> </u>	
lecture	or of lec	ture "Thermodynamik	Kinetik Elektroche-	Institute of Physica	l and Theoretical Ch	emistry
mie"		ture mennouynumik,				ennistry
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
9	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ester	undergraduate				
Conten	nts					
This m chemic dynam	odule i cal equi ic proc	ntroduces students to t libria, ideal and real ga esses, it discusses the	he principles of thermasses/solutions/mixed fundamental principle	odynamics. It focuse phases and electroos s of kinetics.	s on the laws of ther chemistry. In additio	modynamics, n to thermo-
Intend	ed lear	ning outcomes				
Studer	nts are a	able to explain the law	s of thermodynamics. T	hey are able to desc	ribe thermodynamic	aspects of
solutio of cher	ons, gas mical re	es, mixed phases and actions.	electrochemical reaction	ons. Students are ab	le to interpret the kir	netic aspects
Course	es (type	, number of weekly cor	tact hours, language -	– if other than Germa	an)	
V (4) +	Ü (2)					
Metho ster, in	d of as Iformati	s essment (type, scope, ion on whether module	language — if other th can be chosen to earr	an German, examina a bonus)	ition offered — if not	every seme-
c) oral d) log (e) pres Langua credita	examin (approx sentatio age of a able for	ation in groups of up t . 20 pages) or n (approx. 30 minutes) ssessment: German ar bonus	o 3 candidates (approx	. 15 minutes per can	didate) or	
Allocat	tion of	olaces				
Additio	onal inf	ormation				
Worklo	bad					
270 h						
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination re	gulations for teaching-	degree programmes)		
§ 62 N	Nr. 1		<u> </u>			
Module appears in						
Bachelor's degree (1 major) Biochemistry (2015)						
Bachelor's degree (1 major) Chemistry (2015)						
Bachelor's degree (1 major) Mathematics (2015)						
Bachelor's degree (1 major) Computational Mathematics (2015)						
Bachelor's degree (1 major) Functional Materials (2015)						
Bachelor's degree (1 maior) Biochemistry (2017)						
Bachel	lor's de	gree (1 major) Chemist	ry (2017)			
			- · · ·			
LA Gymnas	sien Chem	istry (2015)	JMU Würzb reg. data rec	urg • generated 18-Apr-2025 ord Lehramt Gymnasien Chen	• exam. nie - 2015	page 65 / 72

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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)

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Praktik ür Lehramt Gymania Gymani Gymania Gymania Gymania Gymania	Module title Abbreviation				Abbreviation	
Module coordinator Module offered by lecturers Physikalische Chemie (Physical Chemistry) Institute of Physical and Theoretical Chemistry ECTS Method of grading Only after succ. compl. of module(s) 3 (not) successfully completed OsPCP-LA Duration Module level Other prerequisites Isemester undergraduate Contents This module covers key experiments in physics. Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language – if other than German) P (3) Method of assessment (type, scope, language – if other than German, examination offered – if not every seme-ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocational information	Praktik	Praktikum der Physik für Lehramt Gymnasium 08-PHP-LAGY-152-mo1				
lecturers Physikalische Chemie (Physical Chemistry) Institute of Physical and Theoretical Chemistry ECTS Method of grading Only after succ. compl. of module(s) 3 (no1) successfully completed 08-PCP-LA Duration Module level Other prerequisits Isem successfully completed ose-PCP-LA Duration undergraduate Contents undergraduate Contents success key experiments in physics. Institute of Physical And Phoenetical Chemistry Students are able to plan, perform and evaluate key experiments in physics. Contents Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assess ¹ S Addito-state (Conce a year, summer semester S S Go h S S S Si h S S S S <	Module	Module coordinator			Module offered by	
ECTS Metro using grading only after succ. compl. of module(s) 3 nor usuessite only after succ. compl. of module(s) 3 nor usual construction of the preceduation	lecture	rs Phys	ikalische Chemie (Physic	al Chemistry)	Institute of Physica	l and Theoretical Chemistry
3 (not) successfully completed 08-PCP-LA Duration Module level Other prerequisites 1 semester undergraduate Contents This module covers key experiments in physics. Intended lear-ing outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment. German and/or English Assessment offered: Once a year, summer semester Allocation of places Motkload go h Teaching cycle Referred to	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
Duration Module level Other prerequisites 1 semester undergraduate Contents This module covers key experiments in physics. Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language – if other than German) P P (3) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of laces Additional information Freaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 1 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	3	(not) s	successfully completed	o8-PCP-LA		
1 semester undergraduate Contents This module covers key experiments in physics. Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P (3) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Motikoad 90 h Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 1 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Duratio	on	Module level	Other prerequisites		
Contents This module covers key experiments in physics. Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Moditional information Workload go h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 1 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	1 seme	ster	undergraduate			
This module covers key experiments in physics. Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: Germa and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload go h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 1 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Conten	ts				
Intended learning outcomes Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload go h Teaching cycle Referred to in LPO1 (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	This mo	odule c	overs key experiments in	physics.		
Students are able to plan, perform and evaluate key experiments in physics. Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Morkload 90 h Teaching cycle Referred to in LPO1 (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Intende	ed lear	ning outcomes			
Courses (type, number of weekly contact hours, language — if other than German) P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Studen	its are a	able to plan, perform and	evaluate key experin	nents in physics.	
P (3) Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload go h Teaching cycle Referred to in LPO 1 (examination regulations for teaching-degree programmes) § 62 I Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme-ster, information on whether module can be chosen to earn a bonus) Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	P (3)	_				
Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester Allocation of places Additional information Workload go h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Metho ster, in	d of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Allocation of places Additional information Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 l Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Vortestate/Nachtestate (pre and post-experiment examination talks approx. 15 minutes each, log approx. 5 to 10 pages each) and assessment of practical performance (2 to 4 random examinations) Language of assessment: German and/or English Assessment offered: Once a year, summer semester					
Additional information Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Allocat	ion of p	olaces			
Additional information Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)						
 Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Additio	onal inf	ormation			
Workload 90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)						
90 h Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Worklo	ad				
Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	90 h					
Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes) § 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)						
§ 62 Nr. 3 Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in First state examination for the teaching degree Gymnasium Chemistry (2015)	§ 62 Nr. 3					
First state examination for the teaching degree Gymnasium Chemistry (2015)	Module appears in					
	First sta	ate exa	mination for the teaching	g degree Gymnasium	Chemistry (2015)	

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Module	e title				Abbreviation
Training for Exams in Inorganic Chemistry			08-PVAC-152-m01		
Module coordinator Mc			Module offered by		
lecture	r of the	seminar		Faculty of Chemistr	y and Pharmacy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This mo on the s	odule g state e:	ives students the opport xamination and try exam	unity to revise topics papers from previous	in inorganic chemist s years.	try that are likely to be covered
Intende	ed learı	ning outcomes			
Studen previou	ts are a Is years	able to solve selected que	estions on inorganic (chemistry that were	asked in the state examination in
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
S (2)					
Methoo ster, in	l of ass formati	s essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
2 to 4 s Langua	hort ta ge of a	lks on selected assignme ssessment: German and	ents (approx. 10 minu /or English	tes each)	
Allocat	ion of r	olaces	0.1		
Additio	nal inf	ormation			
Worklo	ad				
60 h					
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
§ 22	Nr. 1 h)				
§ 22 II Nr. 2 f)					
<u>9</u> 22 11 1	vr. 3 f)				
Module	e appea	Irs In mination fon the teaching			
First Sta	ate exa	mination for the teaching	s degree Grundschule r degree Realschule (hemistry (2015)	
First sta	ate exa	mination for the teaching	degree Gymnasium	Chemistry (2015)	
First sta	ate exa	mination for the teaching	degree Mittelschule	Chemistry (2015)	
First sta	ate exa	mination for the teaching	degree Mittelschule	Chemistry (2020 (Pr	üfungsordnungsversion 2015))

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	reg. data record Lehramt Gymnasien Chemie - 2015	

Module	title				Abbreviation	
Training for Exams in Organic Chemistry 08-PVOC-152-m01		08-PVOC-152-m01				
Module	lodule coordinator Module offered by					
lecture	r of the	seminar		Faculty of Chemistry	y and Pharmacy	
ECTS	Metho	od of grading	Only after succ. com	ompl. of module(s)		
3	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
This mo the stat	odule g te exan	ives students the opport nination and try exam pa	unity to revise topics pers from previous ye	in organic chemistry ears.	that are likely to be covered on	
Intende	ed leari	ning outcomes				
Studen previou	ts are a Is years	able to solve selected que	estions on organic ch	emistry that were as	ked in the state examination in	
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
S (2)						
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus)						
4 to 8 s	hort ta	lks on selected assignme	ents (approx. 10 minu	tes each)		
Langua	ge of a	ssessment: German and,	or English			
Allocation of places						
Additio	nal inf	ormation				
Workload						
90 h						
Teachir	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
§ 22 Nr. 1 h)						
§ 22 II Nr. 2 f) S 22 II Nr. 2 f)						
First sta	e appea	IIS III mination for the teaching	dograo Crundachula	Chamistry (2015)		
First state examination for the teaching degree Bealschule Chemistry (2015)						
First state examination for the teaching degree Gymnasium Chemistry (2015)						
First sta	First state examination for the teaching degree Mittelschule Chemistry (2015)					
First sta	First state examination for the teaching degree Mittelschule Chemistry (2020 (Prüfungsordnungsversion 2015))					

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Modul	e title			Abbreviation	
Quant	um Chemistry			08-TC-152-m01	
Modul	e coordinator		Module offered by		
lecture	r of lecture "Ouantenchemie"		Institute of Physica	l and Theoretical Ch	emistrv
ECTS	Method of grading	Only after succ. cor	npl. of module(s)		
3	numerical grade				
Durati	on Module level	Other prerequisites	quisites		
1 seme	ester undergraduate				
Conter	its				
This m spin, t tion ar	odule provides students with he Pauli principle, Slater deten nd excited states, the Born-Op	deeper insights into ad minants, the Hartree-F penheimer approximat	vanced topics in qua ock method, correlat ion and bonding mod	antum chemistry. It f ion energy, configur dels of H2+.	ocuses on ation interac-
Intend	ed learning outcomes				
Studer	nts are able to describe excite	d states of molecules w	ith the help of key co	oncepts and models	
Course	es (type, number of weekly cor	ntact hours, language –	- if other than Germa	in)	
V (2) +	Ü (1)				
Metho	d of assessment (type, scope,	language — if other th	an German, examina	tion offered — if not	every seme-
ster, in	formation on whether module	e can be chosen to earn	a bonus)		
a) writt	ten examination (approx. 90 to	o 180 minutes) or			
c) oral	examination in groups of up t	o 3 candidates (approx	, 15 minutes per can	didate) or	
d) log	(approx. 20 pages) or		jacco p c. ca		
e) pres	entation (approx. 30 minutes))			
Langua	age of assessment: German ar	nd/or English			
	tion of places				
Alloca					
Additio	onal information				
Workle					
oo h					
Teachi	ng cycle				
reacin					
Roform	d to in IPO I (examination re	gulations for teaching.	degree programmes)		
§ 22	Nr. 2 f)				
§ 22	Nr. 3 f)				
Modul	e appears in				
Bachelor's degree (1 major) Chemistry (2015)					
Bachelor's degree (1 major) Mathematics (2015)					
Bachelor's degree (1 major) Computational Mathematics (2015)					
Eacher Suegree (1 major) Functional Materials (2015)					
First state examination for the teaching degree Realschule Chemistry (2015)					
First state examination for the teaching degree Gymnasium Chemistry (2015)					
First state examination for the teaching degree Mittelschule Chemistry (2015)					
Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)					
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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)

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Module	title				Abbreviation
Exercis	es in E	xperimental Presentation	n, Intermediate Schoo	ol	08-ÜİVmD-LAGY-152-m01
Module	e coord	inator		Module offered by	
lecture	rs of th	e three lectures offered in	n this module	Faculty of Chemistr	y and Pharmacy
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed	08-OCP-LAGY and o	B-PCP-LA	
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Studen clude li	ts will ve den	design, prepare and deliv nonstrations.	ver presentations on a	a range of topics in o	chemistry. Presentations will in-
Intende	ed lear	ning outcomes			
Students are able to deliver detailed and scientifically correct presentations on given topics in inorganic, orga- nic and physical chemistry that are tailored to the specific needs of their audience. They are able to select ex- periments on the topics in question that support particular teaching goals as well as to plan and safely perform them. Students will be expected to apply both their chemistry knowledge and skills and their teaching skills.					
Course	s (type	, number of weekly conta	ict hours, language —	if other than Germa	nn)
Ü (3) +	Ü (3) +	Ü (3)			
Method of assessment (type, scope, language — if other than German, examination offered — if not every seme- ster, information on whether module can be chosen to earn a bonus)					
One talk each in the fields of inorganic, organic and physical chemistry including demonstrations (approx. 45 mi- nutes each) Language of assessment: German and/or English Assessment offered: Once a year, winter semester					
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
§ 62 Nr. 5					
Module appears in					
First sta	First state examination for the teaching degree Gymnasium Chemistry (2015)				

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