

Subdivided Module Catalogue for the Subject

FOKUS Chemistry

as a Master's with 1 major with the degree "Master of Science" (120 ECTS credits)

Examination regulations version: 2016 Responsible: Faculty of Chemistry and Pharmacy



Course of Studies - Contents and Objectives

The Master's program in FOKUS Chemistry is offered by the Faculty of Chemistry and Pharmacy of the JMU as a fundamentally-oriented course with the degree of "Master of Science" (M.Sc.), in the context of a consecutive Bachelor's and Master's degree program.

The Master's course prepares students for scientific as well as doctoral work in chemistry and the eventual award of the degree Dr. rer. nat. The aim of the training is to provide students with in-depth knowledge of scientific work in the research and application of chemistry and the associated basic concepts. Through the education and training of analytical thinking, students should acquire the ability to independently apply the basic knowledge obtained earlier in their Bachelor studies and to transfer it to, and later familiarize themselves with, a wide variety of new tasks.

Through the thesis, students should show that they are able to deal with an experimental or theoretical task in a thematically-limited extent using known methods and from a scientific point of view. The Master's examination intends to determine whether the candidate or the candidate has an overview of the relationships in chemistry, and has the ability to apply the learned scientific methods. It allows the acquisition of an internationally comparable degree in the field of chemistry and provides a professional qualification to prepare for future work in research and development.



Abbreviations used

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

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:

ASP02015

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

15-Dec-2015 (2015-258)

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.



The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
Compulsory Courses "Add	itional Qualifications" (10 ECTS credits)	Į.		
08-FOM-HOT-161-m01	Advanced discussion of hot topics in contemporary chemical research	5	B/NB	14
08-FOM-TOP-161-m01	Latest topics of current chemical research	5	B/NB	16
Compulsory Electives (80 Students must successfull available combinations are	ECTS credits) y complete all modules of a total of four sub-areas worth 20 ECT e set out in Section 3 Subsection 2 FSB (subject-specific provision)	S credits e	ach; provision	s on
Subfield Inorganic Chem	istry (20 ECTS credits)			
08-ACFM1-161-m01	Research oriented inorganic chemistry	12	NUM	5
08-ACFM2-161-m01	Research oriented practical course in inorganic chemistry	8	B/NB	6
Subfield Organic Chemis	try (20 ECTS credits)			
08-0CFM1-161-m01	Research oriented organic chemistry	12	NUM	21
08-0CFM2-161-m01	Research oriented practical course in organic chemistry	8	B/NB	22
Subfield Physical Chemis	stry (20 ECTS credits)			
08-PCFM1-161-m01	Research oriented physical chemistry	12	NUM	23
08-PCFM2-161-m01	Research oriented practical course in physical chemistry	8	B/NB	24
Subfield Biochemistry (2	o ECTS credits)			
08-BCFM1-161-m01	Research oriented biochemistry	12	NUM	7
08-BCFM2-161-m01	Research oriented practical course in biochemistry	8	B/NB	8
Subfield Functional Mate	rials (20 ECTS credits)			
08-FMFM1-161-m01	Research oriented course in functional materials	12	NUM	9
08-FMFM2-161-m01	Research oriented practical course in functional materials	8	B/NB	10
Subfield Homogeneous (atalysis (20 ECTS credits)	•		
08-HKFM1-161-m01	Research oriented course in homogeneous catalysis	12	NUM	17
08-HKFM2-161-m01	Research oriented practical course in homogeneous catalysis	8	B/NB	18
Subfield Medicinal Chem	istry (20 ECTS credits)			
08-MCFM1-161-m01	Research oriented pharmaceutical/medicinal chemistry	12	NUM	19
08-MCFM2-161-m01	Research oriented practical course in pharmaceutical/medi- cinal chemistry	8	B/NB	20
Subfield Supramolecular	Chemistry (20 ECTS credits)			
o8-SCFM1-161-mo1	Research oriented supramolecular chemistry	12	NUM	25
08-SCFM2-161-m01	Research oriented practical course in supramolecular chemistry	8	B/NB	26
Subfield Theoretical Che	,	I		
08-TCFM1-161-m01	Research oriented theoretical chemistry	12	NUM	27
08-TCFM2-161-m01	Research oriented practical course in theoretical chemistry	8	B/NB	28
Subfield Additional Skills			, -	
08-FOMA-162-m01	Advanced FOKUS Foreign Studies	20	NUM	12
08-FOMI-162-m01	Advanced FOKUS Industrial work experience	20	NUM	15
08-FOMF-162-m01	Advanced FOKUS research lab course	20	NUM	13
Thesis (30 ECTS credits)	[1 -)
08-FOKUS-MA-161-m01	Master-Thesis FOKUS Chemistry	30	NUM	11



Module title A				Abbreviation	
Research oriented inorganic chemistry			<i></i>		08-ACFM1-161-m01
Modul	e coord	inator		Module offered by	
focus	point co	ordinator "Inorganic Che	emistry"	Institute of Inorgan	ic Chemistry
ECTS		od of grading	Only after succ. con		,
12	nume	rical grade			
Durati	on	Module level	Other prerequisites		
		graduate			
Conte	nts				
Three	selecte	d research-based course	s exploring advanced	topics in inorganic o	chemistry.
Intend	ed lear	ning outcomes			
		able to explain and analy topics covered in differe			organic chemistry. They are able
Course	es (type	, number of weekly conta	act hours, language –	- if other than Germa	n)
S (3) +	S (3) +	S (3)			
		sessment (type, scope, la ion on whether module c			tion offered — if not every seme-
		ion of one candidate eac ssessment: German and		s)	
Alloca	tion of	places			
Additio	onal inf	ormation			
Workle	oad				
360 h					
Teaching cycle					
			<u>-</u> -		
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	Module appears in				
Maste	Master's degree (1 major) FOKUS Chemistry (2016)				



Module title					Abbreviation
Research oriented practical course in inorganic chemistry			norganic chemistry		08-ACFM2-161-m01
Module coordinator				Module offered by	
focus p	focus point coordinator "Inorganic Chemistry"			Institute of Inorganic Chemistry	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
8	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	1 semester graduate				
Conten	Contents				

This module gives students the opportunity to enhance their skills in advanced synthesis and analytical methods in inorganic chemistry. The focus will be on working under inert atmospheres, purification methods, spectral analysis and crystallography. Students will be expected to conduct their work in the lab independently, write a lab report documenting their findings and deliver a presentation.

Intended learning outcomes

Students are able to use advanced synthesis and analytical methods in inorganic chemistry in the lab and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module	Module title Abbreviation					
Resear	ch orie	nted biochemistry	08-BCFM1-161-m01			
Module	Module coordinator			Module offered by		
focus p	oint co	ordinator "Biochemistry'	ı	Chair of Biochemist	try	
ECTS		od of grading	Only after succ. con	npl. of module(s)		
12	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
		graduate				
Conten	its					
Three s	selected	d research-based courses	exploring advanced	topics in biochemis	try.	
Intend	ed lear	ning outcomes				
		able to explain and analy			iochemistry. They are able to si-	
Course	s (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)	
S (3) +	S (3) +	S (3)				
		sessment (type, scope, la ion on whether module c			tion offered — if not every seme-	
		ion of one candidate eac ssessment: German and		s)		
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
360 h						
Teachi	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
	Master's degree (1 major) FOKUS Chemistry (2016)					



Module title				Abbreviation	
Research oriented practical course in biochemistry				08-BCFM2-161-m01	
Modul	e coord	inator		Module offered by	
focus point coordinator "Biochemistry"		i	Chair of Biochemistry		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
8	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conter	Contents				

This module gives students the opportunity to enhance their skills in advanced synthesis and analytical methods in biochemistry. Students will be expected to conduct their work in the lab independently, write a lab report documenting their findings and deliver a presentation.

Intended learning outcomes

Students are able to use advanced synthesis and analytical methods in biochemistry in the lab and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module title Abbreviation					Abbreviation
Resear	rch orie	ented course in functiona	l materials		08-FMFM1-161-m01
Modul	e coord	linator		Module offered by	<u> </u>
focus	ooint co	oordinator "Functional Ma	aterials"	Chair of Chemical T	echnology of Material Synthesis
ECTS		od of grading	Only after succ. con		,
12	nume	rical grade			
Duration	on	Module level	Other prerequisites		
		graduate			
Conter	ıts				
Three	selecte	d research-based courses	exploring advanced	topics in functional	materials.
Intend	ed lear	ning outcomes			
		able to explain and analy topics covered in differen			inctional materials. They are able
Course	es (type	, number of weekly conta	act hours, language –	- if other than Germa	ın)
S (3) +	S (3) +	S (3)			
		sessment (type, scope, la ion on whether module c			ition offered — if not every seme-
		ion of one candidate eac ssessment: German and		s)	
Allocat	tion of	places			
Additio	onal inf	ormation			
			-		
Worklo	oad				
360 h					
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
				<u> </u>	
Modul	e appe	ars in			
	Master's degree (1 major) FOKUS Chemistry (2016)				



Module	e title				Abbreviation
Resear	ch orie	ented practical course in t	functional materials		08-FMFM2-161-m01
Module	e coord	linator		Module offered	d by
focus p	oint co	oordinator "Functional Ma	aterials"	Chair of Chemi	cal Technology of Material Synthesis
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s	s)
8	(not)	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
lab rep	ort do	cumenting their findings a			ork in the lab independently, write a
					terials science in the lab and to inter dings and deliver a presentation.
Course	s (type	e, number of weekly conta	act hours, language –	- if other than G	erman)
P (10)	_		_		
		sessment (type, scope, la			mination offered — if not every seme-
report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English					
Allocation of places					
A d d:t: a		formation			

Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

Module appears in



Modul	Module title Abbreviation					
Master-Thesis FOKUS Chemistry 08-FOKUS-MA-161-mo1					08-FOKUS-MA-161-m01	
Modul	e coord	inator		Module offered by		
head o	of the re	search group offering the	e module	Faculty of Chemistr	y and Pharmacy	
ECTS		od of grading	Only after succ. com	· · · · · · · · · · · · · · · · · · ·		
30	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate	Where applicable, s	pecific modules as s	specified by supervisor.	
Conter	nts					
	ching a		problem within a give	n time frame and ad	hering to the principles of good	
Intend	ed lear	ning outcomes				
		able to conduct research to present the results of t			the principles of good scientific	
Course	es (type	, number of weekly conta	ct hours, language —	· if other than Germa	ın)	
No cou	ırses as	signed to module				
		sessment (type, scope, la ion on whether module ca			ition offered — if not every seme-	
		is (approx. 6o to 8o page ssessment: English	s)			
Allocat	tion of	places				
	,					
Additio	onal inf	ormation				
Time to	comp	lete: 6 months.				
Worklo	<u>.</u>					
900 h						
Teachi	Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
		-	_	<u> </u>		
Modul	Module appears in					



Module title Abbreviation						
Advanced FOKUS Foreign Studies 08-FOMA-162-mo1					08-FOMA-162-m01	
Modul	e coord	inator		Module offered by		
degree	progra	mme coordinator FO	KUS Chemie (Chemistry)	Faculty of Chemisti	v and Pharmacy	
ECTS		od of grading	Only after succ. con		,	
20	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate	A supervisor from the chosen prior to t	• •	t be an authorised examiner, is to	
Conter	nts		be enosen phor to t	ne piacement.		
red in t	the con				ne contents of a lab course offe- please consult with the compe-	
Intend	ed lear	ning outcomes				
		Tamiliar with proceduguage and interperso		in industry. They hav	e acquired subject-specific skills	
Course	s (type	, number of weekly c	ontact hours, language –	- if other than Germa	an)	
P (o)		· · · · · · · · · · · · · · · · · · ·				
			e, language — if other th ule can be chosen to earn		ation offered — if not every seme-	
		tical course (approx. ssessment: German	. 30 pages) and talk inclu and/or English	ding discussion (ap	prox. 20 minutes)	
	tion of p					
Additio	onal inf	ormation				
Worklo	ad					
600 h	600 h					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	Module appears in					



Module	e title				Abbreviation	
Advand	ced FO	(US research lab cours	ie		08-FOMF-162-m01	
Module coordinator				Module offered by		
degree	progra	mme coordinator FOKl	JS Chemie (Chemistry)	Faculty of Chemistr	y and Pharmacy	
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
20	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conten	nts					
		rives students the opponent	ortunity to explore a res	earch topic and app	ly the methods commonly used	
Intend	ed lear	ning outcomes				
	nts are a		fic research topic and p	resent the results of	their work in a written report or	
Course	s (type	, number of weekly cor	ntact hours, language –	- if other than Germa	ın)	
P (o)						
			, language — if other the can be chosen to earn		tion offered — if not every seme-	
		tical course (approx. 3 ssessment: German a	o pages) and talk inclund/or English	ding discussion (app	orox. 20 minutes)	
Allocat	tion of _I	places				
Additio	onal inf	ormation				
Worklo	oad					
600 h						
Teachi	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
			<u> </u>	5 1 6		
Module	e appea	ars in				
		ee (1 major) FOKUS Ch	emistry (2016)			



Advanced discussion of hot topics i			Abbreviation		
,	in contemporary chemic	al research	08-FOM-HOT-161-m01		
Module coordinator		Module offered by			
degree programme coordinator FOK	US Chemie (Chemistry)	Faculty of Chemistr	y and Pharmacy		
ECTS Method of grading	Only after succ. cor	npl. of module(s)			
5 (not) successfully complete	d				
Duration Module level	Other prerequisites	1			
1 semester graduate					
Contents	,				
This module gives students the opp sentation on that topic that is tailor					
Intended learning outcomes					
Students have developed the ability view relevant literature as well as to audience.					
Courses (type, number of weekly co	ntact hours, language –	- if other than Germa	an)		
S (2)					
Method of assessment (type, scope ster, information on whether modul			ation offered — if not every seme-		
talk (approx. 15 minutes) with discu Language of assessment: German a		es)			
Allocation of places					
Additional information					
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination re	egulations for teaching-	degree programmes)			
	<u> </u>	, ,			
Module appears in					
Master's degree (1 major) FOKUS Chemistry (2016)					



Module title					Abbreviation	
Advanc	Advanced FOKUS Industrial work experience				08-FOMI-162-m01	
Module	coord	inator		Module offered by		
degree	progra	mme coordinator FOKUS		•	y and Pharmacy	
ECTS		od of grading	Only after succ. com	pl. of module(s)		
20		rical grade				
Duratio		Module level	Other prerequisites	- I. I		
1 semes	ster	graduate	be chosen prior to the		be an authorised examiner, is to	
Conten	ts					
red in tl	he con				e contents of a lab course offe- lease consult with the competent	
Intende	d lear	ning outcomes				
		amiliar with procedures a	and processes used i	n industry. They hav	e developed both subject-speci-	
Courses	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
P (o)						
		sessment (type, scope, la on on whether module ca			tion offered — if not every seme-	
		tical course (approx. 30 p ssessment: German and,		ding discussion (app	orox. 20 minutes)	
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
600 h	600 h					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
Master'	Master's degree (1 major) FOKUS Chemistry (2016)					



Module title Abbreviation					Abbreviation	
Latest	topics	of current chemical resea	rch		08-FOM-TOP-161-m01	
Module	e coord	inator		Module offered by	<u> </u>	
degree	progra	mme coordinator FOKUS	Chemie (Chemistry)		y and Pharmacy	
ECTS		od of grading	Only after succ. com	•	,	
5	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
					al research in depth, deliver a in discussion of that issue.	
		ning outcomes	ed to their addictice	as well as to engage	. In discussion of that issue.	
Studen	its have	e developed the ability to			as well as to deliver presentati-	
		hey have read that are tai				
S (2)	s (type	, number of weekly conta	ct nours, language –	- ir otner than Germa	in)	
Method		sessment (type, scope, la on on whether module ca			tion offered — if not every seme-	
talk (ap	prox. 1	5 minutes) with discussions seessment: German and	on (approx. 15 minute	•		
Allocat			Ū			
Additio	nal inf	ormation				
	-					
Worklo	ad					
150 h						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
Master	Master's degree (1 major) FOKUS Chemistry (2016)					



Module title					Abbreviation
Resea	rch orie	nted course in homo	geneous catalysis	-	08-HKFM1-161-m01
Module coordinator				Module offered by	
focus	ooint co	ordinator "Homogen	eous Catalysis"	Faculty of Chemistr	y and Pharmacy
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)	
12	nume	rical grade			
Duration	on	Module level	Other prerequisites	i	
		graduate			
Conter	ıts				
Three	selecte	d research-based cou	rses exploring advanced	topics in homogene	ous catalysis.
Intend	ed lear	ning outcomes			
			nalyse selected research n different courses withi		omogeneous catalysis. They are
Course	es (type	, number of weekly co	ontact hours, language –	- if other than Germa	an)
S (3) +	S (3) +	S (3)			
			e, language — if other th le can be chosen to earn		ntion offered — if not every seme-
		ion of one candidate ssessment: German a	each (approx. 45 minute and/or English	s)	
Alloca	tion of	places			
			,		
Additio	onal inf	ormation			
Worklo	oad				
360 h	,				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) FOKUS Chemistry (2016)				



Modul	e title				Abbreviation
Resear	rch orie	ented practical course in	homogeneous cataly	/sis	08-HKFM2-161-m01
Modul	e coord	linator		Module offered by	
focus p	ooint co	oordinator "Homogeneou	s Catalysis"	Faculty of Chemistr	y and Pharmacy
ECTS	Meth	od of grading	Only after succ. co	mpl. of module(s)	
8	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	graduate			
Conter	nts		,		
This module gives students the opportunity to enhance their skills in advanced synthesis and analytical methods in homogeneous catalysis. Students will be expected to conduct their work in the lab independently, write a lab report documenting their findings and deliver a presentation.					
Intended learning outcomes					

Students are able to use advanced synthesis and analytical methods in homogeneous catalysis in the lab and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Modu	Module title Abbreviation					
Resea	rch orie	ented pharmaceutica	l/medicinal chemistry	-	08-MCFM1-161-m01	
Modu	Module coordinator			Module offered by	<u> </u>	
focus	point co	oordinator "Medicina	l Chemistry"	Institute of Pharma	cy and Food Chemistry	
ECTS	' 	od of grading	Only after succ. con	•	,	
12	nume	rical grade				
Durati	ion	Module level	Other prerequisites	1		
		graduate				
Conte	nts					
Three	selecte	d research-based co	urses exploring advanced	topics in medicinal	chemistry.	
Intend	led lear	ning outcomes				
			inalyse selected research ferent courses within a b		nedicinal chemistry. They are able	
Cours	es (type	, number of weekly o	contact hours, language –	- if other than Germa	an)	
S (3) +	- S (3) +	S (3)				
			pe, language — if other th ule can be chosen to earn		ntion offered — if not every seme-	
		ion of one candidate assessment: German	e each (approx. 45 minute and/or English	s)		
Alloca	tion of	places				
	,					
Additi	onal inf	ormation				
			,			
Workl	oad					
360 h			,			
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) FOKUS Chemistry (2016)					
	nactor of Legico (Limitary), control entermonty (Legico)					



Module title					Abbreviation	
Research oriented practical course in pharmaceutical/medicinal chemistry					08-MCFM2-161-m01	
Module coordinator Module offered by					1	
focus point coordinator "Medicinal Cher			emistry"	Institute of Pharmacy and Food Chemistry		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
8	(not)	successfully completed				
Duratio	on .	Module level	Other prerequisites			
1 seme	ı semester graduate					
Contents						
This module gives students the opportunity to enhance their skills in advanced techniques and methods in me-						

cumenting their findings and deliver a presentation. Intended learning outcomes

Students are able to use advanced techniques in medicinal chemistry and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

dicinal chemistry. Students will be expected to conduct their work in the lab independently, write a lab report do-

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module title					Abbreviation	
Resear	Research oriented organic chemistry				08-OCFM1-161-m01	
Module	coordi	inator		Module offered by	<u> </u>	
focus p	oint co	ordinator "Organic Chem	nistry"	Institute of Organic	Chemistry	
ECTS		od of grading	Only after succ. con		,	
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
		graduate				
Conten	ts		,			
Three s	electec	l research-based courses	exploring advanced	topics in organic ch	emistry.	
Intende	ed learr	ning outcomes				
		ble to explain and analy pics covered in different o			rganic chemistry. They are able to	
Course	s (type,	number of weekly conta	act hours, language –	- if other than Germa	ın)	
S (3) +	S (3) + :	S (3)				
		essment (type, scope, la on on whether module c			tion offered — if not every seme-	
		on of one candidate eac ssessment: German and		s)		
Allocat	ion of p	laces				
Additio	nal info	ormation				
Worklo	ad					
360 h						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
Master	Master's degree (1 major) FOKUS Chemistry (2016)					



Module title					Abbreviation
Research oriented practical course in organic chemistry					08-OCFM2-161-m01
Module	e coord	inator		Module offered by	
focus p	oint co	ordinator "Organic Chem	nistry"	Institute of Organic Chemistry	
ECTS	Meth	od of grading	Only after succ. con	ipl. of module(s)	
8	(not)	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semester graduate					
Contents					
This module gives students the opportunity to enhance their skills in advanced synthesis and analytical me-					

Intended learning outcomes

Students are able to use advanced synthesis and analytical methods in organic chemistry in the lab and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

thods in organic chemistry. Students will be expected to conduct their work in the lab independently, write a lab

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

report documenting their findings and deliver a presentation.

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module title					Abbreviation
Resea	rch orie	ented physical chemistry			08-PCFM1-161-m01
Modul	e coord	linator		Module offered by	
focus	point co	oordinator "Physical Cher	mistry"	·	l and Theoretical Chemistry
ECTS		od of grading	Only after succ. con		,
12	nume	rical grade			
Durati	on	Module level	Other prerequisites	i	
		graduate			
Conte	nts				
Three	selecte	d research-based course	s exploring advanced	topics in physical cl	nemistry.
Intend	ed lear	ning outcomes			
		able to explain and analy topics covered in differe			nysical chemistry. They are able
Course	es (type	, number of weekly conta	act hours, language –	- if other than Germa	n)
S (3) +	S (3) +	S (3)			
		sessment (type, scope, la ion on whether module c			tion offered — if not every seme-
		ion of one candidate eac ssessment: German and		s)	
Alloca	tion of	places	,		
Additio	onal inf	ormation			
Workle	oad				
360 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Maste	Master's degree (1 major) FOKUS Chemistry (2016)				



Module title					Abbreviation		
Research oriented practical course in physical chemistry					08-PCFM2-161-m01		
Modul	e coord	inator		Module offered by			
focus point coordinator "Physical Chemis			nistry"	Institute of Physical and Theoretical Chemistry			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
8	(not)	successfully completed					
Duratio	on	Module level	Other prerequisites				
1 seme	ester	graduate					
Conter	Contents						
	This module gives students the opportunity to enhance their skills in advanced techniques and methods in physical chemistry. Students will be expected to conduct their work in the lab independently, write a lab report do-						

Intended learning outcomes

cumenting their findings and deliver a presentation.

Students are able to use advanced techniques in physical chemistry and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation.

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module	Module title Abbreviation					
Researe	ch oriented supramolecula		08-SCFM1-161-m01			
Module	e coordinator		Module offered by			
focus p	oint coordinator "Supramo	lecular Chemistry"	Faculty of Chemistr	y and Pharmacy		
ECTS	Method of grading	Only after succ. con	npl. of module(s)	,		
12	numerical grade					
Duratio		Other prerequisites	i			
	graduate					
Conten	ts					
Three s	elected research-based cou	urses exploring advanced	topics in supramole	ecular chemistry.		
Intende	ed learning outcomes					
	ts are able to explain and a e to situate the topics cove			upramolecular chemistry. They ext.		
Course	s (type, number of weekly o	contact hours, language –	- if other than Germa	an)		
S (3) + S	S (3) + S (3)					
	d of assessment (type, scop formation on whether modu			ntion offered — if not every seme-		
	amination of one candidate ge of assessment: German		s)			
Allocat	ion of places					
Additio	nal information					
Worklo	ad					
360 h						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	Module appears in					
	Master's degree (1 major) FOKUS Chemistry (2016)					



Module	e title	,	Abbreviation			
Research oriented practical course in supramolecular chemistry					08-SCFM2-161-m01	
Module coordinator				Module offered by		
focus p	focus point coordinator "Supramolecular Chemistry"			Faculty of Chemistry and Pharmacy		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
8	(not)	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semester graduate						
Contents						

This module gives students the opportunity to enhance their skills in advanced synthesis and analytical methods in supramolecular chemistry. Students will be expected to conduct their work in the lab independently, write a lab report documenting their findings and deliver a presentation.

Intended learning outcomes

Students are able to use advanced synthesis and analytical methods in supramolecular chemistry in the lab and to interpret their findings. They are able to write a lab report documenting their findings and deliver a presentation

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

P (10)

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)

report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English

Allocation of places

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Additional information

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in



Module title					Abbreviation	
Resear	Research oriented theoretical chemistry				08-TCFM1-161-m01	
Module	coord	inator		Module offered by		
focus p	oint co	ordinator "Theoretical Cl	nemistry"	Institute of Physica	l and Theoretical Chemistry	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	·	
12	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
		graduate				
Conten	ts		•			
Three s	elected	l research-based course	s exploring advanced	topics in theoretical	chemistry.	
Intende	ed learr	ning outcomes				
		able to explain and analy ne topics covered in diffe			eoretical chemistry. They are ab-	
Course	s (type,	, number of weekly conta	act hours, language –	if other than Germa	n)	
S (3) +	S (3) +	S (3)				
		eessment (type, scope, la on on whether module c			tion offered — if not every seme-	
		on of one candidate eac ssessment: German and		s)		
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad		,			
360 h	360 h					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
-						
Module	Module appears in					
Master	Master's degree (1 major) FOKUS Chemistry (2016)					



WÜRZBURG FOKUS Chemistry Master's with 1 major, 120 ECTS credits						
Module title Abbreviation						
Research oriented practical course in theoretical chemistry				!	08-TCFM2-161-m01	
Module coordinator				Module offered by		
focus p	oint co	ordinator "Theoretical Ch	nemistry"	Institute of Physical and Theoretical Chemistry		
ECTS Method of grading			Only after succ. compl. of module(s)			
8	(not)	successfully completed				
Duratio	Duration Module level		Other prerequisites			
1 semester		graduate				
Contents						
mistry. Students will be expected to conduct their work in the lab independently, write a lab report documenting their findings and deliver a presentation. Intended learning outcomes Students are able to use advanced methods in theoretical chemistry and to interpret their findings. They are able						
to write a lab report documenting their findings and deliver a presentation.						
Courses (type, number of weekly contact hours, language — if other than German)						
P (10)						
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)						
report on practical course (approx. 40 pages) and talk including discussion (approx. 30 minutes) Language of assessment: German and/or English						
Allocation of places						
Additional information						
Additio	Additional information on module duration: block placement with a duration of approx. 40 working days.					

Additional information on module duration: block placement with a duration of approx. 40 working days. At student's option, the placement may be divided up into two individual placements with a duration of approx. 20 working days each. If the placement is divided up into two individual placements, students will be required to prepare a placement report (approx. 15 pages) and deliver a talk (including discussion, approx. 10 minutes) for each of the placements.

Workload

240 h

Teaching cycle

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

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Module appears in