

## Subdivided Module Catalogue for the Subject

# Chemistry

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

Examination regulations version: 2010 Responsible: Faculty of Chemistry and Pharmacy

JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record 82|032|-|-|H|2010



### **Course of Studies - Contents and Objectives**

The chemistry program in Würzburg offers a research-oriented curriculum. Graduates of the Bachelorprogram in chemistry are acquainted with the fundamentals of chemistry, possess the relevant experimental skills and are familiar with the general methods of scientific research. In lectures and tutorials the basic knowledge of the various areas of chemistry is imparted as well as the foundations of mathematics and physics. A further hallmark is the comparably large number of student lab courses. In these labs the laboratory skills and techniques used in experimental scientific work are taught. During their Bachelor thesis the students finally work for a limited time on a specific chemical problem. They demonstrate their scientific abilities in work which is performed under guidance, but to a large extent independently. The students obtain the necessary knowledge to attend a research-oriented Masters program. In addition they possess the basic qualifications necessary for further professional training in industry and business. In supplementary modules they acquire science-related soft skills in specific areas of chemistry and general soft skills that match their personal interests and serve as an additional qualification for various professional areas.

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## Abbreviations used

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

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

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

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

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

## Conventions

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

## Notes

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

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

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

## In accordance with

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

#### ASP02009

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

#### 10-May-2011 (2011-37)

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 credits	Method of grading	pag
Compulsory Courses (19	;o ECTS credits)		<u>.</u>	
General and Inorganic	Chemistry (47 ECTS credits)			
08-AC1-102-m01	Inorganic Chemistry 1	21	NUM	6
08-AC2-102-m01	Inorganic Chemistry 2	6	NUM	8
08-AC3-102-m01	Inorganic Chemistry 3	9	NUM	9
08-AS1-102-m01	Chemistry of the Elements and Analytical Chemistry	11	NUM	11
Organic Chemistry (39	ECTS credits)		1	1
08-0C1-092-m01	Organic Chemistry 1	5	NUM	18
08-0C2-102-m01	Organic Chemistry 2	9	NUM	20
08-0C3-102-m01	Organic Chemistry 3	15	NUM	22
08-0C4-102-m01	Organic Chemistry 4	10	NUM	24
Physical and Theoretic	cal Chemistry (38 ECTS credits)		I	
08-PC1-092-m01	Physical Chemistry 1	8	NUM	27
	Physical Chemistry 2: Thermodynamics, Kinetics, Electroche-			
08-PC2-092-m01	mistry	18	NUM	29
	Physical and Theoretical Chemistry 3: Symmetry and Quantum			
08-PC3-092-m01	Chemistry	6	NUM	31
08-PC4-092-m01	Physical Chemistry 4: Statistical Thermodynamics	3	NUM	33
08-TC-092-m01	Theoretical Models in Chemistry	3	NUM	36
Basics of Natural Scien	nces (21 ECTS credits)		<u>.</u>	
	Introduction to Physics for Students of Non-physics-related Mi-			
11-EFNF-072-m01	nor Subjects	7	NUM	41
	Practical Course Physics for Students of Non-physics-related	2		
11-PFNF-072-m01	Minor Subjects	3	B/NB	43
08-BC-092-m01	Biochemistry	6	NUM	1/
10-M-MCB-101-m01	Mathematics for students in Chemistry and Biology	5	NUM	39
Specialist Lab Course	(5 ECTS credits)			
08-VP-102-m01	Advanced laboratory course	5	B/NB	37
Thesis (10 ECTS credits)	· · · · · · · · · · · · · · · · · · ·			
08-BA-102-m01	Bachelor Thesis	10	NUM	13
Courses at partner unive	rsity abroad (50 ECTS credits)			
08-VPUB-132-m01	Courses at the partner university	50	NUM	38
Subject-specific Key Skil	ls (15 ECTS credits)		<u>.</u>	
Compulsory Courses (5	ECTS credits)			
03-TR-072-m01	Toxicology and legal studies	3	NUM	5
08-LRAC-092-m01	Literature research methods	1	B/NB	16
08-LROC-092-m01	Literature research methods	1	B/NB	17
Compulsory Electives (1	o ECTS credits)			<u>,                                     </u>
08-OP-102-m01	Advanced chemical practical course	5	B/NB	26
08-PS3-092-m01	Applied Spectroscopy 3	5	NUM	35
08-PKC-102-m01	Programming course for Chemistry Major	5	B/NB	34
08-BCP-092-m01	Biochemistry Lab	5	B/NB	15

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Module title Abbreviation						
Toxico	logy an	d legal studies			03-TR-072-m01	
Modul	e coord	inator		Module offered by		
lecture	r of lect	ture "Toxikologie und Red	chtskunde"	Faculty of Medicine		
ECTS	-	od of grading	Only after succ. con	,		
3		rical grade		1		
Duratio	L	Module level	Other prerequisites			
1 seme		undergraduate				
Conten	its					
Basics toxicol	-	l regulations for chemist	s (handling and trans	portation of hazardo	us materials), funda	mentals of
Intend	ed lear	ning outcomes				
		master the basics of lega the fundamentals of tox		nists (handling and t	ransport of hazardo	us substan-
Course	s (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)	
		mation on SWS (weekly o				
		<b>essment</b> (type, scope, la on on whether module c			tion offered — if not	every seme-
written	exami	nation (approx. 90 minut	es)			
	ion of p					
Additio	nalinf	ormation				
Additio	nat ini					
Worklo	ad					
	uu					
Teachi	ng cycl					
	is cyce		<u>.</u>			
Referre	ed to in	LPOI (examination regu	lations for teaching-	legree programmes)		
	<b>u</b> to III					
Module	e appea	ars in				
		ree (1 major) Biochemisti	ry (2011)			
	-	ree (1 major) Biochemisti				
Bachel	or' deg	ree (1 major) Biochemisti	ry (2009)			
Bachel	or' deg	ree (1 major) Chemistry (2	2007)			
Bachel	or' deg	ree (1 major) Chemistry (:	2008)			
Bachel	or' deg	ree (1 major) Chemistry (:	2010)			
Bachel	or' deg	ree (1 major) Chemistry (:	2009)			
Bachel	or' deg	ree (1 major) Food Chemi	stry (2009)			
Bachel	or' deg	ree (1 major) FOKUS Cher	nistry (2011)			
	-	ee (1 major) Chemistry (2	-			
	-	ee (1 major) Chemistry (2				
	-	ee (1 major) Chemistry (2	•			
		mination for the teachinន្				
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		mination for the teaching		• •		
		mination for the teaching				
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Module					Abbreviation	
Inorga	nic Che	mistry 1			08-AC1-102-m01	
Module	e coord	inator		Module offered by		
lecture Chemis		ture "Experimentalcher	nie" (Experimental	Institute of Inorgan	ic Chemistry	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
21		rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in th	e section on
Conten	ts					
les, me module exercis autono ques, t	etals, a e introd es bas mously he synt	provides students with a cid-base reactions, the luces fundamental mod ed on the lecture on ex y conduct experiments thesis of simple substa o advance their laborate	periodic table, chemic dels of chemistry and p perimental chemistry a in the laboratory. The c nces and analyses of u	al equilibrium and co rinciples of inorganion and its extension. Aft course focuses on lab	omplexometry. In ad c chemistry. It includ er a safety briefing, t poratory safety, simp	dition, the les practical the students le lab techni-
		ning outcomes	ing knowledger			
le to ex mical f are abl are abl loped t	cplain b ormula e to de e to ide he abil	able to explain the prin pasic models of the stru s to describe chemical scribe the main quantit entify fundamental prob ity to perform the nece panner, both in written a	icture of matter. They h reactions and to interp tative and qualitative a olems in chemistry and ssary stoichiometric ca	ave developed the a ret them by identifyi nalytical methods ar perform experiment	bility to use the lang ng the type of reaction nd their application a s to solve them. The	uage of che- on. Students areas. They y have deve-
Course	s (type	, number of weekly con	itact hours, language –	- if other than Germa	n)	
This m • c • c	odule h 8-AC1- 8-AC1- 8-AC1- 8-AC1-	as 4 components; info 1-102: V + V + Ü (no info 2-102: P (no informatio 3-102: V (no informatio 4-102: P (no informatio	rmation on courses list ormation on language a n on language and nur n on language and nur	ed separately for eac and number of weekl nber of weekly conta nber of weekly conta	ch component. y contact hours avai ct hours available) ct hours available)	lable)
		sessment (type, scope, ion on whether module			tion offered — if not	every seme-
		has the following 4 asse nent components to pa			ise, students must p	ass all of
mistry • 6 • F • A • L • C • C • C • C • C • C • C • C	1) 5 ECTS ( pages) Assessr anguag Doly aft by stude ment in Experi ECTS ( 1) 1 to 3 each (apuag	n module component o credits, pass / fail st-experiment examinat nent offered: once a ye ge of assessment: Gern er successful completic ents who successfully o n module component o ments Performed in Lak credits, numerical grad written examinations (a oprox. 20 minutes) or x ge of assessment: Gern	ion talks (Vor-/Nachtes ar, winter semester nan, English on of module componer completed module com <b>8-AC1-3-102:</b> Erläuteru o Course Inorganic Che ing approx. 45, 60 or 90 mi ) oral examination in g	state, approx. 15 min nts: Module compone ponent o8-AC1-4. ngen zum Praktikum mistry 1) nutes each) or x) oral	utes each), log (appr ent o8-AC1-2 can onl Anorganische Chem examination of one	ox. 5 to 10 y be taken hie 1 (Discus- candidate
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**Assessment in module component o8-AC1-4-102:** Sicheres Arbeiten in chemischen Laboratorien (Chemical Laboratory Safety)

- 1 ECTS credit, pass / fail
- Assessment of practical assignments
- Language of assessment: German, English

**Assessment in module component o8-AC1-1-102:** Grundlagen der Allgemeinen und Anorganischen Chemie (Fundamental Principles of General and Inorganic Chemistry)

- 10 ECTS credits, numerical grading
- a) 1 to 3 written examinations (1 written examination: approx. 90 minutes, 2 written examinations: 60 minutes or 90 minutes each, 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of 2 candidates (approx. 30 minutes)
- Language of assessment: German or English
- Additional prerequisites: admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually no more than 2 incidents of unexcused absence).

Allocation of places

Additional information

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Workload

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Teaching cycle

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

§ 42 (1) 1. Chemie "Allgemeine und Anorganische Chemie" und "Physikalische und Analytische Chemie" § 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"

#### Module appears in

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Module	Module title Abbreviation					
Inorgar	nic Che	mistry 2			08-AC2-102-m01	
Module	e coord	inator		Module offered by	red by	
lecture mistry)	r of lect	ture "Festkörperchemie" (	(Solid State Che-	Institute of Inorgani	c Chemistry	
ECTS		od of grading	Only after succ. com	pl. of module(s)		
6	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
		quips students with an a ures and properties, spec			saline compounds. It focuses ical processes.	
Intende	ed lear	ning outcomes				
priate r	nanner pic met	. They are able to system	ise them and charact	erise their structure	saline compounds in an appro- and reactivity. They can list spec- describe them in an appropriate	
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
V + V (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
		s <b>essment</b> (type, scope, la on on whether module ca			tion offered — if not every seme-	
or 90 m each (a	ninutes ipprox.		tions: approx. 60 min amination in groups (	utes each) or b) oral	ten examinations: approx. 60 examination of one candidate 30 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cvcl	6				
	<u> </u>	-				
Referre	d to in	LPO I (examination regu	lations for teaching-c	legree programmes)		
Module	e appea	urs in				
		ree (1 major) Chemistry (2	2010)			
	-	ree (1 major) FOKUS Chen				

Module					Abbreviation
Inorga	nic Che	emistry 3			08-AC3-102-m01
Module	e coord	linator		Module offered by	<u> </u>
			che Chemie" (Elemental		ic Chemistry
Organi		-			ic chemistry
ECTS	1	od of grading	Only after succ. con	npl. of module(s)	
9	nume	erical grade	08-AC1 (module con	nponent o8-AC1-4 or	nly) and o8-OC3 (module compo
			nent o8-OC3-2 only)		
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequi	isites are listed in the section or
Conten	ts				
tunity t handlin is used	o do song of o I for the	ome autonomous reso rganometallic compo e exact determination	earch and plan and cond unds, their synthesis and	uct complex synthes	dule gives students the oppor- ses. The course focuses on the ctive atmospheres. Spectroscopy
Intend	ed lear	ning outcomes			
in oral out the	and wr synth	itten form using appr esis of a substance us		logy. They are able t ques.	describe the technical principle o independently plan and carry
		· · · · · · · · · · · · · · · · · · ·			sted separately for each module
compo • c	nent. 08-AC3	-1-102: V + Ü (no infor		contact hours) and co	ourse language available)
			e, language — if other tha le can be chosen to earn		tion offered — if not every seme
low. Ur	iless s				e components as specified be- successful completion of all indi
<ul> <li>4</li> <li>a</li> <li>6</li> <li>C</li> <li>C</li> <li>r</li> <li>c</li> <li>a</li> <li>Assess</li> <li>5</li> <li>p</li> </ul>	ECTS, 1 to 3 50 or 9 candida angua Other p espect comple bsenc <b>sment i</b> 5 ECTS, ore/pos	Method of grading: n written examinations o minutes each; 3 wri ate each (approx. 20 r ge of assessment: Ge prerequisites: Admiss ive classes as specifie ted) as well as regula e). n module component Method of grading: (n	umerical grade (1 written examination: a tten examinations: appro- ninutes) or c) oral examin rman, English ion prerequisite to asses ed at the beginning of the r attendance of exercises <b>08-AC3-2-102:</b> Inorganic not) successfully complet	pprox. 90 minutes; 2 bx. 60 minutes each) nation in groups (gro ssment: successful o course (usually 70% s (usually a maximus : Chemistry 2 (lab) ted	Elemental Organic Chemistry e written examinations: approx. ) or b) oral examination of one pups of 2, approx. 30 minutes) completion of exercises in the of exercises to be successfully m of 2 incidents of unexcused utes each), log (approx. 5 to 10
•	ages)	ge of assessment: Ge			

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#### Additional information

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#### Workload

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#### Teaching cycle

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

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#### Module appears in

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Chamistme - f				Abbreviation
chemistry of	the Elements and Analyti	cal Chemistry		08-AS1-102-m01
Module coor	dinator		Module offered by	
	cture "Chemie der Hauptg y of Main-group Elements		Institute of Inorgan	ic Chemistry
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)	
11 num	erical grade			nly) and o8-OC3 (module compo
		nent o8-0C3-2 only)	)	
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Contents				
module gives lecture(s). Af	s students the opportunity	to apply in practice t tudents autonomous	the knowledge they ly conduct experime	stry and complex chemistry. The have gained through the related nts in the laboratory. These expe
Intended lea	rning outcomes			
how to use th lyse unknow		ntial tool for chemists they are able to sepa	s. Students are able arate and analyse m	
component. • o8-AN1	comprises 2 module com -2-102: P (no information -1-102: V + V (no informat	on SWS (weekly cont	act hours) and cour	
				ourse language available)
Assessment		inguage — if other tha an be chosen to earn		
	in this module comprises stated otherwise, successi	an be chosen to earn the assessments in t	a bonus) he individual modul	ation offered — if not every seme e components as specified be-
low. Unless s vidual asses: <b>Assessment</b>	in this module comprises stated otherwise, successi	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica	a bonus) he individual modul module will require Il Chemistry (lab)	ation offered — if not every seme e components as specified be-
low. Unless s vidual assess Assessment • 5 ECTS • Vortest exams • Assess	in this module comprises stated otherwise, success sments. <b>in module component o8</b> - , Method of grading: (not)	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica successfully complet (s), assessment of pro-	a bonus) he individual modul module will require Il Chemistry (lab) ted	ation offered — if not every seme e components as specified be-
low. Unless s vidual assess Assessment • 5 ECTS • Vortest exams) • Assess • Langua Assessment • 6 ECTS	in this module comprises stated otherwise, success sments. in module component o8- , Method of grading: (not) sate (pre-experiment exam ), log (5 to 10 pages) ment offered: once a year age of assessment: Germa in module component o8- , Method of grading: num	an be chosen to earn the assessments in t ful completion of the <b>AN1-2-102:</b> Analytica successfully complet is), assessment of pra- t, summer semester n, English <b>AS1-1-102:</b> Chemistry erical grade	a bonus) he individual modul module will require Il Chemistry (lab) ted actical performance, y of the elements Ch	ation offered — if not every seme e components as specified be- successful completion of all ind Nachtestate (post-experiment
low. Unless s vidual assess Assessment 5 ECTS Vortest exams Assess Langua Assessment 6 ECTS a) 1 to 3 60 or 9 candid	in this module comprises stated otherwise, success sments. in module component o8- , Method of grading: (not) sate (pre-experiment exam ), log (5 to 10 pages) ment offered: once a year age of assessment: Germa in module component o8- , Method of grading: num 3 written examinations (1 wo	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica successfully complet s), assessment of pra- s, summer semester n, English AS1-1-102: Chemistry erical grade written examination: a rexaminations: appro- utes) or c) oral examin	<u>a bonus)</u> he individual modul module will require Il Chemistry (lab) ted actical performance, y of the elements Ch pprox. 90 minutes; 2 ox. 60 minutes each	ation offered — if not every seme e components as specified be- successful completion of all indi , Nachtestate (post-experiment emistry of the elements
low. Unless s vidual assess Assessment 5 ECTS Vortest exams Assess Langua Assessment 6 ECTS a) 1 to 3 60 or 9 candid	in this module comprises stated otherwise, success sments. in module component o8- , Method of grading: (not) sate (pre-experiment exam ), log (5 to 10 pages) ment offered: once a year age of assessment: Germa in module component o8- , Method of grading: num gwritten examinations (1 w o minutes each; 3 writter ate each (approx. 20 minutes age of assessment: Germa	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica successfully complet s), assessment of pra- s, summer semester n, English AS1-1-102: Chemistry erical grade written examination: a rexaminations: appro- utes) or c) oral examin	<u>a bonus)</u> he individual modul module will require Il Chemistry (lab) ted actical performance, y of the elements Ch pprox. 90 minutes; 2 ox. 60 minutes each	ation offered — if not every seme e components as specified be- successful completion of all indi Nachtestate (post-experiment emistry of the elements written examinations: approx. ) or b) oral examination of one
low. Unless s vidual assess Assessment • 5 ECTS • Vortest exams) • Assess • Langua Assessment • 6 ECTS • a) 1 to 3 60 or 9 candid • Langua	in this module comprises stated otherwise, success sments. in module component o8- , Method of grading: (not) sate (pre-experiment exam ), log (5 to 10 pages) ment offered: once a year age of assessment: Germa in module component o8- , Method of grading: num gwritten examinations (1 w o minutes each; 3 writter ate each (approx. 20 minutes age of assessment: Germa	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica successfully complet s), assessment of pra- s, summer semester n, English AS1-1-102: Chemistry erical grade written examination: a rexaminations: appro- utes) or c) oral examin	<u>a bonus)</u> he individual modul module will require Il Chemistry (lab) ted actical performance, y of the elements Ch pprox. 90 minutes; 2 ox. 60 minutes each	ation offered — if not every seme e components as specified be- successful completion of all ind Nachtestate (post-experiment emistry of the elements written examinations: approx. ) or b) oral examination of one
low. Unless s vidual assess Assessment • 5 ECTS • Vortest exams) • Assess • Langua Assessment • 6 ECTS • a) 1 to 3 60 or 9 candid • Langua	in this module comprises stated otherwise, success sments. in module component o8- , Method of grading: (not) sate (pre-experiment exam ), log (5 to 10 pages) ment offered: once a year age of assessment: Germa in module component o8- , Method of grading: num g written examinations (1 w to minutes each; 3 writter ate each (approx. 20 minutes age of assessment: Germa places	an be chosen to earn the assessments in t ful completion of the AN1-2-102: Analytica successfully complet s), assessment of pra- s, summer semester n, English AS1-1-102: Chemistry erical grade written examination: a rexaminations: appro- utes) or c) oral examin	<u>a bonus)</u> he individual modul module will require Il Chemistry (lab) ted actical performance, y of the elements Ch pprox. 90 minutes; 2 ox. 60 minutes each	ation offered — if not every seme e components as specified be- successful completion of all ind Nachtestate (post-experiment emistry of the elements written examinations: approx. ) or b) oral examination of one

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#### Workload

Teaching cycle

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

§ 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"

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Module	e title				Abbreviation
Bachel	or Thes	is			08-BA-102-m01
Module	e coord	inator		Module offered by	
head of	f the re	search group offering the	e module	Faculty of Chemistr	y and Pharmacy
ECTS		od of grading	Only after succ. con		· · ·
10	nume	rical grade	Where applicable, s	pecific modules/mo	dule components as specified by
			supervisor (cf. Secti	on 16 Subsection 2 I	-SB (subject-specific provisions)).
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
		ives students the opport scientific methods they			problem within a given time frame
Intende	ed learı	ning outcomes			
		able to conduct research to present the results of t			the principles of good scientific
Course	<b>s</b> (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)
no coui	rses as	signed			
		e <b>ssment</b> (type, scope, la on on whether module c			tion offered — if not every seme-
		(approx. 40 pages) ssessment: German, Eng	lish		
Allocat	ion of p	olaces			
	<b>·</b>				
Additio	nal inf	ormation			
Additio	nal info	ormation on module dura	ation: 8 weeks.		
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-	degree programmes)	
Module	e appea	irs in			
Bachel	or' deg	ree (1 major) Chemistry (	2010)		

Module	e title				Abbreviation
Bioche	mistry				08-BC-092-m01
Module	o coord	inator		Module offered by	
		Chair of Biochemistry		Chair of Biochemist	tr.
ECTS		od of grading	Only after succ. com		
6	<u> </u>	rical grade			
Duratio	L	Module level	Other prerequisites		
2 seme		undergraduate			successful completion of exerci-
			ses in the respective	e classes as specifie	d at the beginning of the course
			(usually 70% of exe	rcises to be success	fully completed) as well as regu-
			lar attendance of ex	ercises (usually a ma	aximum of 2 incidents of unexcu-
			sed absence).		
Conten	ts				
Compri mistry.	ising le	ctures and exercises, this	s module acquaints s	tudents with the fun	damental principles of bioche-
Intend	ed learı	ning outcomes			
		e become familiar with th al processes in cellular s		ples of biochemistry	. They are able to describe the
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	· if other than Germa	in)
V + Ü +	V + Ü (	no information on SWS (	weekly contact hours	) and course languag	ge available)
Metho	d of ass		nguage — if other tha	an German, examina	tion offered — if not every seme-
or 90 m	ninutes		tions: approx. 60 min	utes each) or b) oral	tten examinations: approx. 60 l examination of one candidate . 30 minutes)
Allocat					
Additio	onal info	ormation			
Worklo	ad				
Teachi	ng cycl	e			
	_ ,				
Referre	ed to in	LPO I (examination regu	lations for teaching-o	legree programmes)	
Module	e appea	irs in			
Bachel Bachel Bachel	or' deg or' deg or' deg	ree (1 major) Chemistry (2 ree (1 major) Chemistry (2 ree (1 major) Nanostructu ree (1 major) Nanostructu	2009) Ire Technology (2010) Ire Technology (2012)		
	-	ree (1 major) FOKUS Cher	•		
waster	s aegr	ee (1 major) Chemistry (2	010)		

Module	e title				Abbreviation
Bioche	mistry	Lab			08-BCP-092-m01
Module	e coord	inator		Module offered by	
holder	of the C	Chair of Biochemistry		Chair of Biochemist	try
ECTS		od of grading	Only after succ. com	pl. of module(s)	
5		successfully completed	o8-BC		
Duratio		Module level	Other prerequisites		
1 seme	I	undergraduate			
Conten Practica experin	al exerc	ises give students the op	pportunity to learn the	e fundamental princ	iples of conducting biochemical
Intende	ed learr	ning outcomes			
Studen	ts have	e become proficient in es	sential methods in bi	ochemistry.	
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
P (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	2)
		e <b>ssment</b> (type, scope, la on on whether module ca			tion offered — if not every seme-
(log, ap	prox. 5	riment examination talks to 10 pages) ffered: once a year, sumr		htestate, approx. 15	minutes each), practical work
Allocat	ion of p	olaces			
allocate wing qu de, plac cant; ai	ed in a uotas: ( ces will mong a	standardised procedure Quota 1 (80% of places): be allocated by lot. Quo	among all applicants grade achieved in mo ta 2 (20% of places): number of subject se	irrespective of their odule o8-BC; among number of subject s mesters, places will	available places, places will be subjects according to the follo- applicants with the same gra- semesters of the respective appli- be allocated by lot. A waiting list
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
Module	e appea	rs in			
Bachel	or' deg	ree (1 major) Chemistry (2	2010)		
	-	ree (1 major) Chemistry (2	•		
	-	ee (1 major) Chemistry (2	-		
master	s uegre	ee (1 major) Chemistry (2	010)		

Module	e title				Abbreviation
Literat	ure res	earch methods			08-LRAC-092-m01
Modul	e coord	inator		Module offered by	
lecture Organi		ture "Elementorganische	Chemie" (Elemental	Institute of Inorgan	ic Chemistry
ECTS	-	od of grading	Only after succ. con	npl. of module(s)	
1		successfully completed			
Duratio	on .	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	Its				
Literati	ure sea	rch for planning experime	ents in the field of inc	organic chemistry.	
		ning outcomes		-	
Studer	its knov	w how to conduct literatu	re searches for plann	ing experiments in t	he field of inorganic chemistry.
		, number of weekly conta			
		tion on SWS (weekly cont			•
		sessment (type, scope, la ion on whether module c			tion offered — if not every seme-
2 litera	ture se	arches about given prepa	arations		
Allocat	ion of	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	lations for teaching-	legree programmes)	
				,	
Module	e appea	ars in			
		ree (1 major) Chemistry (2	2010)		
Bachel	or' deg	ree (1 major) Chemistry (2	2009)		

Module	e title				Abbreviation
Literatu	ure rese	earch methods			08-LROC-092-m01
Module	coord	inator		Module offered by	
lecture	r of lect	ure "Organische Chemie	4"	Institute of Organic	Chemistry
ECTS		od of grading	Only after succ. com		·
1	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Literatu	ire seai	rch for planning experime	ents in the field of org	ganic chemistry.	
Intende	ed learr	ning outcomes			
Studen	ts knov	v how to conduct literatu	re searches for plann	ing experiments in t	he field of organic chemistry.
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language –	· if other than Germa	n)
Ü (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		e <b>ssment</b> (type, scope, la on on whether module ca			tion offered — if not every seme-
		arch about given prepara		,	
Allocat	ion of p	olaces			
Additio	nal info	ormation			
			,		
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)	
Module	e appea	in in			
	-	ree (1 major) Chemistry (2			
Bachel	or deg	ree (1 major) Chemistry (2	2009)		

Organic Chemistry 1       08-0C1-092-m01         Module coordinator       Module offered by         holder of the Professorship of Organic Chemistry       Institute of Organic Chemistry         ECTS       Method of grading	
Module coordinator     Module offered by       holder of the Professorship of Organic Chemistry     Institute of Organic Chemistry	
holder of the Professorship of Organic Chemistry Institute of Organic Chemistry	
ECTS   Method of grading   Only after succ. compl. of module(s)	
5 numerical grade	
Duration         Module level         Other prerequisites	<i>c</i>
1 semester       undergraduate       Admission prerequisite to assessment: successful completion of ses in the respective classes as specified at the beginning of th (usually 70% of exercises to be successfully completed) as well lar attendance of exercises (usually a maximum of 2 incidents of sed absence).	ne course Il as regu-
Contents	
This module provides students with an overview of the fundamental principles of organic chemistry. It of the bonding situation of carbon and introduces students to the nomenclature of simple and moderately organic compounds. The module also discusses the fundamental principles of stereochemistry, substi- dition and elimination reactions as well as synthesis planning.	ly complex
Intended learning outcomes	
Students know important categories of substances in organic chemistry. They are able to use different of nomenclature to determine simple substance names. Students are able to analyse the stereochemis lecules. They are able to describe and formulate some of the most important reactions in organic chem that purpose, they can analyse and categorise the characteristic reaction conditions and can use them syntheses.	stry of mo- nistry. For
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)	
V + Ü (no information on SWS (weekly contact hours) and course language available)	
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not ever ster, information on whether module can be chosen to earn a bonus)	ery seme-
a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: 60 c nutes each; 3 written examinations: 60 minutes each) or b) oral examination of one candidate each (ap minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)	
Allocation of places	
Additional information	
Workload	
Teaching cycle	
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)	
§ 62 (1) 2. Chemie "Organische und Bioorganische Chemie"	
Module appears in	
Bachelor' degree (1 major) Biochemistry (2011) Bachelor' degree (1 major) Biochemistry (2013) Bachelor' degree (1 major) Biochemistry (2009) Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) Chemistry (2009) Bachelor' degree (1 major) Mathematics (2012)	
Bachelor's with 1 major Chemistry (2010)       JMU Würzburg • generated 26-Aug-2024 • exam.       p         reg. data record Bachelor (180 ECTS) Chemie - 2010       p	page 18 / 44

Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011) First state examination for the teaching degree Gymnasium Chemistry (2009)

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 19 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module title				Abbreviation	
Organic Chem	istry 2			08-0C2-102-m01	
Module coord	inator		Module offered by	1	
	Chair of Physically Orga	anic Chemistry	Institute of Organic	Chemistry	
	od of grading	Only after succ. cor	· · · ·		
	rical grade	08-0C1			
Duration	Module level	Other prerequisites	5		
1 semester	undergraduate		isite to assessment:	successful completi	on of exerci-
		ses in the respectiv	e classes as specifie	d at the beginning o	f the course
		(usually 70% of exe	ercises to be success	fully completed) as v	well as regu-
		lar attendance of ex	xercises (usually a m	aximum of 2 inciden	ts of unexcu-
		sed absence).			
Contents					
the example o on reactions to well as rearran	ntroduces students to t of carbonyl compounds o complex reaction me ngement. In addition, it trometry and NMR spe	, it extends the studen chanisms. The course a t introduces students to	ts' knowledge of sub also focuses on oxid	ostitution, eliminatio ation and reduction	n and additi- reactions as
Intended lear	ning outcomes				
they can plan unknown reac to draw conclu	Inds. They are able to c and formulate multi-st tions. Students are abl usions regarding the m , number of weekly con	age syntheses with cor le to describe importar olecular structure.	mplex reaction mech nt spectroscopic met	anisms and can tran hods, to evaluate a s	sfer them to
	nformation on SWS (we				
	sessment (type, scope, ion on whether module			ition offered — if not	every seme-
or 90 minutes each (approx.	n examinations (1 writt each; 3 written examir 20 minutes) or c) oral ssessment: German, E	nations: approx. 60 min examination in groups	nutes each) or b) ora	l examination of one	
Allocation of p					
Additional inf	ormation				
Workload					
Teaching cycl	9				
reaching cycl	C				
		aulations for to a him			
Referred to IN	LPOI (examination re	Bulations for leaching-	uegree programmes)		
	•				
Module appea					
Bachelor' deg Bachelor' deg	ree (1 major) Biochemis ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Mathema	stry (2013) / (2010)			
Bachelor's with 1 ma	jor Chemistry (2010)	IMIT Würzbi	urg • generated 26-Aug-2024		

Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg ● generated 26-Aug-2024 ● exam.	page 21 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

-	e title				Abbreviation	
Modula	ic Chem	iistry 3			08-0C3-102-m01	
woante	e coord	inator		Module offered by		
holder	of the l	Professorship of Organi	c Chemistry	Institute of Organic	Chemistry	
ECTS	Metho	od of grading	Only after succ. con			
15	nume	rical grade		(module component		
			08-AN1 (module con 08-OC1-GHR	mponent 08-AN1-2 of	nly), 08-0C1 may be	replaced by
Duratio	on	Module level	Other prerequisites	;		
1 seme	ester	undergraduate	By way of exception assessments.	n, additional prerequi	sites are listed in th	e section on
Conten	nts					
tallic cł ge they experin write la stances	hemistı y have ន្ ments i ab repo	cusses the fundamenta ry and retrosynthesis. Th gained through the relat n the laboratory. In add rts to demonstrate their le experimental unit op oducts.	ne module gives stude ed lecture(s). After a s ition to those experim knowledge. The cours	ents the opportunity t afety briefing, the st ents, students will be se focuses on the saf	o apply in practice t udents autonomous e expected to take of e handling of hazard	he knowled- ly conduct ral tests and dous sub-
	· · ·	ning outcomes				
ture wit Course This mo compo	ith prac es (type odule c onent.	identify possible error s tical experiments in the , number of weekly con omprises 2 module con -1-102: V + Ü (no informa	laboratory. act hours, language – nponents. Information	- if other than Germa on courses will be li	n) sted separately for e	
• 0	08-0C3			contact nours) and c		
				tact hours) and cours	se language availabl	lable) le)
51CI, III		<b>Sessment</b> (type, scope, ion on whether module	language — if other th	an German, examina	se language availabl	lable) le)
Assess	nless st	sessment (type, scope, ion on whether module n this module comprise ated otherwise, succes	language — if other th can be chosen to earn s the assessments in t	an German, examina a bonus) :he individual modul	se language availabl tion offered — if not e components as sp	lable) le) every seme ecified be-
Assess low. Ur vidual a Assess 6 a 6 a 6 c c L C C r c c a	nless st assess sment in 5 ECTS, a) 1 to 3 50 or 90 candida anguag Other p respecti complet absence	<b>Sessment</b> (type, scope, ion on whether module in this module comprises ated otherwise, success ments. <b>In module component of</b> Method of grading: num written examinations (1 o minutes each; 3 writte the each (approx. 20 min ge of assessment: Germ rerequisites: Admission ve classes as specified ted) as well as regular a e).	language — if other th can be chosen to earn s the assessments in t sful completion of the <b>B-OC3-1-102:</b> Organic ( nerical grade written examination: a n examinations: appr nutes) or c) oral exami an, English prerequisite to asses at the beginning of the ttendance of exercise	an German, examina a bonus) the individual module module will require s Chemistry 3 Organic upprox. 90 minutes; 2 ox. 60 minutes each) nation in groups (gro ssment: successful o course (usually 70% s (usually a maximut	se language availabl tion offered — if not e components as spo successful completio Chemistry 3 written examination or b) oral examinat ups of 2, approx. 30 completion of exerci of exercises to be su	lable) le) every seme ecified be- on of all indi es: approx. ion of one minutes) ses in the accessfully
Assess low. Ur vidual a Assess 6 a 6 c c L C C r c c a <b>Assess</b> 9 9 p	nless st assess sment in 5 ECTS, a) 1 to 3 50 or 90 candida anguag Other p respecti complet absence sment in 9 ECTS,	sessment (type, scope, ion on whether module in this module comprises ated otherwise, success ments. In module component of Method of grading: num written examinations (1 o minutes each; 3 writte te each (approx. 20 min ge of assessment: Germ rerequisites: Admission ve classes as specified ted) as well as regular a	language — if other th can be chosen to earn s the assessments in t sful completion of the <b>B-OC3-1-102:</b> Organic ( nerical grade written examination: a n examinations: appr nutes) or c) oral exami an, English prerequisite to asses at the beginning of the ttendance of exercise <b>B-OC3-2-102:</b> Organic t) successfully comple	an German, examina a bonus) the individual module module will require s Chemistry 3 Organic opprox. 90 minutes; 2 ox. 60 minutes each nation in groups (gro ssment: successful o course (usually 70% s (usually a maximu Chemistry - lab 1 ted	se language availabl tion offered — if not e components as spe- successful completion Chemistry 3 written examination 0 or b) oral examinat ups of 2, approx. 30 completion of exerci of exercises to be su m of 2 incidents of u	lable) every seme ecified be- on of all indi ns: approx. ion of one minutes) ses in the iccessfully inexcused

- Assessment offered: once a year, summer semester
- Language of assessment: German, English

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#### Additional information

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Workload

#### Teaching cycle

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

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#### Module appears in

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 23 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module title			Abbreviation			
Organ	ic Chem	histry 4			08-0C4-102-m01	
Module coordinator				Module offered by		
holder of the Chair of Organic Chemistry II Institute of Organic Chemistry			Chemistry			
ECTS		od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Durati		Module level	Other prerequisites		• •. • • • • • •	
1 seme	ester	undergraduate	By way of exception assessments.	, additional prerequ	isites are listed in th	e section on
Contents						
ting gr ces, us	oup tec sing cor	ocuses on heterocyclic hniques. Students enh nplicated working and e product analyses.	ance their experimenta	al skills by working w	ith special hazardou	us substan-
Intend	ed lear	ning outcomes				
able to protein roids. form c	o charac ns. In ac Student	able to name important sterise and categorise of ddition, they are able to ts know how to safely a syntheses, purification ents.	lyes. Students are able describe the structure nd responsibly handle	to describe the stru of the DNA, carbohy special hazardous s	cture and selective s ydrates, fats, terpen substances. They are	synthesis of es and ste- able to per-
-	_	, number of weekly con	itact hours, language –	- if other than Germa	ın)	
compo • • •	onent. 08-0C4 08-0C4 08-0C4	omprises 2 module con -1-102: V + Ü (no inform -2-102: P (no informatio sessment (type, scope, ion on whether module	ation on SWS (weekly on on SWS (weekly con language — if other th	contact hours) and c tact hours) and cour an German, examina	ourse language avai se language availab	ilable) le)
low. U		n this module comprise ated otherwise, succes ments.				
<ul> <li>Assessment in module component o8-OC4-1-102: Organic Chemistry 4 Organic Chemistry 4</li> <li>5 ECTS, Method of grading: numerical grade</li> <li>a) 1 to 3 written examinations (1 written examination: approx. 90 minutes; 2 written examinations: approx. 60 or 90 minutes each; 3 written examinations: approx. 60 minutes each) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, approx. 30 minutes)</li> <li>Language of assessment: German or English</li> <li>Only after successful completion of module components: 08-OC1 or 08-OC1-GHR</li> <li>Other prerequisites: Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).</li> </ul>						
		n module component o	8-0C4-2-102: Organic	Chemistry - advance	d laboratory course	for students
of che	mistry 5 ECTS, pore/pos pages) Assessr Languag Only aft p8-OC3	Method of grading: (no it-experiment examinat nent offered: once a ye ge of assessment: Gern er successful completio P	ot) successfully comple ion talks (Vor-/Nachtes ar, winter semester nan, English on of module compone	ted state, approx. 15 min nts: 08-OC3 (module	utes each), log (appl e component o8-OC3	rox. 5 to 10 3-2 only) or
Bachelor's	s with 1 ma	jor Chemistry (2010)		urg • generated 26-Aug-2024 ord Bachelor (180 ECTS) Chem		page 24 / 44

#### Additional information

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#### Workload

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#### Teaching cycle

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

§ 62 (1) 2. Chemie "Organische und Bioorganische Chemie"

#### Module appears in

Bachelor' degree (1 major) Biochemistry (2011) Bachelor' degree (1 major) Biochemistry (2013) Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) FOKUS Chemistry (2011)

 Bachelor's with 1 major Chemistry (2010)
 JMU Würzburg • generated 26-Aug-2024 • exam.
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 reg. data record Bachelor (180 ECTS) Chemie - 2010
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Modul	e title				Abbreviation
Advan	ced che	mical practical course			08-0P-102-m01
Module coordinator				Module offered by	<u> </u>
head o	f the re	search group offering the	module	Faculty of Chemistr	y and Pharmacy
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	· · ·
5	(not)	successfully completed			
Durati	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conter	nts				
		ives students the opport ne in question.	unity to explore a res	earch topic and app	ly the methods commonly used
Intend	ed lear	ning outcomes			
	nts are a esentat		research topic and p	resent the results of	their work in a written report or
Course	e <b>s</b> (type	, number of weekly conta	ct hours, language –	- if other than Germa	ın)
P (no i	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, la ion on whether module ca			tion offered — if not every seme-
		5 minutes) or written rep ssessment: German, Eng		pages)	
	tion of <sub>l</sub>				
 Additio	onal inf	ormation			
Worklo	ad				
 Taashi		-			
	ng cycl	e			
Referre	ed to in	LPO I (examination regu	lations for teaching-o	degree programmes)	
Modul	e appea	ars in			
Bachel	or' deg	ree (1 major) Chemistry (2	2010)		

Module title				Abbreviation	
Physical Ch	Physical Chemistry 1			08-PC1-092-m01	
Module cod	ordinator		Module offered by		
	ecture "Grundlagen der (	Quantenmechanik and		l and Theoretical Ch	emistrv
	pie" (Principles of Quant		,,		)
ECTS         Method of grading         Only after succ. compl. of module(s)					
	nerical grade				
Duration	Module level	Other prerequisites			
1 semester	undergraduate	ses in the respective (usually 70% of exe	site to assessment: e classes as specifie rcises to be success ercises (usually a ma	d at the beginning c fully completed) as	of the course well as regu-
Contents		seu absence).			
the basis of the module UV-VIS spec	e introduces students to f the following models: p focuses on vibrational s ctroscopy. In addition, th erential equations, Fourie	article in a box, harmon pectroscopy, angular m e module discusses line	ic oscillator and rigio omentum quantisati ear operators, eigenv	d rotor. As regards s on, microwave spec value problems, ma	pectroscopy, troscopy and trix represen-
Intended le	arning outcomes				
	re able to explain key mo different spectroscopic r echanics.				
Courses (ty	pe, number of weekly co	ntact hours, language –	- if other than Germa	ın)	
V + Ü + V +	Ü (no information on SW	S (weekly contact hours	) and course langua	ge available)	
	assessment (type, scope ation on whether module			tion offered — if not	every seme-
nutes each	tten examinations (1 writ ; 3 written examinations: r c) oral examination in gr	60 minutes each) or b)	oral examination of		
Allocation	of places				
Additional	information				
Workload					
Teaching cy	/cle				
Referred to	in LPO I (examination re	egulations for teaching-o	degree programmes)		
Module app	bears in				
	egree (1 major) Biochemi	istry (2011)			
Bachelor' d Bachelor' d	egree (1 major) Biochem egree (1 major) Biochem egree (1 major) Chemistr	istry (2013) istry (2009)			

Bachelor' degree (1 major) Chemistry (2009) Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 28 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module	e title				Abbreviation
		nistry 2: Thermodynami	cs, Kinetics, Electroch	nemistry	08-PC2-092-m01
Module	Module coordinator			Module offered by	
lecturer of lecture "Thermodynamik, Kinetik, Elektroche- mie"			inetik, Elektroche-	Institute of Physica	ll and Theoretical Chemistry
ECTS	Meth	od of grading	Only after succ. con	mpl. of module(s)	
18	nume	rical grade			
Duratio		Module level	Other prerequisites		
1 seme	ster	undergraduate	By way of exception assessments.	, additional prerequ	isites are listed in the section on
Conten	Its				
tunity t the stu will be	o apply dents a expect	y in practice the knowled	ge they have gained t xperiments in the lab	hrough the related l oratory. In addition t	dule gives students the oppor- lecture(s). After a safety briefing, to those experiments, students owledge.
solutio of cher chemis rement	ns, gas nical re stry anc ts.	ses, mixed phases and el eactions. They are able to I spectroscopy with prac	lectrochemical reaction connect the theoreti tical laboratory experi	ons. Students are ab cal principles of the iments. They are abl	ribe thermodynamic aspects of le to interpret the kinetic aspects rmodynamics, kinetics, electro- e to analyse the resulting measu-
Course	<b>s</b> (type	, number of weekly conta	act hours, language –	- if other than Germa	an)
compo • c	nent. 08-PC2-	2-092: P (no information	ı on SWS (weekly con	tact hours) and cour	isted separately for each module rse language available) course language available)
Metho	d of as		anguage — if other th	an German, examina	ation offered — if not every seme-
	nless st	ated otherwise, success			e components as specified be- successful completion of all indi-
<ul> <li>Assessment in module component o8-PC2-2-092: Physical Chemistry (lab)</li> <li>9 ECTS, Method of grading: (not) successfully completed</li> <li>Vortestate (pre-experiment exams, approx. 15 minutes each), assessment of practical performance, Nachtestate (post-experiment exams, approx. 15 minutes each)</li> <li>Assessment offered: once a year, winter semester</li> </ul>					
<ul> <li>Only after successful completion of module components: o8-PC1-1 or o8-PC2-1</li> <li>Assessment in module component o8-PC2-1-o92: Thermodynamics, Kinetics, Electrochemistry Thermodynamics, Kinetics, Electrochemistry</li> <li>9 ECTS, Method of grading: numerical grade</li> </ul>					
• a 9 (	a) 1 to 3 90 minu approx	written examinations (1 ites each; 3 written exam . 20 minutes) or c) oral e	written examination: inations: 60 minutes xamination in groups	each) or b) oral exan (groups of 2, approx	
r C	especti	ive classes as specified a ted) as well as regular at	t the beginning of the	course (usually 70%	completion of exercises in the of exercises to be successfully Im of 2 incidents of unexcused

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 29 / 44
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#### Additional information

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#### Workload

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#### Teaching cycle

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

§ 62 (1) 1. Chemie "Allgemeine und Anorganische Chemie"; "Physikalische und Analytische Chemie"

#### Module appears in

Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) Chemistry (2009) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Bac	chelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 30 / 44
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Physica	e title				Abbreviation	
•	al and T	heoretical Chemistry 3	: Symmetry and Quant	um Chemistry	08-PC3-092-m01	
Modulo	coordi	instor		Module offered by		
Module coordinator			•	l an d The anatical Ch		
lecturer of lecture "Quantenchemie"				l and Theoretical Ch	emistry	
1	· · · · · · · · · · · · · · · · · · ·	d of grading	Only after succ. com	pl. of module(s)		
6	r r	ical grade				
Duratio		Module level	Other prerequisites			
1 semes	ster	undergraduate	Admission prerequis			
			(usually 70% of exer	•	• •	
			lar attendance of exe			-
			sed absence).	ercises (usually a m		
Content			seu absence).			
				1		
		iscusses the fundamen	tai principles of quanti	um cnemistry and sy	mmetry in chemistr	у.
		ing outcomes				
		become familiar with t able to apply the know		•	emistry and symmetr	ry in che-
Courses	<b>s</b> (type,	number of weekly cont	act hours, language —	if other than Germa	n)	
V + Ü +	V + Ü (I	no information on SWS	(weekly contact hours)	and course langua	ge available)	
		<b>essment</b> (type, scope, on on whether module			tion offered — if not	every seme-
each; 3	writter c) oral e	n examinations (1 written examinations: 60 min examination in groups ( <b>laces</b>	utes each) or b) oral ex	amination of one ca		
Additio	nal info	ormation				
Workloa						
WUIKIU						
	ad					
 Teachin		3				
	ng cycle					
	ng cycle	e LPOI (examination reg	ulations for teaching-d	legree programmes)		
	ng cycle		ulations for teaching-d	legree programmes)		
	ng cycle ed to in	LPOI (examination reg	ulations for teaching-d	legree programmes)		
 Referre  Module	ng cycle ed to in e appea	LPOI (examination reg		legree programmes)		
 Referree  Module Bachelo	ng cycle ed to in e appea or' degr	LPO I (examination reg	try (2013)	legree programmes)		
 Referred  Bachelo Bachelo Bachelo	ng cycle d to in e appea or' degr or' degr or' degr or' degr	<b>LPO I</b> (examination reg <b>rs in</b> ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry	try (2013) (2010) (2009)	legree programmes)		
 Referree  Bachelo Bachelo Bachelo Bachelo	ng cyclo ed to in e appea or' degr or' degr or' degr or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati	try (2013) (2010) (2009) ics (2012)	legree programmes)		
 Referree  Bachelo Bachelo Bachelo Bachelo Bachelo	ed to in ed to in e appea or' degr or' degr or' degr or' degr or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati	try (2013) (2010) (2009) ics (2012) ics (2013)			
 Referred  Bachelo Bachelo Bachelo Bachelo Bachelo	ng cycle d to in e appea or' degr or' degr or' degr or' degr or' degr or' degr or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (200	09)		
 Referree  Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	ng cycle ed to in e appea or' degr or' degr or' degr or' degr or' degr or' degr or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (200 onal Mathematics (201	09) (2)		
 Referree  Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	ed to in ed to in e appea or' degr or' degr or' degr or' degr or' degr or' degr or' degr or' degr or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (201 onal Mathematics (201 onal Mathematics (201	09) (2)		
 Referred  Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo	ed to in ed to in e appea or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (201 onal Mathematics (201 onal Mathematics (201 emistry (2011)	09) 12) 13)		
 Referred  Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo First sta	ng cycle d to in e appea or' degr or' degr	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati ree (1 major) FOKUS Che mination for the teachir	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (201 onal Mathematics (201 onal Mathematics (201 emistry (2011) ng degree Grundschule	09) 12) 13) Chemistry (2009)		
 Referree Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo Bachelo First sta First sta	ed to in e appea or' degr or' degr ate exar	LPO I (examination reg rs in ree (1 major) Biochemis ree (1 major) Chemistry ree (1 major) Chemistry ree (1 major) Mathemati ree (1 major) Mathemati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati ree (1 major) Computati	try (2013) (2010) (2009) ics (2012) ics (2013) onal Mathematics (201 onal Mathematics (201 onal Mathematics (201 emistry (2011) ng degree Grundschule ng degree Hauptschule ng degree Realschule C	09) 12) 13) Chemistry (2009) Chemistry (2009)		



First state examination for the teaching degree Gymnasium Chemistry (2009) First state examination for the teaching degree Mittelschule Chemistry (2013)

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	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module					Abbreviation
Physic	al Cher	nistry 4: Statistical T	hermodynamics		08-PC4-092-m01
Module coordinator		Module offered by			
lecturer of lecture "Statistische Thermodynamik"			sical and Theoretical Chemistry		
			compl. of module(s)		
3	1	rical grade			
Duratio		Module level	Other prerequisit	es	
Datation       Integrate tever       Other preequisites         1 semester       undergraduate       Admission prerequisite to assessment: successful completi         ses in the respective classes as specified at the beginning of (usually 70% of exercises to be successfully completed) as a lar attendance of exercises (usually a maximum of 2 incider sed absence).		ified at the beginning of the course essfully completed) as well as regu-			
Conten	nts				
This m	odule d	liscusses the fundam	ental principles of sta	tistical thermodyna	mics.
Intend	ed lear	ning outcomes			
		e become familiar wit wledge they have dev	-	nciples of statistica	l thermodynamics and are able to
Course	<b>s</b> (type	, number of weekly co	ontact hours, language	e — if other than Ge	rman)
V + Ü (ı	no infoi	rmation on SWS (wee	kly contact hours) and	l course language a	vailable)
			e, language — if other le can be chosen to ea		ination offered — if not every seme-
or 90 n	ninutes	each; 3 written exam		ninutes each) or b)	written examinations: approx. 60 oral examination of one candidate rox. 30 minutes)
Allocat	tion of <sub>l</sub>	olaces			
Additio	onal inf	ormation			
Worklo	ad				
	_				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination r	regulations for teachin	g-degree programm	ies)
	e appea				
		ree (1 major) Chemist			
	-	ree (1 major) Chemist			
		ree (1 major) FOKUS (		ula Chomistry (acar	2)
			hing degree Grundsch hing degree Hauptsch		
			hing degree Realschul		7)
			hing degree Gymnasiu		)
	ate exa				)

Module title					Abbreviation		
Progra	Programming course for Chemistry Major				08-PKC-102-m01		
Module coordinator				Module offered by			
lecture	r of lec	ture "Programmierkurs fü	r Chemiker"	Institute of Physica	l and Theoretical Chemistry		
ECTS		od of grading	Only after succ. com	pl. of module(s)			
5	(not) s	successfully completed					
Duratio	on	Module level	Other prerequisites				
1 seme	ster	undergraduate	Admission prerequisite to assessment: successful completion of exercises in the respective classes as specified at the beginning of the course (usually 70% of exercises to be successfully completed) as well as regular attendance of exercises (usually a maximum of 2 incidents of unexcused absence).				
Conten	ts						
		provides an introduction t d to problems in chemist		of a programming lar	nguage and discusses how they		
Intende	ed lear	ning outcomes					
Studen chemis		able to describe the fund	amentals of the prog	ramming language a	nd to apply them to problems in		
Course	<b>s</b> (type	, number of weekly conta	ct hours, language –	· if other than Germa	n)		
S + Ü (r	no infoi	mation on SWS (weekly	contact hours) and co	ourse language avail	able)		
		sessment (type, scope, la ion on whether module ca			tion offered — if not every seme-		
		nination: completion of p ssessment: German, Eng		s and oral descriptic	on of algorithms used		
Allocat	ion of <b>j</b>	olaces					
Additio	onal inf	ormation					
Worklo	ad						
Teachi	ng cycl	e					
Referre	ed to in	LPOI (examination regu	lations for teaching-o	legree programmes)			
Module	e appea	ars in					
Bachel	<b>Module appears in</b> Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) FOKUS Chemistry (2011) Bachelor' degree (1 major) Functional Materials (2012)						

Module	e title				Abbreviation
Applie	d Spec	troscopy 3			08-PS3-092-m01
Module coordinator				Module offered by	
lecture	r of lec	ture "Praktische Spektros	skopie 3"	Institute of Physica	l and Theoretical Chemistry
ECTS		od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
practic	e and t		aphs. We will record		e of spectroscopic methods in fluorescence and vibration spec-
Intend	ed lear	ning outcomes			
		able to work with differen discussions.	t spectrometers and	to interpret the resu	lting spectra. They are able to
Course	<b>s</b> (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)
V (no ir	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	2)
ster, in 1 writte ten exa	format en exan aminati	ion on whether module can nination (approx. 90 minu	an be chosen to earn utes) or 2 written exa each) or oral examin	a bonus) minations (approx. 6 ation of one candida	tion offered — if not every seme- to or 90 minutes each) or 3 writ- te each (approx. 20 minutes) or
Allocat				,	
		<u>.</u>			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cvcl	e	·		
Referre	d to in	LPOI (examination regu	lations for teaching-	degree programmes)	
Module	e appea	ars in			
		ree (1 major) Chemistry (2	2010)		
	-	ree (1 major) Chemistry (2			
	-	ee (1 major) Technology o			
	-	ee (1 major) Technology o		ls (2009)	
Master	's degr	ee (1 major) Functional M	aterials (2012)		

Module				-	Abbreviation
Theoretical Models in Chemistry					08-TC-092-m01
Modul	e coord	inator		Module offered by	<u> </u>
		ture "Quantenchemie"	ı		l and Theoretical Chemistry
ECTS	1	od of grading	Only after succ. con	· · · · ·	
3		rical grade			
<u>)</u> Duratio		Module level			
		undergraduate	Other prerequisites		successful completion of eversi
1 seme	ster	undergraduate			successful completion of exerci- d at the beginning of the course
					fully completed) as well as regu-
				ercises (usually a m	aximum of 2 incidents of unexcu
			sed absence).		
Conten	nts				
spin, tł	he Paul	i principle, Slater dete		ock method, correlat	antum chemistry. It focuses on tion energy, configuration interac dels of H2+.
Intend	ed lear	ning outcomes			
Studer	nts are a	able to describe excite	ed states of molecules w	ith the help of key c	oncepts and models.
			ntact hours, language –		•
			kly contact hours) and co		
					ation offered — if not every seme
ster, in	formati	on on whether modul	e can be chosen to earn	a bonus)	
or 90 n	ninutes	each; 3 written exam		nutes each) or b) ora	tten examinations: approx. 60 l examination of one candidate
	tion of p			(5100p3 01 2, 0pp10)	
Additic		ormation			
Auditio					
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination r	egulations for teaching-	degree programmes)	
Module	e appea	urs in			
Bachel	or' deg	ree (1 major) Chemist	ry (2010)		
Bachelor' degree (1 major) Chemistry (2009)					
	-	ree (1 major) Mathem			
	-	ree (1 major) Mathem			
	-		ational Mathematics (20	09)	
	or' deg				
Bachel		ree (1 major) Computa	ational Mathematics (20	12)	
	-		ational Mathematics (20 ational Mathematics (20		

Modul	e title				Abbreviation
Advanced laboratory course					08-VP-102-m01
Module	Module coordinator			Module offered by	
		search group offering the	module	Faculty of Chemistr	v and Pharmacy
ECTS	-	od of grading	Only after succ. con	· ·	y and i nannacy
5		successfully completed		•	dule components as specified by
			supervisor (cf. Secti	on 12 Subsection 4 I	FSB (subject-specific provisions)).
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate			
Conten	nts				
		ives students the opport ne in question.	unity to explore a res	earch topic and app	ly the methods commonly used
Intend	ed lear	ning outcomes			
Studer oral pre		• •	research topic and p	resent the results of	their work in a written report or
Course	e <b>s</b> (type	, number of weekly conta	ict hours, language –	- if other than Germa	ın)
P (no ir	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, la ion on whether module ca			tion offered — if not every seme-
		15 minutes) ssessment: German, Eng	lish		
Allocat	tion of	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
			-		
Referre	ed to in	LPOI (examination regu	lations for teaching-	degree programmes)	
Module	e appea	ars in			
		ree (1 major) Chemistry (2	2010)		

Module title					Abbreviation
Courses at the partner university					08-VPUB-132-m01
Module	Module coordinator			Module offered by	
prograi	mme co	oordinator of the exchang	ge programme	Faculty of Chemistr	y and Pharmacy
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)	· · · · ·
50	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This mo	odule c	liscusses topics from the	curriculum of the pa	rtner university abroa	ad.
Intende	ed lear	ning outcomes			
Studen sity.	its have	e developed the knowled	ge and skills taught i	n the courses attend	ed by them at the partner univer-
Course	<b>s</b> (type	, number of weekly conta	act hours, language –	- if other than Germa	n)
no cou	rses as	signed			
		sessment (type, scope, la ion on whether module c			tion offered — if not every seme-
		according to examination ssessment: German, Eng			
Allocat				· · ·	· · · · · ·
Additio	onal inf	ormation			
Worklo	ad				
	-		_		
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regu	llations for teaching-	degree programmes)	
Module	e appea	ars in			
Bachel	or' deg	ree (1 major) Chemistry (	2010)		

Module	title				Abbreviation	
Mathematics for students in Chemistry and Biology					10-M-MCB-101-m01	
Madula		in a tar				
Module coordinator				Module offered by	·	
		es Mathematik (Mathe		Institute of Mathem	natics	
		od of grading rical grade	Only after succ. con	ipi. of module(s)		
5 Duration		Module level				
			Other prerequisites		de via SB@home at	the hegin-
1 semester undergraduate		the specified registr to qualify for admiss certain percentage of the respective detai exercise will be con sessment. If studen assessment over the gistration for assess will be admitted to a ster. For assessmen lification for admiss	Registration for the exercise must be made via SB@home at the begin- ning of the course or as announced by the lecturer in accordance with the specified registration deadlines. Certain prerequisites must be met to qualify for admission to assessment (e. g. successful completion of a certain percentage of exercises). The lecturer will inform students about the respective details at the beginning of the course. Registration for the exercise will be considered a declaration of will to seek admission to as- sessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their re- gistration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent seme- ster. For assessment at a later date, students will have to obtain the qua- lification for admission to assessment anew and have to register anew,			
Content			too.			
The stuc apply ba <b>Courses</b> V + Ü (no <b>Method</b> ster, info written e	dent is asic m (type o infor of ass ormati examin	athematical methods , number of weekly co mation on SWS (week sessment (type, scope on on whether module nation (approx. 90 to 1	I phrase simple questio to them and interpret th ntact hours, language – ly contact hours) and co , language — if other th e can be chosen to earn 120 minutes)	e results. - if other than Germa ourse language avail an German, examina	n) able)	
Allocati	on of p	olaces				
Additior	nal inf	ormation				
Workloa	ad					
Teachin	g cvcl	e				
	5.7.					
Referrer	d to in	<b>IPOI</b> (examination re	gulations for teaching-	legree programmes)		
 Madula		are in				
Module			ictry (2011)			
	-	ree (1 major) Biochem ree (1 major) Biochem	•			
	_	jor Chemistry (2010)		rg • generated 26-Aug-2024	• exam.	page 39 / 44
			reg. data reco	rd Bachelor (180 ECTS) Chen	nie - 2010	

Bachelor' degree (1 major) Biology (2011) Bachelor' degree (1 major) Biology (2010) Bachelor' degree (1 major) Chemistry (2010) Bachelor' degree (1 major) Food Chemistry (2009) Bachelor' degree (1 major) FOKUS Chemistry (2011) No final examination Special study offering (2010)

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 40 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module title				Abbreviation		
Introduction	to Physics for Students	of Non-physics-relate	d Minor Subjects	11-EFNF-072-m01		
Module coor	· · · · · · · · · · · · · · · · · · ·		Module offered by			
	rector of the Institute of A	<u></u>	Faculty of Physics a	and Astronomy		
	od of grading	Only after succ. cor	npl. of module(s)			
7 nume	erical grade					
Duration	Module level	Other prerequisites	<b>i</b>			
2 semester	undergraduate					
Contents						
Mechanics, v	ibration theory, thermod	ynamics, optics, scie	nce of electricity, Ato	mic and Nuclear Physics.		
	rning outcomes					
	have knowledge of the p	principles of Physics				
	e, number of weekly cont		if other than Corma			
	rmation on SWS (weekly					
				tion offered — if not every seme		
	tion on whether module		a bonus)			
written exam	ination (approx. 120 min	utes)				
Allocation of	places					
Only as part o	of pool of general key ski	lls (ASQ): 10 places. F	Places will be allocate	ed by lot.		
Additional in	formation					
Workload						
Worktoad						
	•					
Teaching cyc	le					
Referred to in	LPOI (examination reg	ulations for teaching-	degree programmes)			
Module appe	ars in					
Bachelor' deg	gree (1 major) Biochemis	try (2011)				
	gree (1 major) Biochemis					
	gree (1 major) Biochemis	• -				
Bachelor' deg	gree (1 major) Biology (20	011)				
	gree (1 major) Biology (20					
	gree (1 major) Biology (20					
	gree (1 major) Chemistry					
	gree (1 major) Chemistry					
	gree (1 major) Chemistry					
	Bachelor' degree (1 major) Chemistry (2009)					
	Bachelor' degree (1 major) Geography (2007)					
Bachelor' degree (1 major) Geography (2008)						
Bachelor' degree (1 major) Geography (2010) Bachelor' degree (1 major) Computer Science (2007)						
	gree (1 major) Computer : gree (1 major) Computer :	-				
	gree (1 major) Computer					
	gree (1 major) Pood Chen gree (1 major) Mathemati					
	gree (1 major) Mathemati					
	ajor Chemistry (2010)	-	urg • generated 26-Aug-2024	• exam. page 41 / 44		
			ord Bachelor (180 ECTS) Chem			

Bachelor' degree (1 major) Mathematics (2012) Bachelor' degree (1 major) Mathematics (2013) Bachelor' degree (1 major) Mathematics (2007) Bachelor' degree (1 major) Biomedicine (2009) Bachelor' degree (1 major) Computational Mathematics (2009) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2012) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) Computational Mathematics (2013) Bachelor' degree (1 major) FOKUS Chemistry (2011)

Bachelor's with 1 major Chemistry (2010)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 42 / 44
	reg. data record Bachelor (180 ECTS) Chemie - 2010	

Module title				Abbreviation			
Practical Cou	rse Physics for Studen	ts of Non-physics	-related Minor Subjects	11-PFNF-072-m01			
Madula a	lington			-			
Module coordinator			Module offered b	•			
	ector of the Institute of		Faculty of Physics	s and Astronomy			
	od of grading		cc. compl. of module(s)				
	successfully completed						
Duration	Module level	Other prerequ	Jisites				
1 semester	undergraduate						
Contents							
	ibration theory, thermo	dynamics, optics	, X-rays, nuclear magnet	ic resonance, Atomic and Nuclear			
Physics.							
Intended lea	rning outcomes						
The students	have knowledge of the	principles of Phy	sics.				
Courses (type	e, number of weekly cor	ntact hours, langi	uage — if other than Gerr	nan)			
			course language availal				
	· · · · ·			nation offered — if not every seme			
	tion on whether module			nation offered in not every series			
				kamination (approx. 90 minutes)			
Allocation of							
	•			- 4 - J h - J - 4			
· · ·		(IIIS (ASQ): 10 pla	ices. Places will be alloc	ated by lot.			
Additional in	formation						
Workload							
Teaching cyc	le						
Peferred to in	<b>IPOL</b> (examination re	gulations for tea	ching-degree programme	) C			
Keleffed to fi				3)			
	•						
Module appe							
	gree (1 major) Biochemi						
	gree (1 major) Biochemi						
	gree (1 major) Biochemi						
	gree (1 major) Biology (2 gree (1 major) Biology (2						
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