

Module Catalogue

for the Subject

Biology

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

> Examination regulations version: 2014 Responsible: Faculty of Biology

JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record 88|026|-|-|H|2014



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The subject is divided into

section / sub-section	ECTS credits	starting page
Thesis	30	10
Compulsory Electives	90	13
Compulsory Electives 1	75	14
Focus 1		15
Neurosciences	30	16
Animal Ecology and Tropical Biology	30	25
Behavioral Physiology and Sociobiology	30	33
Focus 2		40
Molecular Cell- and Developmental Biology	30	41
Microbiology	30	49
Cellular and Molecular Biotechnology	30	56
Bioinformatics	30	64
Immunology	30	90
Virology	30	95
Human Genetics	30	100
Physiological Chemistry	30	115
Cellular Tumorbiology	30	124
Focus 3		140
Molecular Cell- and Developmental Biology of Plants	30	141
Biochemistry and Structural Biology	30	149
Biophysics	30	157
Pharmaceutical Biology	30	165
Ecology and Ecophysiology of Plants	30	174
Microbial and Chemical Ecology	30	182
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Content and Objectives of the Programme

The study program requires the intensive theoretical and practical training in scientific topics in Biology and Life Sciences. The graduate is able to use appropriate methods to answer scientific questions and to conduct research projects.

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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

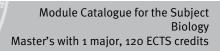
associated official publications (FSB (subject-specific provisions)/SFB (list of modules)):

28-Apr-2014 (2014-21)

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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Thesis (30 ECTS credits)

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Module title					Abbreviation
Final Examination in Biology					07-MT-102-m01
Module	e coord	inator		Module offered by	
chairpe	erson o	f examination committee	Biologie (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
30	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	By way of exception assessments.	, additional prerequi	sites are listed in the section on
Conten	ts				
ments t and ap of good	to solve ply adv l scient	e problems or summarise anced and novel techniq	and interpret existin ues in the context of are summarised in a	g data. Students hav a given research pro	They plan and perform experi- ve to develop a research plan ject, adhering to the principles efended in a colloquium. The pro-
Intende	ed lear	ning outcomes			
me. The perime	ey are a nts, ad	able to independently app	proach current scient of scientific practice.	ific topics and to per Students are able to	fy them according to the outco- form, interpret and document ex- o discuss and defend their work ics.
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	rman)	
compo • 0 • 0	nent. 97-MT-1 97-MK-1	-102: no courses assigne -102: no courses assigne	d d		sted separately for each module
		le for bonus)			
	iless st	ated otherwise, successf			e components as specified be- successful completion of all indi-
 Assessment in module component o7-MT-1-102: Thesis 25 ECTS, Method of grading: numerical grade written thesis Language of assessment: German or English Other prerequisites: F2 lab course on topic of thesis Assessment in module component o7-MK-1-102: Final Colloquium Biology 5 ECTS, Method of grading: numerical grade final colloquium (approx. 45 minutes) Only after successful completion of module components: o7-MT-1 					
Allocation of places					
Additional information					
Additional information will be listed separately for each module component. • o7-MT-1-102: Additional information on module duration: 6 months. • o7-MK-1-102:					
Worklo	ad				

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Teaching cycle

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

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Module appears in

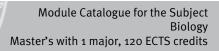
Master's degree (1 major) Biology (2011)

Master's degree (1 major) Biology (2010)

Master's degree (1 major) Biology (2014)

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Compulsory Electives

(90 ECTS credits)

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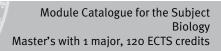
Compulsory Electives 1

(75 ECTS credits)

30 ECTS credits in subsidiary subject area, 45 ECTS credits in main subject area (cf. Section 3 Subsections 2 and 8 FSB (subject-specific provisions)

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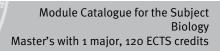




Focus 1 (ECTS credits)

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Neurosciences

(30 ECTS credits)

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Module title					Abbreviation
Neurobiology, Behavior and Animal Ecology (Lecture)					07-MS1-102-m01
Module coordinator M				Module offered by	
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
lt will p providi	rovide ng ther	students with insights in n with the fundamental k	to these fields, helpi	ng them select their	hysiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.
· · · · · · · · · · · · · · · · · · ·		ning outcomes			
		o know the advantages o relate and integrate differ			g complex biological systems.
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2010			
Master's degree (1 major) Biology (2014)					

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Module title					Abbreviation	
Molecular and Clinical Neurobiology (Lecture and Seminar)					07-MS1N-102-m01	
Module coordinator				Module offered by		
Prof. Dr	. M. Se	ndtner		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10		rical grade				
Duratio		Module level	Other prerequisites			
1 seme		graduate				
Conten						
nervous thies - s the hun Parkins ry, ante vision, cription lecture Fridays module	Content of the lecture <i>Molekulare und klinische Neurobiologie (Molecular and Clinical Neurobiology)</i> - cells of the nervous system, properties of neurons and glial cells - ion channels and excitability of membranes, channelopathies - synapses, transmitter release, neuromuscular end plate, Myasthenia gravis - motor activity, anatomy of the human motor system, spinal reflexes, motor neuron diseases - cerebellum, ataxia and basal ganglia, Morbus Parkinson - muscles and muscle diseases - somatosensory system and pain - hippocampus, learning and memory, anterograde amnesia, visual agnosia - cortex, Morbus Alzheimer - sleep, EEG, epilepsy - sensory physiology, vision, diseases of the visual system; Reading: Kandel, Principles of Neural Science, 4th Edition: A detailed description of this course is also available at http://neurobiologie.uk-wuerzburg.de/lehrveranstaltungen.html. The lecture Molecular and Clinical Neurobiology (incl. seminar) and <i>Neuroentwicklungsbiologie (Neurodevelopment</i> ; Fridays 8-9 a. m.) together form one theoretical module (10 ECTS). However, you may also complete these two modules separately and have them credited within the area of mandatory electives 2. Intended learning outcomes Theoretical foundations of molecular and clinical neurobiology, developmental mechanisms of neuronal diseases.					
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
module is Studen	creditab ts will b	le for bonus) De informed about the me	ethod, length and sco	ope of the assessme	nt prior to the course. Usually, nut prior to the course usually,	
questio	ns) or l		e candidate each (30) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010)					
	-	ee (1 major) Biology (2014				

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Module title Abbreviation					Abbreviation	
Endogenous Clocks					07-MS1CB-141-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Neurobiology and	Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
neuron clocks a be expl	al orga and the ained	nisation of the clock in the underlying mechanisms	ne brain of mammals s will be discussed or	and insects. The bio the molecular, cellu	animals, with a focus on the logical functions of endogenous ılar and organismic levels. It will d aspects regarding e.g. shift	
Intende	ed lear	ning outcomes				
into cur	rrent re				us clocks and obtain an insight a skills and the discussion of re-	
		number of weekly contact hours, l				
V + S (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
		sessment (type, scope, langua ile for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
written tes	exami	nation or oral examinatio	n of one candidate ea	ach or oral examinat	ion in groups of up to 3 candida-	
Allocat	ion of _l	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module						
		ee (1 major) Biology (2013				
Master's degree (1 major) Biology (2014)						

Module title Abbreviation						
Neuromodulation and Neuronal Development					07-MS1NMND-141-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
aptic tr stems i biology ronal p	ansmis used to 7. Focus recurso	ssion and membrane pote study modulation of neu is on the establishment prs, neuronal growth, diffe	ential, theoretical and ironal circuits. Funda of the neuroectoderr	l functional aspects mental principles of n, pattern generation	receptors, modulation of syn- of neuromodulation, model sy- molecular developmental neuro- n and regional specification, neu- g, neuronal connectivity.	
		ning outcomes		modulation and no	wonal doublessment and obtain	
		o current research in the f		modulation and net	uronal development and obtain	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V + S (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
written tes	exami	nation or oral examinatio	n of one candidate ea	ach or oral examinat	ion in groups of up to 3 candida-	
Allocat	ion of _l	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module						
	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014)					
master s degree (1 major) biology (2014)						

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 20 / 292	
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Module title Abbreviation					
enetic	s of Behavior			07-MS1NB-112-m01	
coord	inator		Module offered by		
of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
Metho	od of grading	Only after succ. com	pl. of module(s)		
nume	rical grade				
n	Module level	Other prerequisites			
ster	graduate				
ts					
whelm e brain ics of b irror ne	ingly complex and plastic controls behaviour. The l behavioural neurobiology urons, molecular mechar	c, yet neurogenetic m lecture and seminar v (incl. e. g. sleep, con nisms of auditory-gui	ethods are powerful will give a state-of-th trol of appetite and ded behaviour, neur	l tools to dissect the principles of le art view on current and import- feeding, social behaviour, ma- rogenetic techniques) focusing on	
ed lear	ning outcomes				
s in ge	neral and the neurogenet				
io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
ion of p	olaces				
nal inf	ormation				
ad					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
-					
	enetics coord of the (Metho nume n ster ts erstanc whelm e brain ics of b rror ne model e learn s in ge creditab en exai e ach (3 ion of p nal info ad d to in	enetics of Behavior coordinator of the Chair of Neurobiology and Method of grading numerical grade n Module level ster graduate ts erstand how the brain controls to whelmingly complex and plastic behavioural neurobiology rror neurons, molecular mechan model systems such as the fruit ed learning outcomes ecture, students acquire theoret s in general and the neurogenet search findings in English. f (type, number of weekly contact hours, I to information on SWS (weekly coll of assessment (type, scope, langua creditable for bonus) en examination (30 to 60 minute each (30 to 60 minutes) or c) or ion of places ad bg cycle d to in LPO I (examination regulations s degree (1 major) Biology (2012	enetics of Behavior coordinator of the Chair of Neurobiology and Genetics Method of grading Only after succ. com numerical grade n Module level Other prerequisites ster graduate ts erstand how the brain controls behaviour is at the he whelmingly complex and plastic, yet neurogenetic m brain controls behaviour. The lecture and seminar w brain controls behaviour. The lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour. The lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour. The lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour. The lecture and seminar w brain controls behaviour, the lecture and seminar w brain controls behaviour. The lecture and seminar w brain controls behaviour mechanisms of auditory-gui model systems such as the fruit fly Drosophila, the r brain goutcomes ecture, students acquire theoretical and methodolog s in general and the neurogenetics of behaviour. In t bracent findings in English. S (type, number of weekly contact hours, language — if other than German, o creditable for bonus) en examination (30 to 60 minutes, including multiple each (30 to 60 minutes) or c) oral examination in gro fion of places nal information ad ad a bracent set the formulation regulations for teaching-degree programes bracent set the formulation set the fo	enetics of Behavior coordinator coordinato	

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 21 / 292
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Module title					Abbreviation	
Developmental Neurobiology and Chronobiology					07-MS1NEC-112-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme		graduate				
Conten						
ganism brain of on a mo dayligh of neur formati	s, fung f mamr olecula t. Relat onal de on, reg	i, plants, and animals wi nals and insects. Studen r, cellular, and organismi ted aspects of jetlag and evelopment on the molec	th a focus on the neu ts learn about the bic ic level, as well as the shift-work are discus ular level. Main focus	ronal organisation o plogical purpose of e eir adaptation to 24 l sed. Lecture <i>Neuron</i> s is the establishmer	genous clocks in unicellular or- of the endogenous clock in the endogenous clocks, their function hour days with varying hours of <i>al Development</i> : Fundamentals of the neuroectoderm, pattern iation of neurons, axonal naviga-	
Intende	ed learı	ning outcomes				
ment a ments a	nd gain and to	an insight into current re	esearch. Students als	o learn to independ	clocks and neuronal develop- ently work on reading assign- he students' independent study	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
		mation on SWS (weekly o				
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
	Module appears in					
	-	ee (1 major) Biology (201: ee (1 major) Biology (201/				
	-	ee (1 major) FOKUS Life S	-			

Ī

Module title Abbreviation						
Neurobiology	(Practical Course and Se	minar 1)		07-MS1NF1-102-m01		
Module coord	Module coordinator					
holder of the Chair of Neurobiology and Genetics			Faculty of Biology			
ECTS Meth	od of grading	Only after succ. com	pl. of module(s)			
10 nume	rical grade					
Duration	Module level	Other prerequisites				
1 semester	graduate					
Contents						
specialisation addition to a histochemistr stems are offe	ns: molecular, clinical, cel literature search, a variety y, molecular biological te	lular, developmental y of neurobiological n chniques, clinical an	or behavioural neur nethods (for example d neurogenetic tech	urse will be offered in different robiology or in neurogenetics. In e: electrophysiology, immuno- niques) and different model sy- in the form of a scientific talk, a		
Intended lear	ning outcomes					
knowledge ar	id skills (e. g. basic and a	dvanced knowledge,	special knowledge,	biology. They have acquired the advanced methodological back- al experiments according to best		
Courses (type,	number of weekly contact hours, l	anguage — if other than Ger	man)			
S + P (no info	rmation on SWS (weekly o	contact hours) and co	urse language availa	able)		
Method of as module is creditat		ge — if other than German, e	examination offered — if no	t every semester, information on whether		
following opti or b) log (app	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)		
Allocation of	places		· · · · ·			
Additional inf	ormation					
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degr	ee (1 major) Biology (201	1)				
-	ee (1 major) Biology (201					
Master's degr	ee (1 major) Biology (201	4)				

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 23 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	Module title Abbreviation					
Neurobiology (Practical Course and Seminar 2)					07-MS1NF2-102-m01	
Module coordinator				Module offered by		
holder	of the O	Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
15	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
biologic gress of	cal, ger f the ex	netic or molecular technic	ques will be tested ar nt line of research wil	nd adapted accordin	of research at the Chair. Neuro- g to the research aim. The pro- id presented in the form of a	
Intende	ed leari	ning outcomes				
apt a re basic a	search nd adv nods) t	plan according to the ex anced knowledge, specia	perimental progress. al knowledge, advanc	They have acquired ed methodological l	e field of neurobiology and to ad- the knowledge and skills (e.g. background, general and speci- Il experiments according to best	
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + P (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
followir or b) log	ng optio g (appr	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocati	ion of p	olaces		· · · ·		
Additio	nal inf	ormation				
Workload						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in in				
	-	ee (1 major) Biology (2011				
	-	ee (1 major) Biology (2010				
Master's degree (1 major) Biology (2014)						

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Animal Ecology and Tropical Biology

(30 ECTS credits)

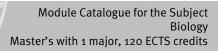
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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abb					Abbreviation	
Neurob	iology	, Behavior and Animal Ec	ology (Lecture)		07-MS1-102-m01	
Module	Module coordinator M					
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
lt will p providi	rovide ng ther	students with insights in n with the fundamental k	to these fields, helpi	ng them select their	hysiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.	
		ning outcomes				
		o know the advantages o elate and integrate differ			g complex biological systems.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	Module appears in					
	-	ee (1 major) Biology (2011				
	0	ee (1 major) Biology (2010	,			
Master's degree (1 major) Biology (2014)						

Module title A					Abbreviation	
Animal Ecology and Tropical Biology (Lecture and Seminar)			ecture and Seminar).		07-MS1TÖ-102-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
current tions ar	issues nd fooc . In the	in animal ecology. Focus I nets, evolutionary ecolo	s will be on biodiversi gy, chemical ecology	ty and ecosystem fu , tropical ecology, a	of the theoretical foundations and anctions, multi-trophic interac- gricultural ecology, and global ed above will be presented and	
Intende	ed learı	ning outcomes				
of anim	al ecol		interpret scientific pu		rrent research issues in the field y the acquired knowledge to the	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
		e essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in and the second se				
	-	ee (1 major) Biology (2011				
	-	ee (1 major) Biology (2010				
master	Master's degree (1 major) Biology (2014)					

Module title					Abbreviation	
Animal Ecology and Tropical Biology 2					07-MS1TÖ2-111-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
focus is	s on the		opical systems (ecos	ystem goods and eco	opical communities. A special osystem services), but the biolo-	
Intende	ed leari	ning outcomes				
animal	ecolog		be qualified to interp		research issues in the field of nd apply the knowledge they ha-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V + S (n	infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	in and the second se				
	-	ee (1 major) Biology (2011				
Master's degree (1 major) Biology (2014)						

A	Module title					Abbreviation	
Апіта	l Ecolog	gy F1 (Practical Course a	nd Seminar 1)		07-MS1TÖF1-102-m	101	
Modul	e coord	inator		Module offered by			
holder of the Chair of Animal Ecology and Tropical Biolog			and Tropical Biology	Faculty of Biology			
ECTS	1	od of grading	Only after succ. con				
10		rical grade					
Duratio		Module level	Other prerequisites	6			
1 seme	ester	graduate	Admission prerequi	site to assessment: pletion of the respe	regular attendance o ctive exercises as sp		
Conter	nts						
cording logical studen ties in Forest manag nature cent sc Intend Studer gy. The ar with their kn	g in the model nts' own agroece ecology gement conser cientific ed lear nts will by anima nowled	-pollinator-interactions. habitat, identification a ling (block, 2 weeks): cu modelling project on cu osystems, biological per (block, 1 week): arthro on diversity patterns an vation-related issues to publications on the top ning outcomes have expanded their know e able to design, perfor l ecological methods an ge of the biology and eco edge and skills necessa	and characteristics of e rrent methods of ecol urrent issues in ecolog st control in landscape pod communities in for d functional groups. 6 be implemented in a ics covered in the mo owledge on ecological m, statistically analyse d possible sources of ology of important fur	different arthropod g ogical processes mo gy. 4. Agroecology (b e context, evaluation prest ecosystems, mo . Tropical ecology (b tropical ecosystem i dules listed above w l theories and current e and interpret scient error in data interpro- nctional taxa of arthr	proups, field experim odelling, simulation i lock, 1 week): insect of agri-environmen ethods of detection, lock): small projects n East Africa. In the vill be presented and tresearch issues in tific research. They we etation. They will hav opods. Students wil	ents. 3. Eco- models, the t communi- t schemes. 5 influence of s ecological o seminar, re- d discussed. animal ecolo will be famili- ve deepened l have acqui-	
Macta	r's thes		, language — if other than Ger	rman)			
-	S (type, r		00				
Course	_	mation on SWS (weekly	contact hours) and co	ourse language avail	able)		
Course S + P (t Metho	no infor d of as s				· ·	tion on whether	
Course S + P (I Metho module i Studer followi or b) lo	no infor d of ass s creditab nts will ing opti og (app	mation on SWS (weekly sessment (type, scope, langu	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (1 Metho module i Studer followi or b) lc aminat	no infor d of ass s creditab nts will ing opti og (app	rmation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (1 Metho module i Studer followi or b) lc aminat	no infor d of ass s creditat nts will ing opti og (app tion in s	rmation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (I Metho module i Studer followi or b) lc aminat Allocat	no infor d of ass s creditab nts will ng opti og (app tion in g tion of p	rmation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (I Metho module i Studer followi or b) lc aminat Allocat	no infor d of ass s creditab nts will ng opti og (app tion in g tion of p	rmation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (r Metho module i Studer followi or b) lc aminat Allocat Additic	no infor d of ass s creditab nts will ing opti og (app tion in s tion of p	rmation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (r Metho module i Studer followi or b) lc aminat Allocat Additic Worklc	no infor d of ass s creditab nts will ing opti og (app tion in s tion of p	mation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places	age — if other than German, ength and scope of the ritten examination (30) oral examination of c	examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (r Metho module i Studer followi or b) lc aminat Allocat Additic Worklc Teachi	no infor d of ass s creditab nts will ing opti og (app tion in g tion of p onal inf oad	mation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places ormation	age — if other than German, ength and scope of the ritten examination (3c) oral examination of c ates (approx. 30 to 6c	examination offered — if ne e assessment prior t o to 60 minutes, incl one candidate each o minutes) or e) pres	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (r Metho module i Studer followi or b) lo aminat Allocat Additio Worklo Teachi 	no infor d of ass s creditab nts will ing opti og (app tion in g tion of p onal inf oad	mation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places	age — if other than German, ength and scope of the ritten examination (3c) oral examination of c ates (approx. 30 to 6c	examination offered — if ne e assessment prior t o to 60 minutes, incl one candidate each o minutes) or e) pres	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o	y, one of the ce questions) r d) oral ex-	
Course S + P (r Metho module i Studer followi or b) lo aminat Allocat Worklo Teachi Referre	no infor d of ass s creditation ing opti og (app tion in g tion of p tion al inf onal inf oad	mation on SWS (weekly sessment (type, scope, langu- ble for bonus) be informed about the la ons will be chosen: a) w rox. 10 to 30 pages) or c groups of up to 3 candid places ormation	nage — if other than German, ength and scope of the ritten examination (3c) oral examination of c ates (approx. 30 to 6c	examination offered — if ne e assessment prior t o to 60 minutes, incl one candidate each o minutes) or e) pres	ot every semester, informat o the course. Usuall uding multiple choic (30 to 60 minutes) o entation (20 to 45 m	y, one of the ce questions) r d) oral ex-	



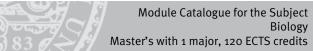
Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

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Module title					Abbreviation	
Animal Ecology and Tropical Biology F2 (Practical Course and Seminar 2)					07-MS1TÖF2-102-n	101
Module coordinator				Module offered by		
holder	of the (Chair of Animal Ecology	and Tropical Biology	Faculty of Biolog	gy	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
15	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate		pletion of the res	nt: regular attendance spective exercises as sp	
Conten	nts					
scienti will als of Anin cal cou contex informa	fic pape so be re nal Eco urse in (t of an e ation of	er, including an introdu quired to present their logy and Tropical Biolo Germany, another coun ongoing research proje	ction, material and me findings during a wrap gy offer a wide variety o try in Europe or in the t ct of the Institute or in e as well as current top	thods, findings a -up seminar. The of opportunities f ropics. F2 practic cooperation with vics or appointme	their work in a log sim and a discussion of thes various research group or students to complete al courses may be com other institutions. For ents for consultations, p groups directly	se. Students is at the Chair e an F2 practi- pleted in the more detailed
		ning outcomes			Sloups directly.	
statisti ster's t Course	ically. T hesis. es (type, r	hey have developed kn	owledge and skills tha s, language — if other than Ger	t allow them to s	e to collect data and int et up a scientific projec	
		mation on SWS (weekl	·		·	
		Sessment (type, scope, lang Ile for bonus)	uage — if other than German,	examination offered —	if not every semester, informa	tion on whether
followi or b) lo aminat	ng opti og (appi tion in g	ons will be chosen: a) v rox. 10 to 30 pages) or o groups of up to 3 candio	written examination (3c c) oral examination of c	o to 60 minutes, i one candidate ea	or to the course. Usuall including multiple choic ch (30 to 60 minutes) o resentation (20 to 45 m	ce questions) r d) oral ex-
Allocat	tion of _l	olaces				
		4 •				
Additio	onal Inf	ormation				
 Worklo	ad .					
	au					
Teachi	ng cycl	9				
	ing cycl					
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
				inities)		
Module	e appea	ars in				
	-	ee (1 major) Biology (20 ee (1 major) Biology (20				
Master	r's degr	ee (1 major) Biology (20 ee (1 major) Biology (20 r Biology (2014)	010)	rg • generated 26-Aug-2		page 31 / 292





Master's degree (1 major) Biology (2014)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 32 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	



Behavioral Physiology and Sociobiology

(30 ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 33 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation	
Neurobiology, Behavior and Animal Ecology (Lecture)					07-MS1-102-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
lt will p providi	rovide ng ther	students with insights in n with the fundamental k	to these fields, helpi	ng them select their	hysiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.	
· · · · · · · · · · · · · · · · · · ·		ning outcomes				
		o know the advantages o relate and integrate differ			g complex biological systems.	
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		sessment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module						
	-	ee (1 major) Biology (2011				
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2010				
Master's degree (1 major) Biology (2014)						

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 34 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation	
Communication Biology (Lecture)					07-MS1K-102-m01	
Module coordinator				Module offered by		
holder logy	of the (Chair of Behavioral Physic	ology and Sociobio-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
used b semina	y anima ar sessi	als, but also highlight ada	aptive values and evo	olutionary aspects of	ent communication channels animal signalling. In a follow-up ssing current papers related to	
Intend	ed lear	ning outcomes				
learneo logical	d to cor conditi	nect findings from differe	ent research areas, si ore complete picture	uch as physiology, n of a topic. In additio	blex issues in biology. They have eurobiology, behaviour and eco- n, students have learned to pre- nework.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
followi or b) lo	ng opti og (appi	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of j	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	urs in				
	-	ee (1 major) Biology (2013				
	-	ee (1 major) Biology (2010				
Master's degree (1 major) Biology (2014)						

Master's with 1 major Biology (2014)	JMU Würzburg ● generated 26-Aug-2024 ● exam.	page 35 / 292
Muster s with I major blotogy (2014)		puge 557 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation
Experimental Sociobiology					07-MS1ES-111-m01
Module coordinator				Module offered by	
holder logy	of the (Chair of Behavioral Physic	ology and Sociobio-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and me current	echanis resear	ms of neurobiology that a	are the basis of the o e help of selected pu	rganisation of social	l as the behavioural physiology groups. A special focus is on nar will discuss and explore in
Intende	ed lear	ning outcomes			
ral biol	ogy. St re able	udents are able to recogn to formulate scientific qu	ise and interpret rela	ationships between v	olex correlations in behaviou- various aspects of sociobiology. d are able to discuss cutting edge
Course	S (type, r	number of weekly contact hours, la	anguage — if other than Ger	man)	
V + S (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		sessment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
10 to 30 groups	o pages of up t	s) or c) oral examination o	of one candidate eacl	h (usually 30 to 60 m	stions) or b) log (usually approx. ninutes) or d) oral examination in on (usually 20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	irs in			
	-	ee (1 major) Biology (2011			
		ee (1 major) Biology (2012			
Master's degree (1 major) FOKUS Life Sciences (2012)					

Module title					Abbreviation	
Neurog	enetics	s of Behavior			07-MS1NB-112-m01	
Module coordinator				Module offered by		
holder	of the C	hair of Neurobiology and	d Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	ľ	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme		graduate				
Conten	ts					
be over how the ant top ting, mi	whelm e brain ics of b irror ne	ingly complex and plastic controls behaviour. The l ehavioural neurobiology	c, yet neurogenetic m lecture and seminar v (incl. e. g. sleep, con nisms of auditory-gui	ethods are powerful will give a state-of-th trol of appetite and ded behaviour, neur	Both brain and behaviour can I tools to dissect the principles of the art view on current and import- feeding, social behaviour, ma- rogenetic techniques) focusing on atode C. elegans.	
Intende	ed learr	ning outcomes				
genetic	s in gei	•		•	rrent topics in the field of neuro- s practise presenting and discus-	
		umber of weekly contact hours, l				
V + S (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
					or b) oral examination of one can- dates (approx. 30 to 60 minutes)	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teachir	Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module			.)			
	-	ee (1 major) Biology (2011 ee (1 major) Biology (2012				
	0	ee (1 major) FOKUS Life S	10			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 37 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

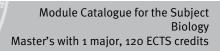
Modul	e title				Abbreviation
Behavi	oral Bi	ology (Practical Course	e and Seminar 1)		07-MS1VF1-102-m01
Module coordinator				Module offered by	
holder logy	ofthe	Chair of Behavioral Phy	vsiology and Sociobio-	Faculty of Biology	
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites	i	
1 seme	ster	graduate			regular attendance of lab course respective exercises.
Conten	ts				
the cur physio ly analy	rent to logical, ysed, s	pics in the field of beh neurobiological and b	avioural physiology and behavioural methods. Th ific report and presente	l sociobiology. They ne results obtained	l independently work on one of will gain an insight into the lates will be graphically and statistical- ontact the research groups at the
Intend	ed lear	ning outcomes			
	iology.	In addition, they are a	<i>i i</i>	•	eld of behavioural physiology and otained and to present them to a
Course	S (type, r	number of weekly contact hou	rs, language — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (week	ly contact hours) and co	ourse language avai	lable)
		Sessment (type, scope, lan Ile for bonus)	guage — if other than German,	examination offered — if n	ot every semester, information on whether
followi or b) lo	ng opti g (app	ons will be chosen: a) rox. 10 to 30 pages) or	written examination (3c c) oral examination of c	o to 60 minutes, inc one candidate each	to the course. Usually, one of the luding multiple choice questions) (30 to 60 minutes) or d) oral ex- sentation (20 to 45 minutes)
Allocat					
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulat	ions for teaching-degree progra	ammes)	
Modul	e appea	ars in			
MOUUI					
	's degr	ee (1 major) Biology (2	011)		
Master	-	ee (1 major) Biology (2 ee (1 major) Biology (2			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 38 / 292
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Module	e title				Abbreviation
Behavi	oral Bi	ology (Practical Course a	nd Seminar 2)		07-MS1VF2-102-m01
Module	e coord	inator		Module offered by	· · · · · · · · · · · · · · · · · · ·
holder logy	ofthe	Chair of Behavioral Physi	ology and Sociobio-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
15	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			regular attendance of lab course respective exercises.
Conten	ts				
series a be grap	and to bhically	apply the latest physiolo	gical, neurobiologica d, summarised in a s	l and behavioural m cientific report and	will learn to plan experimental ethods. The results obtained will presented in a talk. Please con-
Intend	ed lear	ning outcomes			
sociob	iology.		arned to interpret the	results obtained, ta	eld of behavioural physiology and king into account current litera-
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (app	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of	olaces			
Additio	onal inf	ormation			
			<u>.</u>		
Worklo	ad				
	1				
Teachi	ng cycl	e	-		
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 39 / 292	
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Focus 2 (ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 40 / 292
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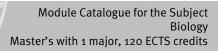


Molecular Cell- and Developmental Biology

(30 ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 41 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation						
Molecu	ılar Bio	logy (Lecture)			07-MS2-102-m01	
Module	Module coordinator Module offered by					
Bioinfo	rmatics	Chair of Microbiology, h s, holder of the Chair of Siology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Develo cular bi book "I karyoti cells in quarter molecu Biology of the c nology time). 1 prokary on mac cell div	Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern mole- cular biology from the point of view of these different disciplines. Participants are recommended to read the text- book "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eu- karyotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing tech- nology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translati- on machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communi- cation mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorga-					odern mole- read the text- sses the eu- elles and tion (app. a gation of the Essential Cell on the topics uting tech- es precious aspects of d translati- romolecules, l communi-
Intende	ed learr	ning outcomes				
Master	level k	nowledge about the m	olecular biology of the	eukaryotic and proka	aryotic cell.	
Course	S (type, n	umber of weekly contact hour	s, language — if other than Ge	rman)		
V (no ir	nformat	ion on SWS (weekly co	ntact hours) and cours	e language available	2)	
		s essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
one of t questic	the follons) or [be informed about the owing options will be c b) oral examination of ates (approx. 30 to 60	hosen: a) written exam one candidate each (30	ination (30 to 60 mi	nutes, including mul	tiple choice
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulati	ons for teaching-degree progra	ammes)		
Master's wi	ith 1 major	Biology (2014)		irg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 42 / 292



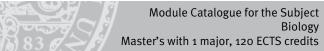
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 43 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Modul	e title				Abbreviation	
Cell- ai	nd Deve	elopmental Biology M	laster 1 (Lecture and Sen	ninar 1)	07-MS2ZE1-102-m01	
Module	e coord	inator		Module offered by	<u> </u>	
holder logy	ofthe	Chair of Cell Biology a	nd Developmental Bio-	Faculty of Biology		
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conten	nts		•			
<i>und Pe</i> cell and lic disc	e <i>rspekti</i> d unrav orders a	ven (Milestones and F els their biological ca nd cancer. In the sem	Perspectives of Cell Biolo auses and consequences	gy). The lecture des , such as infection, spectives of Cell Biol	nar <i>Zellbiologie-Meilensteine</i> cribes pathological states of the apoptosis, senescence, metabo- <i>logy</i> , classic ground-breaking pu- <i>N</i> .	
Intend	ed lear	ning outcomes				
		ossess scientific bacl biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade	
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	rman)		
S + V (r	no infoi	mation on SWS (weel	kly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether	
one of questio	the foll ons) or	owing options will be	chosen: a) written exam f one candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat						
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	mmes)		
Modul	e appea	ars in				
		ee (1 major) Biology (:	2011)			
Master	's degr	ee (1 major) Biology (2010)			
Master	's degr	ee (1 major) Biology (:	2014)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 44 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	title				Abbreviation	
Cell- an	d Deve	elopmental Biology Mast	ter 2 (Lecture and Ser	minar 2)	07-MS2ZE2-102-mc)1
Module	e coord	inator		Module offered by	d by	
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	- Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	Duration Module level Other pr					
1 seme	ster	graduate				
Conten	ts					
nar Ente gy). The book ki velopm sequen ders?: (generat genetic nism for ages nes and cussed	wicklur e lectur nowled ental b ces of Dpport te Dis s Me Develo s. In the from a	le comprises the lecture agsbiologie-Meilensteine re Signale und Differenzie ge to students. It will rat biology. Topics covered in multicellularity Sex: M unities and limitations of sasters: What do we actu taorganisms: We are new pmental biology of beha e seminar Entwicklungsb ok), classical ground-bre n unusual point of view.	e und Perspektiven (Nerung (Signals and Di her introduce studen in the lecture (subject ore than just ? + ? = f stem cell research ally know about meta ver alone Developm wiour: Everything is le biologie-Meilensteine	Ailestones and Persp ifferentiation) is not ts to particularly inter to change): - Cooper On the move: Morph Growing new hearts amorphoses? - Alway ent in changing envi earned. Or isn't it? - E und Perspektiven (D	ectives of Developme designed to merely i resting and current f ration: Development hogenetic migration ?: Animals and their vs the same?: Plastic ronments: Ecology a Evo-devo: A fad? No, vevelopmental Biolog	ental Biolo- mpart text- topics in de- and con- All-roun- ability to re- ity and epi- ind polyphe- been around gy - Milesto-
				la avila y biala airal yy		
		ossess a knowledge of t d are able to put this into				
Course	S (type, n	umber of weekly contact hours,	language — if other than Ger	rman)		
S + V (n	o infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
one of t questio	the foll ons) or	be informed about the m owing options will be ch b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam 1e candidate each (30	ination (30 to 60 mi	nutes, including mul	ltiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
 Warkia						
Worklo	<u>ao</u>					
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)		
Module	e appea	irs in				
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	o)			
Master's wi	th 1 majoı	r Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 45 / 292





Master's degree (1 major) Biology (2014)

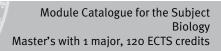
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 46 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation	
Cell- ar	nd Deve	elopmental Biology Pr	actical Course and Sem	inar 1	07-MS2ZEF1-102-m	01
Module	e coord	inator		Module offered by		
holder logy	of the (Chair of Cell Biology a	nd Developmental Bio-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10		rical grade		• • • •		
Duratio	on	Module level	Other prerequisites	;		
1 seme	ster	graduate		pletion of the respe	regular attendance c ctive exercises as sp	
Conten	ts					
red tec develop se, stud	hnolog pmenta dents a	ical skills to analyse in Il biology for medicine cquire sustained insig	ntly design and perform mportant basic biologic and the economy is hig ghts into current researc post-docs, gain first-har	al processes. In add ghlighted. During the h activities of the Ch	ition, the importance fifth and final week nair and, interacting	e of cell and of the cour-
Intende	ed lear	ning outcomes				
to perfo code of Course S + P (r Method module is Studen followin or b) lo	orm and f scient S (type, r to infor d of ass s creditab tts will ng opti g (appl	d document cell and d ific practice. number of weekly contact hou mation on SWS (week cessment (type, scope, lan le for bonus) be informed about the ons will be chosen: a) rox. 10 to 30 pages) or	nt acquired methodolog evelopmental biology-re- irs, language — if other than Ge ly contact hours) and co guage — if other than German, e length and scope of the written examination (30 c) oral examination of co idates (approx. 30 to 60	elated experiments, rman) ourse language avail examination offered — if n e assessment prior t o to 60 minutes, incl one candidate each	adhering to a genera able) ot every semester, informat o the course. Usually uding multiple choic (30 to 60 minutes) of	ion on whether y, one of the e questions) r d) oral ex-
Allocat						indicesy
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regula	tions for teaching-degree progra	ammes)		
Module	e appea	in and a statement of the statement of t				
Master	's degr	ee (1 major) Biology (2 ee (1 major) Biology (2 ee (1 major) Biology (2	2010)			
Master's wi	ith 1 majo	r Biology (2014)		ırg ● generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 47 / 292

Modul	e title				Abbreviation
Cell- a	nd Dev	elopmental Biology Pract	tical Course and Sem	inar 2	07-MS2ZEF2-102-m01
Modul	e coord	linator		Module offered by	
holder logy	ofthe	Chair of Cell Biology and	Developmental Bio-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
15	(not)	successfully completed			
Durati	on	Module level	Other prerequisites		
1 seme	ester	graduate		pletion of the respe	regular attendance of lab course ctive exercises as specified at the
Conter	nts				
text of luated as the	current on the impact	t research projects in the basis of the results obtain on the research project a	field of cell and deve ined and modified wh	lopmental biology. The necessary. The	esigned experiments in the con- The techniques applied are eva- results of all experiments as well s report seminar within the team.
Intend	ed lear	ning outcomes			
tal bio	logy an	d to modify them accordi	ng to the outcome. Th	ney are able to indep	e fields of cell and developmen- pendently approach current scien cepted rules of scientific practice
Course	es (type, 1	number of weekly contact hours,	anguage — if other than Ger	rman)	
S + P (no info	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
		s essment (type, scope, langua ble for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ing opti og (app	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	tion of	places			
			.		
Additio	onal inf	ormation			
			<u>.</u>		
Worklo	oad				
Teachi	ng cycl	e			
	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
Referre					
Referre					
 Modul	e appea	ars in			
 Modul Master	e appe a r's degr		1)		

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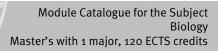




Microbiology (30 ECTS credits)

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	title				Abbreviation	
Molecu	lar Bio	logy (Lecture)			07-MS2-102-m01	
Module	e coord	inator		Module offered by	ule offered by	
Bioinfo	rmatics	Chair of Microbiology, h 5, holder of the Chair of Biology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts		-			
Develo cular bi book "E karyotic cells in quarter molecu Biology of the c nology time). T prokary on mac cell div cation t nisms (pmenta ology f Essenti c cell a additio of the lar biol ther the (time c other th (time c hinery, ision a mechan (Brock)		y, Biophysics and Bioir if these different discip ction on cell biology (a the vast diversity in st ciples of modern molec ge amount of examples formatic tools. We clos useful examples for th bioinformatics essenti ments can be planned op. a quarter of the lect e the organisation of th tion of gene expression erial motility and chem	formatics and deals lines. Participants and pp. a quarter of the l ructure and function cular cell biology. The for applications whi hely adhere to the con- te application of our ally is molecular biol more easily and thus ture) deals with fund he bacterial genome, n, transport of small notaxis, signal transd	with concepts of mo re recommended to r ecture) mainly discu of molecules, organ e bioinformatics sect ch allow the investig ntents of the book "E tools when working ogy based on compu- s bioinformatics save amental molecular a the transcription an molecules and macr luction and bacterial	odern mole- read the text- sses the eu- telles and tion (app. a gation of the Essential Cell on the topics uting tech- es precious aspects of d translati- romolecules, l communi-
		ning outcomes				
-		nowledge about the m		· · ·	aryotic cell.	
		umber of weekly contact hour			<u></u>	
Method	l of ass	ion on SWS (weekly co sessment (type, scope, lang			-	on on whether
Studen one of t questic	ts will I the foll ons) or	le for bonus) be informed about the owing options will be c b) oral examination of lates (approx. 30 to 60	hosen: a) written exam one candidate each (30	ination (30 to 60 mi	nutes, including mul	tiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Master's wi	th 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 50 / 292



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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation
Microbi	iology	(Practical Course and Se	minar 1)		07-MS2MF1-102-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
interact lecular	ions w biology	ith the host. Participants	will employ a variety ogy, and immunology	of state-of-the-art m as well as data anal	h microbial pathogens and their nethods within the fields of mo- lysis and literature search techni- presentation.
Intende	ed leari	ning outcomes			
		•	, ,	•	s in molecular biology and infecti- s of good scientific practice.
Courses	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + P (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	ins in			
		ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010			
waster	s aegr	ee (1 major) Biology (2014	4)		

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Microb	iology	(Practical Course and Se	minar 2)		07-MS2MF2-102-m01
Module	e coord	inator		Module offered by	
holder of the Chair of Microbiology				Faculty of Biology	
ECTS Method of grading Only after succ. compl. of module(s)					
15 (not) successfully completed					
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate		pletion of the respec	regular attendance of lab course ctive exercises as specified at the
Conten	ts		·		
ding to paper o Intende The par biology	the propriet of an or ed lear ticipar	oject requirements. Progr al presentation. ning outcomes nts will acquire the skills	ess of the research p to independently per	roject will be reporte	ogy and molecular biology accor- ed in a seminar paper, a research on microbiology and infection ocument, interpret and present
Course	S (type, r	number of weekly contact hours, l			
		mation on SWS (weekly o			
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
followiı or b) lo	ng opti g (appi	ons will be chosen: a) wr œx. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, incluine candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat				· · · ·	
Additio	nal inf	ormation			
Worklo	ad				
Teachiı	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation					Abbreviation	
Microbi	ology	1 (Lecture and Seminar)			07-MS2M1-112-m01	
Module	coord	inator		Module offered by		
holder	of the O	Chair of Microbiology		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
al patho	ogenici				adherence and invasion, bacteri- id pathogen interference, current	
Intende	d learr	ning outcomes				
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,	
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)		
V + S (n	o infor	mation on SWS (weekly c	ontact hours) and co	ourse language availa	able)	
		essment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	he foll ns) or l	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocati	ion of p	olaces				
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.	
Additio	nal inf	ormation				
Worklo	ad					
Teachin	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	appea	ars in				
	-	ee (1 major) Biochemistry				
	0	ee (1 major) Biology (2011				
Master'	s degre	ee (1 major) Biology (2012	t)			

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Microbiology 2 (Lecture and Seminar)o7-MS2M2-112-mo1Module offered byhold = vert is of MicrobiologyFaculty of BiologyFaculty of BiologyECTSMethod f gradingOnly after succ. com L. of module(s)ECTSModule levelOnly after succ. com L. of module(s)10numerical gradeContent:Stude levelOther prerequisitesI semezical gradeContent:Fundametical levelOther prerequisites colspan="2">Fundametical levelOther prerequisites colspan="2">Content:Content:Fundametical levelFundametical level of the mode of action of microbial pathogenicity factors will be presented using selected provaryotic and eukaryotic pathogens as model organizes. In addition, current research methods in infection on biology and pathogenicity research and the mechanisms behind infectious diseases.Course:Course:Course:V + S (ropen colspan="2">						
holder of the Chair of Microbiology Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selec- ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infecti- on biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infecti- on biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
 V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, 						
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually,						
questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocation of places						
Biology Master's: no restrictions. Biochemistry Master's: 15 places. Places will be allocated by lot.						
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biochemistry (2012)						
Master's degree (1 major) Biology (2011)						
Master's degree (1 major) Biology (2014)						

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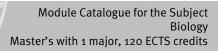


Cellular and Molecular Biotechnology

(30 ECTS credits)

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Module title Abbreviation						
Molecu	Molecular Biology (Lecture) 07-MS2-102-m01					
Module	coord	nator		Module offered by		
holder of the Chair of Microbiology, holder of the Chair of Bioinformatics, holder of the Chair of Cell Biology and D velopmental Biology, Prof. Dr. M. Sauer				Faculty of Biology		
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)		
10	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
Develop cular bio book "E karyotic cells in quarter molecul Biology of the o nology (time). T prokary on macl cell divi cation m nisms (Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern mole- cular biology from the point of view of these different disciplines. Participants are recommended to read the text- book "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eu- karyotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing tech- nology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translati- on machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communi- cation mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorga- nisms (Brock).					
		ning outcomes				
Master level knowledge about the molecular biology of the eukaryotic and prokaryotic cell.						
		umber of weekly contact hours			<u></u>	
Method	of ass	ion on SWS (weekly co essment (type, scope, lang le for bonus)				on on whether
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocati	on of p	laces				
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Master's wit	th 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 57 / 292



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Module	Abbreviation					
Biophy	sics an	d Molecular Biotechnolo	gy (Lecture and Semi	inar)	07-MS2BT-102-m01	
Module coordinator				Module offered by		
holder	of the C	Chair of Biotechnology an	d Biophysics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
ture dis moves single r	cusses on to d nolecu ogy, io	fundamental aspects of iscuss biophysical metho les. Focus is on electroman n channels, protein foldin	thermodynamics, kin ods that facilitate the anipulation and diele	netics and molecular investigation of ind ectric spectroscopy of	ications. The first part of the lec- r interactions. The course then ividual cells down to the level of of cells, biomembranes, electro- s and high-resolution as well as	
Intende	d learn	ning outcomes				
enable	them t		elevant literature. In a	addition, they will ha	and their applications that will ave become acquainted with - or, hysical mechanisms.	
Course	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)		
V + S (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocati						
Biocher	nistry l	Master's: 4 places. Places	s will be allocated by	lot.		
Additio	nal info	ormation				
Worklo	ad					
Teachir	ig cycl	9				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	appea	irs in				
Master' Master' Master'	Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)					

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Module	Module title Abbreviation					
Biophy	sics an	d Biochemistry			07-MS3BB-102-m01	
Module coordinator				Module offered by		
holder	of the C	hair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS	Metho	d of grading	Only after succ. com	pl. of module(s)		
10	nume	ical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
and bio of parti opportu	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	ith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.	
		ning outcomes				
sics, sti	ructura		•	•	roteins in the fields of biophy- l to discuss the results within the	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the follons) or l	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	laces				
Additio	nal info	ormation				
Worklo	ad					
Teachir	ng cycl	9				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	Module appears in					
	-	ee (1 major) Biology (2011	-			
	-	ee (1 major) Biology (2010				
Master's degree (1 major) Biology (2014)						

Module	title			Abbreviation			
Bioinfo	rmatic	s (Lecture and Seminar)			07-MS2BI-102-m01		
Module coordinator				Module offered by			
holder	of the C	Chair of Bioinformatics	_	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	ts						
and sec	quence		ns and protein familie	es, large-scale data a	is includes results from genome analysis (e. g. net generation se- lncRNAs).		
Intende	ed learn	ning outcomes					
		cent results in bioinform al technologies and resea			advanced (Master) level know-		
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)		
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether		
one of t questio	the follons) or l	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of		
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
Teachir	ng cycl	e					
Referred to in LPO I (examination regulations for teaching-degree programmes)							
Module appears in							
	-	ee (1 major) Biochemistry					
	-	ee (1 major) Biology (2013					
	Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)						
	-	ee (1 major) Mathematics					
	-	ee (1 major) Computation		2)			

Module	e title			Abbreviation			
Biophy	sics an	d Molecular Biotechnolo	ogy (Practical Course	and Seminar 1)	07-MS2BTF1-102-m01		
Module	e coord	inator		Module offered by	,		
holder	of the (Chair of Biotechnology a	nd Biophysics	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)			
10	nume	rical grade					
Duratio	on	Module level	Other prerequisites	sites			
1 seme	ster	graduate					
Contents							
method and mo tion flu	ds. Und bleculat oresce	er expert guidance, stud r biotechnology, nano an nce microscopy, fluoresc	ents will perform sele d microsystems biote	ected experiments c echnology, biomate	logical and biophysical topics and on the following topics: cellular rials and biosensors, high-resolu- manipulation of cells.		
Intend	ed lear	ning outcomes					
applications that will enable them to independently review relevant literature. In addition, they will have become acquainted with - or, where necessary, will be able to independently acquaint themselves with - biophysical me- chanisms. Students will have acquired practical experience performing experiments, using a variety of scientific tools. In the seminar, students will have acquired detailed theoretical knowledge on these experiments and will have delivered a short presentation (15 minutes) on one of the experiments they performed.							
Course	S (type, r	number of weekly contact hours,	language — if other than Gei	rman)			
S + P (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avai	lable)		
		sessment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if n	ot every semester, information on whether		
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, inc one candidate each	to the course. Usually, one of the luding multiple choice questions) (30 to 60 minutes) or d) oral ex- sentation (20 to 45 minutes)		
Allocat							
Additio	nal inf	ormation					
Workla	ad						
Teachi	ng cycl	e					
	- /						
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	ammes)			
	-	-					
Module	e appea	urs in					
		ee (1 major) Biology (201	1)				
	-	ee (1 major) Biology (201					
Master	Master's degree (1 major) Biology (2014)						

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Module	title				Abbreviation	
Biophy	sics an	d Molecular Biotechnol	ogy (Practical Course	e and Seminar 2)	07-MS2BTF2-102-m	101
Module	coord	inator		Module offered by		
holder	of the (Chair of Biotechnology a	nd Biophysics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. co	mpl. of module(s)		
15	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	5		
1 seme	ster	graduate		isite to assessment: npletion of the respe ourse.	-	
Conten	ts					
followin biosens tion of and ins dently of	ng topi sors, hi cells. P trumer on curr	oratory research. Under cs: cellular and molecula gh-resolution fluorescer erforming experiments u nts. Over the duration of ent research topics. Wor select a topic for their B	ar biotechnology, nar nce microscopy, fluor inder expert guidanc the course, students k on current research	no and microsystems rescence spectroscop e, students will beco will then be required	biotechnology, bior by, analysis and elec me acquainted with d to work increasingl	naterials and tromanipula- techniques y indepen-
		ning outcomes				
develop theoret Course S + P (n Method module is Studen followin or b) log	o a qua ical kno s (type, r o infor d of ass creditab ts will l ng optio g (appr	ole to independently wor ntitative understanding owledge on experiments number of weekly contact hours, mation on SWS (weekly sessment (type, scope, langua le for bonus) the informed about the le ons will be chosen: a) will fox. 10 to 30 pages) or c) groups of up to 3 candida	of biophysical mech and will give short p language — if other than Ge contact hours) and c age — if other than German, angth and scope of the ritten examination (3 oral examination of	anisms. In the semin presentations on exp erman) ourse language avail examination offered — if n re assessment prior t o to 60 minutes, incl one candidate each	ar, students will acq eriments performed. able) ot every semester, informat to the course. Usuall uding multiple choic (30 to 60 minutes) o	uire further ion on whether y, one of the ce questions) r d) oral ex-
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	is for teaching-degree progr	ammes)		
Module	appea	ars in				
Master'	s degr	ee (1 major) Biology (201 ee (1 major) Biology (201 ee (1 major) Biology (201	.o)			
Master's wi	th 1 majoi	Biology (2014)		urg • generated 26-Aug-2024 cord Master (120 ECTS) Biolog		page 63 / 292



Bioinformatics

(30 ECTS credits)

Students who selected this subject area must take module o7-MS2BI. The second theoretical module in this subject area may be selected from the list below.

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	reg. data record Master (120 ECTS) Biologie - 2014	1

Biolio I i i i i i i i i i i i i i i i i i i	Module title			Abbreviation			
holder of the Chair of Bioinformatics Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade - Duration Module level Other prerequisites 1 semester graduate - Contents - - Advances and current results of bioinformatics are explained and discussed, this includes results from genome and sequence analysis, protein domains and protein families, large-scale data analysis (e. g. net generation sequences, proteomics data), analysis of different functional RNAs (e. g. miRNAs, IncRNAs). Intended learning outcomes - Understand recent results in bioinformatics. Discuss their implications. Have an advanced (Master) level know-ledge of typical technologies and research questions in bioinformatics. Courses (type, number of weekly contact hours, language – if other than German) S S + V (no information on SWS (weekly contact hours) and course language available) Method of assessment rigo. Scope, language – if other than German) S to reditable for bonus) S Students will be chosen: a) written examination offored – if not every senseter, information on of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) Allocations - - - Morkload -	Bioinfo	rmatic	s (Lecture and Seminar)			07-MS2BI-102-m01	
ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Advances and current results of bioinformatics are explained and discussed, this includes results from genome and sequence analysis, protein domains and protein families, large-scale data analysis (e. g. net generation sequences, proteomics data), analysis of different functional RNAs (e. g. miRNAs, lncRNAs). Intended learning outcomes Understand recent results in bioinformatics. Discuss their implications. Have an advanced (Master) level know-ledge of typical technologies and research questions in bioinformatics. Courses (type, number of weekly contact hours, language – if other than German) S + V (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German) S to chaits will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination offered – if not every semester, information in groups of up to 3 candidates (approx. 30 to 60 minutes) Atlocation of places More to the IPO I (examination regulations for teaching-degree programmes) <td>Module</td> <td>coord</td> <td>inator</td> <td></td> <td>Module offered by</td> <td></td>	Module	coord	inator		Module offered by		
10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Advances and current results of bioinformatics are explained and discussed, this includes results from genome and sequence analysis, protein domains and protein families, large-scale data analysis (e. g. net generation sequences, proteomics data), analysis of different functional RNAs (e. g. miRNAs, IncRNAs). Intended learning outcomes Understand recent results in bioinformatics. Discuss their implications. Have an advanced (Master) level know-ledge of typical technologies and research questions in bioinformatics. Courses (type, number of weekly contact hours, language – if other than German) S S + V (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every senester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) Allocation of places Mokula appears in Module appears in <t< td=""><td>holder</td><td>of the (</td><td>Chair of Bioinformatics</td><td></td><td>Faculty of Biology</td><td></td></t<>	holder	of the (Chair of Bioinformatics		Faculty of Biology		
Duration Module level Other prerequisites 1 semester graduate	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
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module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) Allocation of places Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2014) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)	S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
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Additional information Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Biology (2014) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)	one of t questio	he foll ns) or	owing options will be cho b) oral examination of on	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nutes, including multiple choice	
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)	Allocat	ion of p	olaces				
Workload Teaching cycle Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)							
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 Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012) 	Worklo	ad					
 Referred to in LPO I (examination regulations for teaching-degree programmes) Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012) 							
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Module appears in Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)							
Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)							
Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)	Module appears in						
Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012)							
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Master's degree (1 major) Mathematics (2012)							
		-		•			
		-			2)		

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Module title			Abbreviation		
Neurob	Neurobiology, Behavior and Animal Ecology (Lecture)				07-MS1-102-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Neurobiology and	Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
It will p	rovide	students with insights in	to these fields, helpi	ng them select their	hysiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.
Intende	ed lear	ning outcomes			
		o know the advantages o relate and integrate differ			g complex biological systems.
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available)
		s essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (2011			
		ee (1 major) Biology (2010			
Master's degree (1 major) Biology (2014)					

Module title			Abbreviation			
Molecular and Clinical Neurobiology (Lecture and Seminar)			ecture and Seminar)		07-MS1N-102-m01	
Module	coord	inator		Module offered by		
Prof. Dr	. M. Se	ndtner		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10		rical grade				
Duratio		Module level	Other prerequisites			
1 seme		graduate				
Conten						
nervous thies - s the hun Parkins ry, ante vision, cription lecture Fridays module Intende Theoret ses.	s system synapse nan mo on - mo rograd disease o f this Molecu 8-9 a. es sepa ed learr tical fou	m, properties of neurons es, transmitter release, n otor system, spinal reflexe uscles and muscle diseas e amnesia, visual agnosi es of the visual system; R course is also available ular and Clinical Neurobio m.) together form one the rately and have them cre	and glial cells - ion c euromuscular end pl es, motor neuron dise ses - somatosensory a - cortex, Morbus Al Reading: Kandel, Prin- at http://neurobiolo ology (incl. seminar) a eoretical module (10 l dited within the area nd clinical neurobiolo	hannels and excitab ate, Myasthenia grav eases - cerebellum, a system and pain - hi zheimer - sleep, EEG ciples of Neural Scie gie.uk-wuerzburg.de and <i>Neuroentwicklur</i> ECTS). However, you of mandatory electiv	<i>linical Neurobiology</i>) - cells of the ility of membranes, channelopa- vis - motor activity, anatomy of ataxia and basal ganglia, Morbus ppocampus, learning and memo- , epilepsy - sensory physiology, ence, 4th Edition: A detailed des- e/lehrveranstaltungen.html. The <i>ngsbiologie (Neurodevelopment</i> ; may also complete these two ves 2.	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
module is Studen	creditab ts will b	le for bonus) De informed about the me	ethod, length and sco	ope of the assessme	nt prior to the course. Usually, nut prior to the course usually,	
questio	ns) or l		e candidate each (30) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010)					
	-	ee (1 major) Biology (2014				

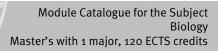
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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title			Abbreviation			
Animal Ecology and Tropical Biology (Lecture and Seminar)				07-MS1TÖ-102-m01		
Module	coord	inator		Module offered by		
holder	of the C	Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
current tions ar	issues nd fooc . In the	in animal ecology. Focus I nets, evolutionary ecolo	s will be on biodiversi gy, chemical ecology	ty and ecosystem fu , tropical ecology, a	of the theoretical foundations and Inctions, multi-trophic interac- gricultural ecology, and global ed above will be presented and	
Intende	ed learr	ning outcomes				
of anim	al ecol		interpret scientific pu		rrent research issues in the field y the acquired knowledge to the	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		e essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal infe	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010				
master	Master's degree (1 major) Biology (2014)					

Module title			Abbreviation			
Communication Biology (Lecture)				07-MS1K-102-m01		
Module	e coord	inator		Module offered by		
holder logy	of the (Chair of Behavioral Physic	ology and Sociobio-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	Its					
used b semina	y anima ar sessi	als, but also highlight ada	aptive values and evo	olutionary aspects of	ent communication channels ^F animal signalling. In a follow-up ssing current papers related to	
Intend	ed lear	ning outcomes				
learneo logical	d to cor conditi	nnect findings from differe	ent research areas, si ore complete picture	uch as physiology, n of a topic. In additio	blex issues in biology. They have eurobiology, behaviour and eco- n, students have learned to pre- nework.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (1	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
followi or b) lo	ng opti og (appi	ons will be chosen: a) wri rox. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of j	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010				
master	Master's degree (1 major) Biology (2014)					

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 69 / 292
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Module title			Abbreviation			
Molecular Biology (Lecture)			07-MS2-102-m01			
Module	coord	nator		Module offered by		
Bioinfor	rmatics	Chair of Microbiology, h , holder of the Chair of iology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	Metho	d of grading	Only after succ. con	npl. of module(s)		
10	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
Develop cular bio book "E karyotic cells in quarter molecul Biology of the o nology (time). T prokary on macl cell divi cation m nisms (Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern molecular biology from the point of view of these different disciplines. Participants are recommended to read the textbook "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eukaryotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing technology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translation machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communication mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorga-					
		ning outcomes				
_		nowledge about the m		<i>,</i> ,	aryotic cell.	
		umber of weekly contact hour			<u> </u>	
Method	of ass	ion on SWS (weekly co essment (type, scope, lang le for bonus)				on on whether
Student one of t questio	ts will b he follo ns) or l	pe informed about the pwing options will be c p) oral examination of ates (approx. 30 to 60	hosen: a) written exam one candidate each (30	ination (30 to 60 mi	nutes, including mul	tiple choice
Allocati	on of p	laces				
	•					
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Master's wit	th 1 major	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 70 / 292



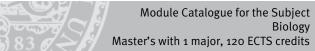
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 71 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation	
Cell- and Developmental Biology Master 1 (Lecture and Seminar 1)				ninar 1)	07-MS2ZE1-102-m01	
Module coordinator				Module offered by	I	
holder of the Chair of Cell Biology and Dev logy		nd Developmental Bio-	Faculty of Biology			
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conten	nts		•			
<i>und Pe</i> cell and lic disc	e <i>rspekti</i> d unrav orders a	ven (Milestones and I vels their biological ca and cancer. In the sen	Perspectives of Cell Biolo auses and consequences	gy). The lecture deso , such as infection, spectives of Cell Biol	nar <i>Zellbiologie-Meilensteine</i> cribes pathological states of the apoptosis, senescence, metabo- <i>logy</i> , classic ground-breaking pu- N.	
Intend	ed lear	ning outcomes				
		ossess scientific bac biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade	
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	rman)		
S + V (r	no infoi	rmation on SWS (wee	kly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether	
one of questic	the foll ons) or	owing options will be	chosen: a) written exam f one candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat						
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
	- /					
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	mmes)		
Module	e appea	ars in				
		ee (1 major) Biology (2011)			
	Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)					
master	Jucsi	ee (1 major) biology (2010)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 72 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation	
Cell- an	d Deve	elopmental Biology Mast	er 2 (Lecture and Ser	ninar 2)	07-MS2ZE2-102-mc	01
Module	e coord	inator		Module offered by		
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	Faculty of Biology		
ECTS	ECTS Method of grading Only after succ. compl. of module(s)					
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	emester graduate					
Conten	ts		-			
nar Ente gy). The book ki velopm sequen ders?: (generat genetic nism for ages nes and cussed Intende	wicklur e lectur nowled ental b ices of Opporte te Dis s Me Develo s. In the d Outlo from a ed learn pants p	the comprises the lecture and a spinologie-Meilensteine are Signale und Differenzie ge to students. It will rat viology. Topics covered in multicellularity Sex: Me unities and limitations of sasters: What do we actur taorganisms: We are new pmental biology of beha e seminar Entwicklungsb ok), classical ground-bre n unusual point of view. hing outcomes ossess a knowledge of the d are able to put this into	e und Perspektiven (Werung (Signals and Di her introduce studem in the lecture (subject ore than just ? + ? = f stem cell research ally know about meta ver alone Developm viour: Everything is le <i>viologie-Meilensteine</i> eaking scientific articl	filestones and Persp ifferentiation) is not of ts to particularly inter to change): - Cooper On the move: Morph Growing new hearts amorphoses? - Alway ent in changing envi earned. Or isn't it? - E und Perspektiven (D es in the field of dev	ectives of Development designed to merely i resting and current ation: Development nogenetic migration ?: Animals and their rs the same?: Plastic ronments: Ecology a Evo-devo: A fad? No, evelopmental Biology elopmental biology	ental Biolo- mpart text- topics in de- and con- All-roun- ability to re- ity and epi- ind polyphe- been around gy - Milesto- will be dis- developmen-
		umber of weekly contact hours,		•		
		mation on SWS (weekly			able)	
		essment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
one of t questio	the foll ons) or	be informed about the m owing options will be cho b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ins in				
	-	ee (1 major) Biology (201 ee (1 major) Biology (201				
Master's wi	th 1 majoı	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 73 / 292





Master's degree (1 major) Biology (2014)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 74 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	title				Abbreviation
Microbi	Microbiology 1 (Lecture and Seminar) 07-MS2M1-112-m01				
Module	coord	inator		Module offered by	
holder	of the O	Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Content	ts				
al patho	ogenici				adherence and invasion, bacteri- id pathogen interference, current
Intende	d learr	ning outcomes			
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)	
V + S (n	o infor	mation on SWS (weekly c	ontact hours) and co	ourse language availa	able)
		essment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or l	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.
Additio	nal inf	ormation			
Worklo	ad				
Teachin	ng cycl	e			
Referre	d to in	LPO I (examination regulations	for teaching-degree progra	mmes)	
Module	appea	ars in			
	-	ee (1 major) Biochemistry			
	0	ee (1 major) Biology (2011			
Master'	s degre	ee (1 major) Biology (2012	t)		

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reg. data record Master (120 ECTS) Biologie - 2014	
reg. data record Master (120 ECTS) Biologie - 2014	

Microbiology 2 (Lecture and Seminar) 07-MS2M2-112-m01							
Microbiology 2 (Lecture and Seminar) 07-MS2M2-112-m01							
Module coordinator Module offered by							
holder of the Chair of Microbiology Faculty of Biology							
ECTS Method of grading Only after succ. compl. of module(s)							
10 numerical grade							
Duration Module level Other prerequisites							
1 semester graduate							
Contents							
Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in on biology will be presented.							
Intended learning outcomes							
Students have gained fundamental knowledge in infection biology and pathogenicity research and the r nisms behind infectious diseases.	necha-						
Courses (type, number of weekly contact hours, language — if other than German)							
V + S (no information on SWS (weekly contact hours) and course language available)							
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information or module is creditable for bonus)	whether						
Students will be informed about the method, length and scope of the assessment prior to the course. Us one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in gro up to 3 candidates (approx. 30 to 60 minutes)	choice						
Allocation of places							
Biology Master's: no restrictions. Biochemistry Master's: 15 places. Places will be allocated by lot.							
Additional information							
Workload							
Teaching cycle							
Referred to in LPO I (examination regulations for teaching-degree programmes)	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in							
Master's degree (1 major) Biochemistry (2012)							
Master's degree (1 major) Biology (2011)							
Master's degree (1 major) Biology (2014)							

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 76 / 292
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Module	e title				Abbreviation	
Immun	Immunology 1 (Lecture and Seminar) 07-MS2IM1-102-m01					
Module	e coord	inator	Module offered by			
Managi biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
www.vi	rologie				ormation is available at http:// ka/immunologie/immunolo-	
Intende	ed lear	ning outcomes				
		gain knowledge about, a llular immunology.	nd will be able to pre	sent and discuss ba	sic concepts and methods in mo-	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
followin or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
			5 			
Module	e appea	urs in				
Master	's degr	ee (1 major) Biology (201	1)			
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 77 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation	
Immun	ology	2 (Lecture and Seminar)			07-MS2IM2-102-m01	
Modul	e coord	inator		Module offered by		
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	Its		·			
as auto the im	oimmur mune s	nity and immunomodulat ystem, infection immuno	ion, development of		ected immunology chapters, such immunogenetics, evolution of	
		ning outcomes		1. 1		
		able to understand currer			iese in detail.	
	_	number of weekly contact hours, l			11.)	
		mation on SWS (weekly o				
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
	1					
Teachi	ng cycl	е				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ars in				
	0	ee (1 major) Biology (201				
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 78 / 292
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Module	e title				Abbreviation	
Virolog	y 1 (Le	cture and Seminar)		07-MS2V1-102-m01		
Module	e coord	inator		Module offered by	1	
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.	
Intend	ed lear	ning outcomes				
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.	
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)		
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	onal inf	ormation				
	_					
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ars in				
Master	's degr	ee (1 major) Biology (201	1)			
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

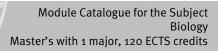
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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Virolog	y 2 (Le	cture and Seminar)			07-MS2V2-102-m01
Module	Module coordinator			Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	y after succ. compl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 80 / 292
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Module	e title				Abbreviation	
Human	Human Genetics (Lecture and Seminar) 07-MS2HG-102-m01					
Module	e coord	inator		Module offered by		
Manag	ing Dire	ector of the Institute of Hu	uman Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
2 seme	ester	graduate				
Conten	ts					
This mo	odule w	vill discuss current topics	in human genetics.			
Intende	ed leari	ning outcomes				
Studen depth.	ts will I	nave gained the ability to	understand current i	issues in human gen	etics and to discuss these in	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	onal info	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	irs in				
Master	's degr	ee (1 major) Biology (2013	1)			
	-	ee (1 major) Biology (2010				
Master	's degr	ee (1 major) Biology (2014	4)			

Modul	e title				Abbreviation	
Curren	t Meth	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Modul	e coord	inator		Module offered by		
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS	Methe	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Durati	on	Module level	Other prerequisites	i		
1 seme	ester	graduate				
Conter	nts					
tegies discus sion ar milarit actions of strat tes: Se and ar as spe import ve bee drugs v (evider discus Intend	of the p sed. Th nd activ ies betw s and m tegies i condar e often cific de ant clas n devel with im nce-bas sed. ed lear	ween plants and pathogo pathogens - bacteria, fung e molecular mechanisms vation of local and system ween plant and human in polecular mechanisms de n plant protection. Evolut y metabolites are part of essential for survival. The fence strategies will be e sses of plant bioactive co oped from plant seconda proved pharmaceutical p sed medicine) as well as p ning outcomes	gi and viruses - as we of pathogen recogni- nic defence response nune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second xplained. Pharmacol- mpounds will be pre- try metabolites that h roperties. Examples of cossibilities and limi-	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Under lity and defence is fu armaceutical relevar ce strategies against lary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver tations of phytothera entific laboratory wo	nisms of the host pl ction, regulation of g this lecture. Differen erstanding plant-path andamental for the c nce of plant seconda t microorganisms an be discussed and g of action and molecu- ortion of currently us ead structures to gen y potent plant pharm apy (traditional med	ants will be gene expres- ices and si- nogen-inter- levelopment ary metaboli- ind herbivores eneral as wel ular targets of sed drugs ha- ierate potent naceuticals icine) will be
for the	ir thesis			· · · ·	d to work on a scien	tific question
		number of weekly contact hours, I tion on SWS (weekly cont			2)	
Metho	d of as	sessment (type, scope, langua ble for bonus)				ion on whether
one of questi	the foll ons) or	be informed about the m owing options will be cho b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ie candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	tion of _l	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)		
		·	·			
Master's w	ith 1 majo	r Biology (2014)		irg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 82 / 292
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Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Pharmacy (2012)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 83 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Develo	pmenta	al Physiology and Adapti	on of Plants (Lecture	and Seminar)	07-MS3PA-102-m01
Module	e coord	inator		Module offered b	y
holder of the Chair of Pharmaceutical Biology			Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts		•		
the mo regulat Section grow a mental and org Based more d Würzbu Intende	lecular ion and Adapt nd deve factors ganism on sele etail. It urg. ed learn	components (ABA, auxin d functioning. Current jou cation: The lecture will de elop (biogeography, biod s (e. g. plant-insect, plant ic level will be emphasise cted examples from curre will be complemented b	n, ethylene etc.) of sig irnal articles on the to al with the ecologica liversity) and with the t-fungus interactions) ed in particular (stres ent research, the sem y topic-related guideo	nalling networks a opics will be presen l and environmenta interactions of pla . The evolutionary s and defence reac ninar will address t d tours in the Bota	l focus on introducing students to nd explaining their biosynthesis, nted and discussed in the seminar. al constraints under which plants ants with abiotic and biotic environ adaptations on the physiological ctions, carnivory, plant protection). he topics covered in the lecture in nical Garden of the University of are able to interpret and discuss
these r	elation	s in the context of the cu	rrent state of knowled	dge.	
Course	S (type, r	number of weekly contact hours, l	language — if other than Ger	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language ava	ilable)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if	not every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 n	nent prior to the course. Usually, ninutes, including multiple choice c) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
			-		
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			00 p/05/0	/	
Module		urs in			
		ee (1 major) Biology (201:			
Master			1)		
		ee (1 major) Biology (201)			

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Module	title				Abbreviation	
Biophy	Biophysics and Biochemistry 07-MS3BB-102-m01					
Module	coord	inator		Module offered by		
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10 numerical grade						
Duration Module level Other prerequisites						
1 semester graduate						
Conten	ts					
and bio of parti opportu	ochemi cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number currently used give students an research.	
· · · · · · · · · · · · · · · · · · ·		ning outcomes				
sics, sti	ructura				roteins in the fields of biophy- l to discuss the results within the	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	9				
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)		
Module						
	-	ee (1 major) Biology (2013				
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2010				
musici	Aaster's degree (1 major) Biology (2014)					

Module	title				Abbreviation
Respon	ise tow	ards Biotic and Abiotic F	actors		07-MS3BA-102-m01
Module coordinator Module offered by					
holder	holder of the Chair of Pharmaceutical Biology			Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	i semester graduate				
Conten	ts				
Plant re zymes a lerance and sig	espons and the . The le nal tra	es to these external facto e levels of a variety of me ecture and seminar will n	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants
Intende	ed lear	ning outcomes			
		able to understand the in pic in the context of the s	•		ment on a molecular level and to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module					
	0	ee (1 major) Biology (2013	·		
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			
master	5 uegl	ee (1 111ajoi) biology (2017	ا		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 86 / 292
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Module	title				Abbreviation	
System	Biolog	gy (Lecture and Seminar)			07-MS3S-102-m01	
Module coordinator Module offered by						
holder	of the (Chair of Bioinformatics		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
sults fro	om fun				nd discussed, this includes re- ind metabolic networks as well	
Intende	ed leari	ning outcomes				
		cent results in systems b al technologies and resea			an advanced (Master) level know-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	appea	nrs in				
Master	s degr	ee (1 major) Biology (2013	1)			
	-	ee (1 major) Biology (2010				
	-	ee (1 major) Biology (2014	•			
	-	ee (1 major) Mathematics		2)		
master	Master's degree (1 major) Computational Mathematics (2012)					

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 87 / 292
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Module title				Abbreviation
Bioinformatics (Practical Course and Seminar 1) 07-MS2BIF1-102-m01			07-MS2BIF1-102-m01	
Module coord	inator		Module offered by	
holder of the (Chair of Bioinformatics		Faculty of Biology	
ECTS Metho	od of grading	Only after succ. com	pl. of module(s)	
10 nume	rical grade			
Duration	Module level	Other prerequisites		
1 semester	graduate			
Contents				
mics (sequend proteomics), t	ce-, domain analysis and opological and structural	annotation), omics d analysis of biologica	ata analysis (NGS, ti Il interactions includ	d, fields covered include: geno- ranscriptomics, metabolomics, ling statistical methods, phyloge- a presentation, a publication or
	ning outcomes			
Students have	e gained knowledge on ex sign experiments, collect			the field of bioinformatics. They hering to the principles of good
Courses (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + P (no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
Method of ass module is creditab		ge — if other than German, e	examination offered — if no	t every semester, information on whether
following option or b) log (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocation of p	olaces			
Additional info	ormation			
Workload				
Teaching cycl	e			
Referred to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module appea				
-	ee (1 major) Biology (2013			
-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			
	ee (1 major) Mathematics			
-	ee (1 major) Computation		2)	

Modul	e title				Abbreviation
Bioinformatics (Practical Course and Seminar 2)o7-MS2BIF2-102-m01			07-MS2BIF2-102-m01		
Module coordinator Module offered by			I		
holder	of the 0	Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
15	(not)	successfully completed			
Durati		Module level	Other prerequisites		
1 seme	ester	graduate	Admission prerequi	site to assessment: pletion of the respec	regular attendance of lab course ctive exercises as specified at the
Conter	nts				
mics (s proteo netic a	sequeno mics), t nalysis id are m	ce-, domain analysis and opological and structura , protein structure analys	annotation), omics o l analysis of biologica is. The techniques ap	lata analysis (NGS, t al interactions incluc oplied are evaluated	ted, fields covered include: geno ranscriptomics, metabolomics, ding statistical methods, phyloge on the basis of the results obtai a presentation, a publication or a
Intend	ed lear	ning outcomes			
se a so	ientific		oinformatics and to do	ocument the results	dependently perform and organi- obtained. Students are able to for their thesis.
Course	es (type, r	number of weekly contact hours,	language — if other than Ger	rman)	
S + P (i	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
	tion of p				
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	ρ			
reacili	ing cycl				
	-				
Deferr	ad to in		c fortooching daa	mmac)	
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
			s for teaching-degree progra	immes)	
 Modul	e appea	ars in		immes)	
 Modul Master	e appea r's degr		1)	immes)	
 Modul Master Master	e appea r's degr r's degr	ars in ee (1 major) Biology (201	1) 0)	immes)	
 Modul Master Master Master	e appea r's degr r's degr r's degr r's degr	ars in ee (1 major) Biology (201 ee (1 major) Biology (201	1) 0) 4) 5 (2012)		

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Immunology (30 ECTS credits)

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Immun	ology 1	(Lecture and Seminar)			07-MS2IM1-102-m01
Module coordinator Module offered by					
Managing Director of the Institute of Virology and Immun biology				Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
www.vi	rologie				ormation is available at http:// ka/immunologie/immunolo-
Intende	ed lear	ning outcomes			
		gain knowledge about, a llular immunology.	nd will be able to pre	sent and discuss ba	sic concepts and methods in mo-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followin or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			5 		
Module	e appea	urs in			
Master	's degr	ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 91 / 292
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Module	e title				Abbreviation
Immunology 2 (Lecture and Seminar)				07-MS2IM2-102-m01	
Module coordinator Module offered by					
Managing Director of the Institute of Virology and Immuno biology			rology and Immuno-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade		-	
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its				
as auto the im	oimmur mune s	nity and immunomodulat ystem, infection immuno	ion, development of		ected immunology chapters, such immunogenetics, evolution of
		ning outcomes		· · · · ·	
		able to understand currer	· · ·		iese in detail.
	_	number of weekly contact hours, I			
		mation on SWS (weekly o			
		sessment (type, scope, langua ile for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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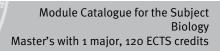
Modul	e title				Abbreviation
Immunology (Practical Course and Seminar 1)07-MS2IMF1-1			07-MS2IMF1-102-m01		
Module coordinator Module offered by					
Managing Director of the Institute of Virology and Immuno- biology					
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	graduate			
Conte	nts	·			
becom lect a l infecti	ne famil laborato on imm	iar with fundamental n ory at the Institute or o unology and others) an	nethods in cellular and ne of the participating i	molecular immunolo nstitutions (e. g. clin ks working on a defi	unobiology during which they will gy. Afterwards, students will se- ics, Virchow Center, molecular ned project. Results of the lab end of the course.
Intend	ed lear	ning outcomes			
			ental procedures and m ately document their ex		gy, to independently address
Course	es (type, i	number of weekly contact hou	rs, language — if other than Gei	rman)	
S + P (no infoi	mation on SWS (week	ly contact hours) and co	ourse language avail	able)
		sessment (type, scope, lan le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, information on whether
followi or b) lo	ing opti og (app	ons will be chosen: a) rox. 10 to 30 pages) or	written examination (3c c) oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
	tion of				
Additi	onal inf	ormation			
Workle	oad				
Teachi	ing cyci	e			
leach	ing cyci	e			
			ions for teaching-degree progra	mmes)	
			ions for teaching-degree progra	mmes)	
 Referre		LPOI (examination regulat	ions for teaching-degree progra	immes)	
 Referra Modul	ed to in e appea	LPOI (examination regulat		mmes)	
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Modul	e title				Abbreviation
Immur	iology (Practical Course and Ser	ninar 2)		07-MS2IMF2-102-m01
Module coordinator Modu				Module offered by	
Manag biolog		ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. com	npl. of module(s)	
15	(not)	successfully completed			
Durati	on	Module level	Other prerequisites		
1 seme	ester	graduate		pletion of the respec	regular attendance of lab course ctive exercises as specified at the
Conter	nts				
investi	gate cu		ology. They will be in	volved in the develo	participants will independently pment of a research plan and wil logy.
Intend	ed lear	ning outcomes			
nology	. This ir		ddress immunologica	al problems on their	of cellular and molecular immu- own and to conduct, document
Course	es (type, r	number of weekly contact hours, I	language — if other than Ger	man)	
S + P (no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
	tion of				
Additio	onal inf	ormation			
Worklo	bad				
Teachi	ng cycl	e	-		
		-			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			s is reaching-degree progra		
 Modul	e anne:	ars in			
	e appe a r's degr		1)		
Master	r's degr	ars in ee (1 major) Biology (201 ee (1 major) Biology (201			

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Virology (30 ECTS credits)

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Module	Module title				Abbreviation
Virolog	y 1 (Le	cture and Seminar)			07-MS2V1-102-m01
Module	e coord	inator		Module offered by	1
Manag biology	Managing Director of the Institute of Virology and biology		rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
	_				
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module	Module title				Abbreviation
Virolog	y 2 (Le	cture and Seminar)		07-MS2V2-102-m01	
Module	e coord	inator		Module offered by	1
Manag biology	Managing Director of the Institute of Virology and biology		rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module	Module title				Abbreviation
Virolog	y (Prac	tical Course and Semin	ar 1)		07-MS2VF1-102-m01
Module	e coord	inator		Module offered by	L
Manag biology	Managing Director of the Institute of Virology and Immuno		/irology and Immuno-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Current	t resea	rch topics in virology - o	ne topic will be discus	sed in depth.	
Intend	ed lear	ning outcomes			
		able to perform small re tice, work independent		e, ,	familiar with the rules of good neir results.
Course	S (type, r	number of weekly contact hours	, language — if other than Ge	rman)	
S + P (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		Sessment (type, scope, langu le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (app	ons will be chosen: a) w rox. 10 to 30 pages) or c	ritten examination (30)) oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat					
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	ummes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (20	11)		
		ee (1 major) Biology (20			
Master	's degr	ee (1 major) Biology (20	14)		

Module	Module title				Abbreviation
Virolog	y (Prac	tical Course and Semina	r 2)		07-MS2VF2-102-m01
Module	Module coordinator			Module offered by	
Managi biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
15	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate		pletion of the respec	regular attendance of lab course ctive exercises as specified at the
Conten	ts				
Current	t resear	rch topics in virology - on	e topic will be discus	sed in depth.	
Intende	ed lear	ning outcomes			
		able to perform small res tice, work independently			familiar with the rules of good neir results.
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	_				
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
	-		-		
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Human Genetics

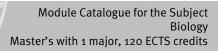
(30 ECTS credits)

Students who selected this subject area must take module o7-MS2HG. The second theoretical module in this subject area may be selected from the list below.

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Module title					Abbreviation
Human	Geneti	cs (Lecture and Seminar)			07-MS2HG-102-m01
Module	Module coordinator		Module offered by		
Managing Director of the Institute of Human Genetics		ıman Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	graduate			
Conten	ts				
This mo	odule w	vill discuss current topics	in human genetics.		
Intende	ed learı	ning outcomes			
Studen depth.	ts will I	nave gained the ability to	understand current i	issues in human gen	etics and to discuss these in
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
			ge — if other than German, e	examination offered — if no	t every semester, information on whether
		le for bonus)			
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocation of places					
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
	-	ee (1 major) Biology (2011	-		
	-	ee (1 major) Biology (2010			
Master's degree (1 major) Biology (2014)					

Module title			Abbreviation			
Molecu	lar Bio	logy (Lecture)			07-MS2-102-m01	
Module	e coord	inator		Module offered by		
holder of the Chair of Microbiology, hold Bioinformatics, holder of the Chair of Cel velopmental Biology, Prof. Dr. M. Sauer		Cell Biology and De-	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern mole- cular biology from the point of view of these different disciplines. Participants are recommended to read the text- book "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eu- karyotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing tech- nology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translati- on machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communi- cation mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorga-						
nisms (Intende		ning outcomes				
		nowledge about the mo	blecular biology of the	eukarvotic and proka	arvotic cell.	
_		umber of weekly contact hours		· · · ·	•	
		ion on SWS (weekly co			2)	
		essment (type, scope, lang	uage — if other than German,	examination offered — if no	t every semester, informati	on on whether
one of t questic	Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)					tiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Master's wi	ith 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 102 / 292



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

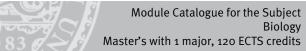
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 103 / 292	
	reg. data record Master (120 ECTS) Biologie - 2014		

Modul	e title				Abbreviation	
Cell- and Developmental Biology Master 1 (Lecture and Seminar 1)o7-MS2ZE1-102-mo				07-MS2ZE1-102-m01		
Module coordinator				Module offered by	Module offered by	
holder of the Chair of Cell Biology and Developmental Bio- logy						
ECTS	Methe	od of grading	Only after succ. con	Only after succ. compl. of module(s)		
10	o numerical grade					
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conten	nts		•			
<i>und Pe</i> cell and lic disc	e <i>rspekti</i> d unrav orders a	ven (Milestones and I rels their biological ca Ind cancer. In the sem	Perspectives of Cell Biolo auses and consequences	gy). The lecture deso , such as infection, spectives of Cell Biol	nar <i>Zellbiologie-Meilensteine</i> cribes pathological states of the apoptosis, senescence, metabo- <i>logy</i> , classic ground-breaking pu- N.	
Intend	ed lear	ning outcomes				
		ossess scientific bac biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade	
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	rman)		
S + V (r	no infoi	mation on SWS (wee	kly contact hours) and co	ourse language avail	able)	
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether	
one of questio	the foll ons) or	owing options will be	chosen: a) written exam f one candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat						
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	mmes)		
Modul	e appea	ars in				
		ee (1 major) Biology (2011)			
Master	's degr	ee (1 major) Biology (2010)			
		ee (1 major) Biology (1				

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Module title Abbreviation						
Cell- an	Cell- and Developmental Biology Master 2 (Lecture and Seminar 2) 07-MS2ZE2-102-m01					
Module coordinator Module offered by						
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	Faculty of Biology		
ECTS Method of grading Only after succ. compl. of module(s)						
10 numerical grade						
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts		•			
nar Ente gy). The book kr velopm sequen ders?: (generat genetic nism for ages nes and cussed Intende	wicklur e lectur nowled ental b ices of Opporte te Dis s Me Develo s. In the d Outlo from a ed learn pants p	le comprises the lecture agsbiologie-Meilensteine ge Signale und Differenzie ge to students. It will rat iology. Topics covered in multicellularity Sex: Me unities and limitations of sasters: What do we actu taorganisms: We are new pmental biology of beha e seminar Entwicklungsb ok), classical ground-bre n unusual point of view. hing outcomes ossess a knowledge of the d are able to put this into	e und Perspektiven (Werung (Signals and Di her introduce studem in the lecture (subject ore than just ? + ? = f stem cell research ally know about meta ver alone Developm viour: Everything is le <i>viologie-Meilensteine</i> eaking scientific articl	filestones and Persp ifferentiation) is not of ts to particularly inter to change): - Cooper On the move: Morph Growing new hearts amorphoses? - Alway ent in changing envi earned. Or isn't it? - E und Perspektiven (D es in the field of dev	ectives of Development designed to merely i resting and current ation: Development nogenetic migration ?: Animals and their rs the same?: Plastic ronments: Ecology a Evo-devo: A fad? No, evelopmental Biology elopmental biology	ental Biolo- mpart text- topics in de- and con- All-roun- ability to re- ity and epi- ind polyphe- been around gy - Milesto- will be dis- developmen-
Course	S (type, n	umber of weekly contact hours,	language — if other than Gei	rman)		
S + V (n	io infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
one of t questio	the foll ons) or	be informed about the m owing options will be ch b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ins in				
	-	ee (1 major) Biology (201 ee (1 major) Biology (201				
Master's wi	th 1 majoı	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 105 / 292





Master's degree (1 major) Biology (2014)

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Module title Abbreviation						
Microbiology 1 (Lecture and Seminar) 07-MS2M1-112-mo1						
Module	coord	inator		Module offered by		
holder	of the (Chair of Microbiology		Faculty of Biology		
ECTS	CTS Method of grading Only after succ. compl. of module(s)					
10 numerical grade						
Duration Module level Other prerequisites						
1 semes	ster	graduate				
Conten	ts					
Fundamentals of molecular microbiology and infection biology, mechanisms of adherence and invasion, bacteri- al pathogenicity factors, regulation of virulence, mechanisms of host defence and pathogen interference, current methods in infection biology.						
Intende	ed leari	ning outcomes				
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,	
Courses (type, number of weekly contact hours, language — if other than German)						
V + S (n	o infor	mation on SWS (weekly o	ontact hours) and co	ourse language availa	able)	
		s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocati	ion of p	olaces				
Biology Master's: no restrictions. Biochemistry Master's: 15 places. Places will be allocated by lot.						
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	appea	urs in				
	-	ee (1 major) Biochemistry				
	-	ee (1 major) Biology (2011				
Master'	s degr	ee (1 major) Biology (2014	t)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 107 / 292
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Microbiology 2 (Lecture and Seminar)07-MS2M2-112-mo1Module offered byModule offered byfaculty of BiologyECTSMeth of gradingOnly after succ. com l. of module(s)Image in a mathematical grade					
holder of the Chair of Microbiology Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selec- ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infecti- on biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
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Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
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 V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice 					
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice					
Allocation of places					
Biology Master's: no restrictions. Biochemistry Master's: 15 places. Places will be allocated by lot.					
Additional information					
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biochemistry (2012)					
Master's degree (1 major) Biology (2011)					
Master's degree (1 major) Biology (2014)					

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Module	e title				Abbreviation
Immun	ology 1	(Lecture and Seminar)			07-MS2IM1-102-m01
Module coordinator				Module offered by	
Managing Director of the Institute of Virology and Imm biology			rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
www.vi	rologie				ormation is available at http:// ka/immunologie/immunolo-
Intende	ed lear	ning outcomes			
		gain knowledge about, a llular immunology.	nd will be able to pre	sent and discuss ba	sic concepts and methods in mo-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followin or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			5 		
Module	e appea	urs in			
Master	's degr	ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module	e title				Abbreviation
Immun	Immunology 2 (Lecture and Seminar)			07-MS2IM2-102-m01	
Module	Module coordinator			Module offered by	
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
as auto the imr	oimmur nune s		ion, development of		ected immunology chapters, such immunogenetics, evolution of
Studen	its are a	able to understand currer	nt topics in immunolo	gy and to discuss th	iese in detail.
		number of weekly contact hours, l	· · · · · · · · · · · · · · · · · · ·		
		mation on SWS (weekly o			able)
		sessment (type, scope, langua	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat			,		
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201 ee (1 major) Biology (201 ee (1 major) Biology (201	o)		

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Virolog	y 1 (Le	cture and Seminar)			07-MS2V1-102-m01
Module	Module coordinator			Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
	_				
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module	e title				Abbreviation
Virolog	y 2 (Le	cture and Seminar)			07-MS2V2-102-m01
Module	Module coordinator			Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 112 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title			Abbreviation		
Human Genetics (Practical Course and Seminar 1)					07-MS2HGF1-102-m01
Module	Module coordinator			Module offered by	
Managi	ng Dire	ector of the Institute of Hu	uman Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
tific lab learn to	projec apply	t and learn how to prese	nt their data. They least and methods of hur	arn to discuss their d nan genetics, to inde	ng on a small, well-defined scien- ata in a seminar. The students ependently address scientific
Intende	ed learı	ning outcomes			
		able to independently inv esults, adhering to the p			ll as to document, interpret and
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + P (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followir or b) log	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module					
		ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2017			
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	reg. data record Master (120 ECTS) Biologie - 2014	

	e title				Abbreviation
Human	Genet	ics (Practical Course and	l Seminar 2)		07-MS2HGF2-102-m01
Module	e coord	inator		Module offered by	1
Manag	ing Dir	ector of the Institute of H	uman Genetics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
15	(not)	successfully completed			
Duration Module level Other prerequisites					
1 seme	ester	graduate		pletion of the respe	regular attendance of lab course ctive exercises as specified at the
Conten	nts				
search vanced	papers l techn	s. The participants will be	e involved in the deve	lopment of a resear	eading and presenting original re ch plan and will learn to apply ad- tical course will have a duration
Intend	ed lear	ning outcomes			
		able to independently inv results, adhering to the p			ell as to document, interpret and
Course	S (type, 1	number of weekly contact hours,	language — if other than Ge	rman)	
S + P (r	no infoi	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
Metho module is			age — if other than German,	examination offered — if n	ot every semester, information on whether
		ole for bonus)			
followi or b) lo	nts will ng opti og (app	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	to the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
followi or b) lo aminat	nts will ng opti og (app tion in g	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions)
followi or b) lo	nts will ng opti og (app tion in g	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat	nts will ng opti og (app tion in s t ion of p	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat	nts will ng opti og (app tion in s t ion of p	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat	nts will ng opti og (app tion in g t ion of bnal inf	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followii or b) lo aminat Allocat Additio	nts will ng opti og (app tion in g t ion of bnal inf	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followi or b) lo aminat Allocat Additio Worklo 	nts will ng opti og (app tion in s tion of p onal inf	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followii or b) lo aminat Allocat Additio	nts will ng opti og (app tion in s tion of p onal inf	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of o	o to 60 minutes, incl one candidate each	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat Additio Worklo Teachin 	ng opti og (app tion in s tion of p onal inf oad	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places formation	itten examination (30 oral examination of c ates (approx. 30 to 60	o to 60 minutes, incl one candidate each o minutes) or e) pres	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat Additio Worklo Teachin 	ng opti og (app tion in s tion of p onal inf oad	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places	itten examination (30 oral examination of c ates (approx. 30 to 60	o to 60 minutes, incl one candidate each o minutes) or e) pres	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followii or b) lo aminat Allocat Additio Worklo Teachin Referre	nts will ng opti og (app tion in s tion of p onal inf oad	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places formation	itten examination (30 oral examination of c ates (approx. 30 to 60	o to 60 minutes, incl one candidate each o minutes) or e) pres	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat Additio Worklo Teachin Referre Module	ng opti og (app ion in g ion of p onal inf oad ng cycl ed to in	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places formation e LPOI (examination regulation ars in	ritten examination (30 oral examination of o ates (approx. 30 to 60 s for teaching-degree progra	o to 60 minutes, incl one candidate each o minutes) or e) pres	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
followin or b) lo aminat Allocat Worklo Teachin Referre Module	ng opti og (app tion in g tion of p onal inf oad ng cycl ed to in e appea	be informed about the le ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida places formation	ritten examination (30 oral examination of o ates (approx. 30 to 60 s for teaching-degree progra 1)	o to 60 minutes, incl one candidate each o minutes) or e) pres	uding multiple choice questions) (30 to 60 minutes) or d) oral ex-

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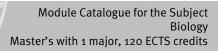
Physiological Chemistry

(30 ECTS credits)

Students who selected this subject area must take module o7-MS2 and must select either module o7-MS2ZE1 or module o7-MS2ZE2 as their second theoretical module.

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Module	e title				Abbreviation	
Molecu	lar Bio	logy (Lecture)			07-MS2-102-m01	
Module	e coord	inator		Module offered by		
Bioinfo	rmatics	Chair of Microbiology, h s, holder of the Chair of Siology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Develop cular bi book "E karyotic cells in quarter molecu Biology of the o nology time). T prokary on mac cell div cation r	pmenta iology f Essenti- c cell at additic of the lar biol " and p other th (time c 'he mic votic ce hinery, ision a mechar	logy of the eukaryotic a al Biology, Microbiology from the point of view of al Cell Biology". The se and intends to elucidate on to fundamental prin- lecture) contains a larg logy of a cell with bioin present many clear and ree Chairs. Our vision: onsuming "wet" experi robiological section (a lls. Key aspects include mechanisms of regula and differentiation, bact hisms. Recommended of	y, Biophysics and Bioir f these different discip ction on cell biology (a the vast diversity in st ciples of modern molec e amount of examples formatic tools. We clos useful examples for th bioinformatics essenti ments can be planned op. a quarter of the lect e the organisation of th tion of gene expressio erial motility and chem	formatics and deals lines. Participants a pp. a quarter of the l ructure and function cular cell biology. The for applications whi sely adhere to the con ally is molecular biol more easily and thu ture) deals with fund the bacterial genome, n, transport of small notaxis, signal transc	with concepts of mo re recommended to re ecture) mainly discu of molecules, organ e bioinformatics sect ch allow the investig nents of the book "E tools when working logy based on compu- s bioinformatics sav amental molecular a the transcription an molecules and macri	odern mole- read the text- isses the eu- nelles and tion (app. a gation of the Essential Cell on the topics uting tech- es precious aspects of d translati- romolecules, l communi-
nisms (Intende		ning outcomes				
	·	nowledge about the mo		eukarvotic and proka	arvotic cell.	
_		umber of weekly contact hours		<i>,</i> ,	,	
		ion on SWS (weekly co			.)	
Method	d of ass	essment (type, scope, lang				on on whether
one of t questio	the follons) or	be informed about the owing options will be c b) oral examination of lates (approx. 30 to 60	hosen: a) written exam one candidate each (30	ination (30 to 60 mi	nutes, including mul	ltiple choice
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teachir	ng cycl	9				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
Master's wi	ith 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 116 / 292



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

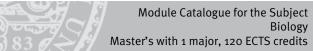
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 117 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Cell- aı	nd Deve	elopmental Biology N	laster 1 (Lecture and Sen	ninar 1)	07-MS2ZE1-102-m01
Module	e coord	inator		Module offered by	
holder logy	of the (Chair of Cell Biology a	nd Developmental Bio-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts		•		
<i>und Pe</i> cell and lic disc	<i>rspekti</i> d unrav orders a	ven (Milestones and F vels their biological ca und cancer. In the sem	Perspectives of Cell Biolo auses and consequences	gy). The lecture desc , such as infection, spectives of Cell Biol	nar <i>Zellbiologie-Meilensteine</i> cribes pathological states of the apoptosis, senescence, metabo- <i>logy</i> , classic ground-breaking pu- N.
Intend	ed lear	ning outcomes			
		ossess scientific bacl biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	man)	
S + V (r	no infoi	mation on SWS (weel	kly contact hours) and co	ourse language avail	able)
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be	chosen: a) written exam f one candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat			·		
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	mmes)	
Module	e appea	ars in			
		ee (1 major) Biology (:	2011)		
		ee (1 major) Biology (
	's degr				

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Module	title				Abbreviation	
Cell- an	d Deve	elopmental Biology Mast	ter 2 (Lecture and Ser	ninar 2)	07-MS2ZE2-102-mc	01
Module	coord	inator		Module offered by		
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
nar Ente gy). The book kr velopm sequen ders?: (generat genetic nism for ages nes and cussed Intende Particip tal biole	wicklur e lectur nowled ental b ces of Dpportu s Dis s Dis s Ne Develo s. In the d Outlo from a ed learn pants p ogy and	le comprises the lecture ingsbiologie-Meilensteine re Signale und Differenzie ge to students. It will rat biology. Topics covered in multicellularity Sex: M unities and limitations of sasters: What do we acture taorganisms: We are new opmental biology of behave e seminar Entwicklungsb ok), classical ground-bree n unusual point of view. hing outcomes ossess a knowledge of the d are able to put this inter-	e und Perspektiven (<i>W</i> erung (Signals and Di her introduce studen in the lecture (subject ore than just ? + ? = f stem cell research ally know about meta ver alone Developm wiour: Everything is le biologie-Meilensteine eaking scientific articl	filestones and Persp ifferentiation) is not ts to particularly inter to change): - Cooper On the move: Morp Growing new hearts amorphoses? - Alway ent in changing envi earned. Or isn't it? - E und Perspektiven (D es in the field of dev plecular biological pr of cell and developm	ectives of Developme designed to merely i eresting and current i ration: Development hogenetic migration ?: Animals and their vs the same?: Plastic ronments: Ecology a Evo-devo: A fad? No, evelopmental Biology elopmental biology	ental Biolo- mpart text- topics in de- and con- All-roun- ability to re- ity and epi- ity and epi- nd polyphe- been around <i>ay - Milesto</i> - will be dis- developmen-
		mation on SWS (weekly			able)	
Method	l of ass	sessment (type, scope, langua le for bonus)				ion on whether
one of t questio	the foll ons) or	be informed about the m owing options will be ch b) oral examination of or lates (approx. 30 to 60 n	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mul	ltiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
			-			
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	immes)		
Module						
		ee (1 major) Biology (201				
·		ee (1 major) Biology (201				
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Module	title				Abbreviation		
Cell- an	d Deve	elopmental Biology Pra	actical Course and Sem	inar 1	07-MS2ZEF1-102-m	01	
Module	coord	inator		Module offered by	<u> </u>		
holder logy	of the (Chair of Cell Biology an	d Developmental Bio-	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	graduate		site to assessment: pletion of the respec urse.			
Conten	ts						
pants a red tech develop se, stuc	re enco nnolog omenta dents a	buraged to independer ical skills to analyse in Il biology for medicine cquire sustained insig	g techniques. A broad v ntly design and perform nportant basic biologica and the economy is hig hts into current researc post-docs, gain first-har	their own experime al processes. In addi ghlighted. During the h activities of the Ch	nts. Participants use tion, the importance fifth and final week air and, interacting	their acqui- of cell and of the cour-	
Intende	ed learı	ning outcomes					
logy an to perfo code of Course	d to ind orm and scient s (type, n	dependently implement d document cell and de ific practice.	h complex scientific qu at acquired methodolog evelopmental biology-re rs, language — if other than Gen y contact hours) and co	ical tools to answer elated experiments, man)	these questions. The adhering to a genera	ey are able	
		· · · · ·	·		· · ·		
		le for bonus)	guage — if other than German,	examination offered — if no	ot every semester, informat	ion on whether	
followir or b) log aminati	ng optio g (appr ion in g	ons will be chosen: a) ox. 10 to 30 pages) or groups of up to 3 candi	length and scope of the written examination (30 c) oral examination of c dates (approx. 30 to 60	o to 60 minutes, incl one candidate each (uding multiple choic 30 to 60 minutes) of	e questions) r d) oral ex-	
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
	- 4						
Worklo	ad						
Toochir		0					
Teachir	ig cycl	e					
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)			
Module	appea	irs in					
Master'	s degr	ee (1 major) Biology (20 ee (1 major) Biology (20 ee (1 major) Biology (20	010)				
Master's wi	th 1 majoi	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 121 / 292	

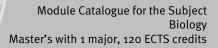
Module	e title				Abbreviation
Labora	tory pra	actical course 2			07-MSL2-102-m01
Module	e coord	inator		Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
Practica	al cours	se, summer school or wo	rkshop on specific to	pics in biology (dura	tion: 4-6 weeks).
Intende	ed leari	ning outcomes			
		specific methods and lab hniques later on in a rese		ected fields of biolog	gy. Ability to apply these me-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followii or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	nrs in			
	-	ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			

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Module	e title				Abbreviation
Physio	logical	Chemistry (Practical Co	urse and Seminar 2)		07-MS2PHF2-102-m01
Module	e coord	inator		Module offered by	
holder of the Chair of Bioinformatics			Faculty of Biology		
ECTS	Methe	od of grading	Only after succ. con	pl. of module(s)	
15	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate		pletion of the respe	regular attendance of lab course ctive exercises as specified at the
Conten	ts				
investi	gate cu nd will i	rrent problems in physio	logical chemistry. The	ey will be involved ir	, participants will independently n the development of a research gy and/or developmental bioche-
Intende	ed lear	ning outcomes			
	They a				logy and developmental bioche- nent, interpret and discuss their
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua ole for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether
followii or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat					
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cvcl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
			use host	/	
Module	e appez	ars in			
		ee (1 major) Biology (201	1)		
Master	's degr	ee (1 major) Biology (201	o)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 123 / 292
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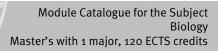


Cellular Tumorbiology

(30 ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 124 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	Module title Abbreviation					
Molecu	Molecular Biology (Lecture) 07-MS2-102-m01					
Module	e coord	inator		Module offered by		
Bioinfo	rmatics	Chair of Microbiology, h s, holder of the Chair of Siology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	TS Method of grading Only after succ. compl. of module(s)					
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Contents						
Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern molecular biology from the point of view of these different disciplines. Participants are recommended to read the textbook "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eukaryotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing technology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translation machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communication mechanisms. Recommended reading: (a) Allgemeine Mikrobiologie (Fuchs) and (b) Biology of Microorga-						
nisms (Intende	·	ning outcomes				
		nowledge about the mo	blecular biology of the	eukarvotic and proka	arvotic cell.	
_		umber of weekly contact hours		<i>,</i> ,	,	
					<u>;)</u>	
V (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)					on on whether	
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocation of places						
Additional information						
Worklo	Workload					
Teachir	Teaching cycle					
Referre	d to in	LPOI (examination regulation	ons for teaching-degree progra	ummes)		
Master's wi	th 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 125 / 292



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

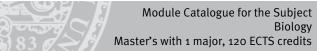
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 126 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation				
Cell- and Developmental Biology Master 1 (Lecture and Seminar 1)			ninar 1)	07-MS2ZE1-102-m01				
Module	e coord	inator		Module offered by				
holder logy	of the (Chair of Cell Biology a	nd Developmental Bio-	Faculty of Biology				
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)				
10	nume	rical grade						
Duratio	on	Module level	Other prerequisites					
1 seme	ster	graduate						
Conten	ts		•					
The module consists of the lecture <i>Zellpathologie</i> (<i>Cytopathology</i>) and the seminar <i>Zellbiologie-Meilensteine</i> <i>und Perspektiven</i> (<i>Milestones and Perspectives of Cell Biology</i>). The lecture describes pathological states of the cell and unravels their biological causes and consequences, such as infection, apoptosis, senescence, metabo- lic disorders and cancer. In the seminar <i>Milestones and Perspectives of Cell Biology</i> , classic ground-breaking pu- blications in the field of cell biology are discussed from an unusual point of view.								
Intend	ed lear	ning outcomes						
		ossess scientific bacl biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade			
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	man)				
S + V (r	no infoi	mation on SWS (weel	kly contact hours) and co	ourse language avail	able)			
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether			
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)								
			·					
Allocation of places								
Additional information								
Worklo	ad							
Teaching cycle								
Referred to in LPO I (examination regulations for teaching-degree programmes)								
Module	e appea	ars in						
		ee (1 major) Biology (:	2011)					
				Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010)				
Master's degree (1 major) Biology (2014)								

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Module	Module title Abbreviation					
Cell- an	Cell- and Developmental Biology Master 2 (Lecture and Seminar 2) 07-MS2ZE2-102-m01					
Module	coord	inator		Module offered by		
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
 && The module comprises the lecture <i>Signale und Differenzierung (Signals and Differentiation)</i> and the seminar <i>Entwicklungsbiologie-Meilensteine und Perspektiven (Milestones and Perspectives of Developmental Biology)</i>. The lecture <i>Signale und Differenzierung (Signals and Differentiation)</i> is not designed to merely impart textbook knowledge to students. It will rather introduce students to particularly interesting and current topics in developmental biology. Topics covered in the lecture (subject to change): - Cooperation: Development and consequences of multicellularity Sex: More than just ? + ? = On the move: Morphogenetic migration All-rounders?: Opportunities and limitations of stem cell research Growing new hearts?: Animals and their ability to regenerate Disasters: What do we actually know about metamorphoses? - Always the same?: Plasticity and epigenetics Metaorganisms: We are never alone Development in changing environments: Ecology and polyphenism Developmental biology of behaviour: Everything is learned. Or isn't it? - Evo-devo: A fad? No, been around for ages. In the seminar <i>Entwicklungsbiologie-Meilensteine und Perspektiven (Developmental Biology - Milestones and Outlook</i>), classical ground-breaking scientific articles in the field of developmental biology will be discussed from an unusual point of view. Intended learning outcomes Participants possess a knowledge of the theoretical and molecular biological principles underlying developmental biology research. Courses (type, number of weekly contact hours, language – if other than German) 						
		mation on SWS (weekly			able)	
Method	l of ass	sessment (type, scope, langua le for bonus)				ion on whether
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	••					
		ee (1 major) Biology (201				
·		ee (1 major) Biology (201				
Master's wi	th 1 major	r Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 128 / 292
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Master's degree (1 major) Biology (2014)

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation					
Microbi	Microbiology 1 (Lecture and Seminar) 07-MS2M1-112-m01				
Module coordinator Module offered by					
holder	of the O	Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Content	ts				
al patho	ogenici				adherence and invasion, bacteri- id pathogen interference, current
Intende	d learr	ning outcomes			
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)	
V + S (n	o infor	mation on SWS (weekly c	ontact hours) and co	ourse language availa	able)
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)					
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)					
Allocati	ion of p	olaces			
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biochemistry			
	0	ee (1 major) Biology (2011			
Master'	s degre	ee (1 major) Biology (2012	t)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 130 / 292
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Microbiology ≥ Lecture and Seminar) o7-MS2M2-112-m01 Module corrective interval of Microbiology Faculty of Biology holder of grading Only after succ. combl. of module(s) ECTS Method f grading Only after succ. combl. of module(s) 10 mumerical grade Duration graduate 1 sem ester graduate Contentive graduate Fundamental kinciples of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic pathogens as model organisms. In addition, current research methods in infection on biology and pathogenicity factors will be presented using selected prokaryotic	Module title Abbreviation					
holder of the Chair of Microbiology Faculty of Biology ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assesment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes), including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Microb	Microbiology 2 (Lecture and Seminar) 07-MS2M2-112-m01				
ECTS Method of grading Only after succ. compl. of module(s) 10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Module	e coord	inator		Module offered by	
10 numerical grade Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	holder	of the (Chair of Microbiology		Faculty of Biology	
Duration Module level Other prerequisites 1 semester graduate Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes) including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
1 semester graduate Contents	10	nume	rical grade			
Contents Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selected prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infection biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mechanisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Duratio	n	Module level	Other prerequisites		
Fundamental principles of the mode of action of microbial pathogenicity factors will be presented using selec- ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infecti- on biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	1 seme	ster	graduate			
ted prokaryotic and eukaryotic pathogens as model organisms. In addition, current research methods in infecti- on biology will be presented. Intended learning outcomes Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Conten	ts				
Students have gained fundamental knowledge in infection biology and pathogenicity research and the mecha- nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	ted pro	karyoti	c and eukaryotic pathoge			
nisms behind infectious diseases. Courses (type, number of weekly contact hours, language – if other than German) V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Intende	ed leari	ning outcomes			
 V + S (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) 				owledge in infection b	biology and pathoge	nicity research and the mecha-
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)	V + S (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
	one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of					
Allocation of places	Allocat	ion of p	olaces			
Biology Master's: no restrictions. Biochemistry Master's: 15 places. Places will be allocated by lot.	Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.
Additional information					·	
Workload	Worklo	ad				
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biochemistry (2012)	Master'	's degr	ee (1 major) Biochemistry	(2012)		
Master's degree (1 major) Biology (2011)		0	() / O) (,		
Master's degree (1 major) Biology (2014)	Master'	's degr	ee (1 major) Biology (2014	4)		

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Module	Module title Abbreviation				
Immun	ology 1	(Lecture and Seminar)			07-MS2IM1-102-m01
Module	e coord	inator		Module offered by	I
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10 numerical grade					
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
www.vi	rologie				ormation is available at http:// ka/immunologie/immunolo-
Intende	ed lear	ning outcomes			
		gain knowledge about, a llular immunology.	nd will be able to pre	sent and discuss ba	sic concepts and methods in mo-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of _l	olaces			
Additio	nal inf	ormation			
	-				
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
		ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Immun	ology 2	e (Lecture and Seminar)			07-MS2IM2-102-m01
Module	Module coordinator			Module offered by	<u> </u>
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
as auto the imr	immur nune s		ion, development of t	-	ected immunology chapters, such immunogenetics, evolution of
		able to understand currer	nt topics in immunolo	ev and to discuss th	ese in detail.
		umber of weekly contact hours, l			
		mation on SWS (weekly o			able)
Metho	d of ass				t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat			,		
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	urs in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Virolog	/irology 1 (Lecture and Seminar)				07-MS2V1-102-m01
Module	Module coordinator			Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
	_				
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module	e title				Abbreviation
Virolog	Virology 2 (Lecture and Seminar)				07-MS2V2-102-m01
Module	Module coordinator			Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module title				Abbreviation		
Human	Human Genetics (Lecture and Seminar)				07-MS2HG-102-m01	
Module coordinator				Module offered by		
Managi	ing Dire	ector of the Institute of Hu	ıman Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
2 seme	ster	graduate				
Conten	ts					
This mo	odule w	vill discuss current topics	in human genetics.			
Intende	ed learı	ning outcomes				
Studen depth.	ts will I	nave gained the ability to	understand current i	issues in human gen	etics and to discuss these in	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)	
			ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		le for bonus)				
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat						
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010				
master	Master's degree (1 major) Biology (2014)					

Module title Abbreviation				Abbreviation	
Labora	tory pra	actical course 2			07-MSL2-102-m01
Module coordinator				Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
Practica	al cours	se, summer school or wo	rkshop on specific to	pics in biology (dura	tion: 4-6 weeks).
Intende	ed leari	ning outcomes			
		specific methods and lab hniques later on in a rese		ected fields of biolog	gy. Ability to apply these me-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followii or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			

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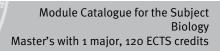
Module	e title				Abbreviation
Cellula	r Tumo	rbiology Master 1 (Pr	actical Course and Semi	inar 1)	07-MS2ZTF1-112-m01
Module	e coord	inator		Module offered by	
degree	progra	mme coordinator Bio	logie (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites	6	
1 seme	ster	graduate		pletion of the respe	regular attendance of lab course ctive exercises as specified at the
Conten	ts				
fields o employ in the f	of mole a broa orm of	cular biology, infection ad range of methods i a presentation, a pub	on biology and cell biolog	gy as well as literatu biology and immunc	variety of methods within the re search techniques. They will ology. Results will be documented
		ning outcomes			
		-	entific questions in mole good scientific practice.	ecular biology and c	ell biology and to document their
Course	S (type, r	number of weekly contact ho	urs, language — if other than Ge	rman)	
P + S (r	no infor	mation on SWS (wee	kly contact hours) and co	ourse language avai	lable)
		Sessment (type, scope, la Ile for bonus)	nguage — if other than German,	examination offered — if n	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a rox. 10 to 30 pages) o) written examination (30 r c) oral examination of c	o to 60 minutes, inc one candidate each	to the course. Usually, one of the luding multiple choice questions) (30 to 60 minutes) or d) oral ex- sentation (20 to 45 minutes)
Allocat	ion of _l	olaces			
Additio	nal inf	ormation			
Worklo	ad				
	-				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regula	ations for teaching-degree progra	ammes)	
Module					
	-	ee (1 major) Biology (
Master	's degr	ee (1 major) Biology (2014)		

Master's with 1 major Biology (2014)	JMU Würzburg ● generated 26-Aug-2024 ● exam. reg. data record Master (120 ECTS) Biologie - 2014	page 138 / 292
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Module title				Abbreviation		
Cellular Tumorbiology Master 2 (Practical Course and Seminar 2)			nar 2)	07-MS2ZTF2-112-m01		
Module coordinator				Module offered by		
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
15	(not) s	successfully completed				
Duration Module level		Other prerequisites				
1 semester		graduate	Admission prerequisite to assessment: regular attendance of lab course and successful completion of the respective exercises as specified at the beginning of the course.			
Content	ts					
be inde gy and/ modifie	pende or mol d whe	ntly addressed by the stu ecular biology. The techr	idents. They will appl iques applied will be al results and progre	y experimental tech e evaluated on the b	s of the scientific question will niques in cell biology, immunolo- asis of the results obtained and roject will be documented in the	
Intende	d lear	ning outcomes				
Students are able to independently carry out scientific experiments on a topic in tumour biology/oncology. They are able to answer and discuss questions in the field of tumour biology/oncology. Students are able to adhere to the principles of good scientific practice and to document, interpret and discuss their results. They are able to apply specific techniques required to answer scientific questions. Courses (type, number of weekly contact hours, language – if other than German)						
P + S (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
Students will be informed about the length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes)						
Allocati	ion of p	olaces				
Additio	nal inf	ormation				
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master'	s degr	ee (1 major) Biology (201	1)			

Master's with 1 I	major Biology (2014)
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Focus 3 (ECTS credits)

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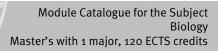


Molecular Cell- and Developmental Biology of Plants

(30 ECTS credits)

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Module title			Abbreviation			
Curren	t Metho	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Module coordinator				Module offered by		
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
			Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ester	graduate				
Conter	nts					
tegies discus sion ar milariti actions of strat tes: Se and ard as spe import ve bee drugs v (evider	of the p sed. Th nd activ ies betv s and m tegies i econdar e often cific de ant clas n devel with im nce-bas	ween plants and pathogo bathogens - bacteria, fung e molecular mechanisms ration of local and system ween plant and human in polecular mechanisms de n plant protection. Evolut y metabolites are part of essential for survival. The fence strategies will be e sses of plant bioactive co oped from plant seconda proved pharmaceutical p sed medicine) as well as	gi and viruses - as we of pathogen recogni- nic defence response nmune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second xplained. Pharmacol mpounds will be pre- ary metabolites that h roperties. Examples	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevar ce strategies agains lary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pl ction, regulation of g this lecture. Differen rstanding plant-path andamental for the c nce of plant seconda t microorganisms an be discussed and g of action and molecu- ortion of currently us ad structures to gen y potent plant pharm	ants will be gene expres- nces and si- hogen-inter- development ary metaboli- nd herbivores eneral as wel ular targets of sed drugs ha- perate potent naceuticals
discus		ning outcomes				
	-	are qualified to perform a	and organize their sci	entific laboratory wo	ork independently ar	nd document
the obt		results. They are able to o				
Course	es (type, r	number of weekly contact hours,	anguage — if other than Ge	rman)		
V (no i	nforma	tion on SWS (weekly cont	tact hours) and cours	e language available	e)	
		Sessment (type, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		le for bonus)		C.1		
one of questio	the foll ons) or	be informed about the m owing options will be cho b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	tion of _l	places				
Additio	onal inf	ormation				
Worklo	oad					
	1					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)		
Master's w	ith 1 majo	r Biology (2014)		irg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 142 / 292
			105. 4414 160	master (120 2015) biolog		



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Pharmacy (2012)

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Module title					Abbreviation	
Developmental Physiology and Adaption of Plants (Lecture and Seminar)07-MS3PA-102-m01					07-MS3PA-102-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Pharmaceutical B	Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semester graduate						
Conten	ts					
ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environmental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss						
		s in the context of the cu	1	-		
		umber of weekly contact hours, l			- + 1 -)	
		mation on SWS (weekly o			·	
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
Master's degree (1 major) Biology (2010)						
Master's degree (1 major) Biology (2014)						

Module t	title				Abbreviation
Response	e towa	ards Biotic and Abiotic Fa	actors		07-MS3BA-102-m01
Module c	Module coordinator			Module offered by	
holder of	f the C	hair of Pharmaceutical B	iology	Faculty of Biology	
ECTS N	Netho	d of grading	Only after succ. com	pl. of module(s)	
10 n	numeri	ical grade			
Duration		Module level	Other prerequisites		
1 semest	er	graduate			
Contents	5				
Plant resp zymes an lerance. T and signa as a sour	ponse nd the The lee al tran rce of i	s to these external facto levels of a variety of me cture and seminar will no sduction. They will also nutrients.	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants
		ing outcomes			
		ble to understand the in bic in the context of the s			ment on a molecular level and to
Courses ((type, nu	Imber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (no	inforr	nation on SWS (weekly c	ontact hours) and co	ourse language avail	able)
Method of module is cr			ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of the question:	e follo s) or b	wing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocatio	on of p	laces			
Additiona	al info	rmation			
Workload	d				
Teaching	g cycle	1			
Referred	to in L	POI (examination regulations	for teaching-degree progra	mmes)	
Module a	appear	rs in			
	-	e (1 major) Biology (2011			
	-	e (1 major) Biology (2010			
Master's	degre	e (1 major) Biology (2012	t)		

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Module	title				Abbreviation
Biophy	sics an	d Biochemistry			07-MS3BB-102-m01
Module coordinator				Module offered by	
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and bic of parti opporti	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.
		ning outcomes			
sics, st	ructura				roteins in the fields of biophy- I to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
master	s uegre	ee (1 major) Biology (2014	4)		

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Module	e title				Abbreviation
Molecu	ılar Bio	logy of Plants (Practical	Course and Seminar	1)	07-MS3MF1-102-m01
Module coordinator				Module offered by	
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its	~	·		
The mo siology		rovides an in-depth insig	ht into molecular bio	logical strategies an	d methods applied in plant phy-
Intend	ed lear	ning outcomes			
	. They	are able to perform and c			nethods focusing on plant phy- dependently and document the
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ge	rman)	
S + P (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua vle for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat				· · · ·	
Additio	onal inf	ormation			
Worklo	ad		-		
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
		ee (1 major) Biology (201	1)		
		ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

Modul	e title				Abbreviation
•		cular-, Cell- and Develop	mental Biology of Pla	ints (Practical Cour-	07-MS3ZE-102-m01
se and	Semin	ar 1)		1	
Modul	e coord	inator		Module offered by	
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. com	npl. of module(s)	
15	(not)	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	graduate		pletion of the respec	regular attendance of lab course tive exercises as specified at the
Conter	nts				
					h project on molecular plant and f a principal investigator.
Intend	ed lear	ning outcomes			
		able to work on a scientif sent their results.	ic question, to desigr	n an experimental se	tup as well as to interpret, docu
Course	es (type, i	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + P (I	no info	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho	d of as	sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether
module i	s creditat	ole for bonus)			
followi or b) lo aminat	ing opti og (app tion in g	ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida	itten examination (3c oral examination of o	to 60 minutes, incluence of the minutes of the minu	o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocal	tion of	places			
Additio	onal inf	ormation			
Worklo	bad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
		ee (1 major) Biology (201	1)		
Master	r's degr	ee (1 major) Biology (201	o)		
Master	r's degr	ee (1 major) Biology (201	4)		

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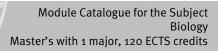


Biochemistry and Structural Biology

(30 ECTS credits)

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	reg. data record Master (120 ECTS) Biologie - 2014	

Modul	e title				Abbreviation	
Curren	t Metho	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Modul	e coord	inator		Module offered by		
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS Method of grading Only after succ		Only after succ. con	npl. of module(s)			
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites	5		
1 seme	ester	graduate				
Conter	nts					
tegies discus sion ar milariti actions of strat tes: Se and ar as spe import ve bee drugs v (evider	of the p sed. Th nd activ ies betv s and m tegies i econdar e often cific de ant clas n devel with im nce-bas	ween plants and pathogo bathogens - bacteria, fung e molecular mechanisms vation of local and system ween plant and human in nolecular mechanisms de n plant protection. Evolut y metabolites are part of essential for survival. The fence strategies will be esses of plant bioactive co loped from plant seconda proved pharmaceutical p sed medicine) as well as	gi and viruses - as we of pathogen recogni- nic defence response nmune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second xplained. Pharmacol mpounds will be pre- ary metabolites that b roperties. Examples	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevar ce strategies agains dary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pl ction, regulation of g this lecture. Differen rstanding plant-path indamental for the d nce of plant seconda t microorganisms an be discussed and g of action and molecu ortion of currently us ad structures to gen y potent plant pharm	ants will be ene expres- ices and si- nogen-inter- levelopment ity metaboli- id herbivores eneral as wel ular targets of red drugs ha- erate potent naceuticals
discus		ning outcomes				
	-	are qualified to perform a	nd organize their sci	entific laboratory wo	rk independently an	d document
the ob		results. They are able to o				
Course	es (type, r	number of weekly contact hours,	anguage — if other than Ge	rman)		
V (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)	
		sessment (type, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
		ble for bonus)				
one of questio	the foll ons) or	be informed about the m owing options will be cho b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	nination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	tion of _l	places				
Additio	onal inf	ormation				
Worklo	oad					
	1					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)		
Master's w	ith 1 majo	r Biology (2014)		urg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 150 / 292
			105. 0010 100			



Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 151 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	title				Abbreviation
Biophy	sics an	d Biochemistry			07-MS3BB-102-m01
Module coordinator				Module offered by	
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and bic of parti opporti	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.
		ning outcomes			
sics, st	ructura				roteins in the fields of biophy- I to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
master	s uegre	ee (1 major) Biology (2014	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 152 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	P=3J= / -J=

Module title				Abbreviation	
Response towards Biotic and Abiotic Factors				07-MS3BA-102-m01	
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical B	liology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
Plant re zymes a lerance and sig	esponse and the . The le nal trai	es to these external facto e levels of a variety of me ecture and seminar will no	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead t plant responses and	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants
Intende	ed leari	ning outcomes			
		able to understand the in pic in the context of the s	•		ment on a molecular level and to
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		s essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachin	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in			
	0	ee (1 major) Biology (2011	·		
1	-	ee (1 major) Biology (2010			
master	Master's degree (1 major) Biology (2014)				

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 153 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation
Developmental Physiology and Adaption of Plants (Lecture and Seminar)				and Seminar)	07-MS3PA-102-m01
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Section Developmental Physiology: The lecture will discuss the physiological processes occurring during ontoge- ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environ- mental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss					
		s in the context of the cu	1	-	
		umber of weekly contact hours, l			
		mation on SWS (weekly o			
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module					
		ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
waster	s aegr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	Γ
	reg. data record Master (120 ECTS) Biologie - 2014	

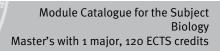
Module title Abbreviation					Abbreviation
Biochemistry and Structural Biology (Practical Course and Semin				Seminar 1)	07-MS3BSF1-102-m01
Module coordinator				Module offered by	,
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its				
The mo logy.	odule p	rovides an in-depth insig	ht into strategies and	l methods of proteir	n biochemistry and structural bio-
Intend	ed lear	ning outcomes			
logy wi	th a foo		s. They are able to pe		biochemistry and structural bio- their scientific laboratory work
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avai	lable)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, inc one candidate each	to the course. Usually, one of the luding multiple choice questions) (30 to 60 minutes) or d) oral ex- sentation (20 to 45 minutes)
Allocat	ion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master	's degr	ee (1 major) Biology (201	1)		
	Master's degree (1 major) Biology (2010)				
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 155 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Modul	e title				Abbreviation
Bioche	mistry	and Structural Biology (I	Practical Course and	Seminar 2)	07-MS3BSF2-102-m01
Module coordinator				Module offere	d by
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biol	ogy
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s	5)
15	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate		pletion of the re	ent: regular attendance of lab course espective exercises as specified at the
Conten	Its				
		perform their research wo ogy in a largely independ			on the topic of biochemistry and principal investigator.
Intend	ed lear	ning outcomes			
chemis	stry and		document the result	ts obtained. The	ic laboratory work in the fields of bio- ey are able to design a research pro-
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)	
S + P (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language	available)
		sessment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered	— if not every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	o to 60 minutes one candidate e	rior to the course. Usually, one of the , including multiple choice questions) ach (30 to 60 minutes) or d) oral ex- presentation (20 to 45 minutes)
Allocat	ion of _l	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Modul	e appea	ars in			
		ee (1 major) Biology (201	1)		
Master	's degr	ee (1 major) Biology (201	o)		
Master	's degr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 156 / 292
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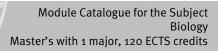




Biophysics (30 ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 157 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation	
Curren	t Metho	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Modul	e coord	inator		Module offered by		
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. cor	npl. of module(s)		
10	10 numerical grade					
Duratio	on	Module level	Other prerequisites	5		
1 seme	ester	graduate				
Conter	nts					
tegies discus sion ar milariti actions of strat tes: Se and are as spe import ve bee drugs v (evider	of the p sed. Th nd activ ies betv s and m tegies i econdar e often cific de ant clas n devel with im nce-bas	ween plants and pathog bathogens - bacteria, fun- e molecular mechanisms vation of local and systen ween plant and human in holecular mechanisms de n plant protection. Evolur y metabolites are part of essential for survival. Th fence strategies will be esses of plant bioactive co loped from plant seconda proved pharmaceutical p sed medicine) as well as	gi and viruses - as we s of pathogen recogni- nic defence response nmune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second explained. Pharmacol ompounds will be pre- ary metabolites that h properties. Examples	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevan ce strategies agains dary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pl ction, regulation of g this lecture. Differer rstanding plant-path andamental for the c nce of plant seconda t microorganisms ar be discussed and g of action and molecu- ortion of currently us ad structures to gen y potent plant pharr	ants will be gene expres- nces and si- hogen-inter- development ary metaboli- nd herbivores general as wel ular targets of sed drugs ha- nerate potent maceuticals
discus		ning outcomes				
	-	are qualified to perform a	and organize their sci	entific laboratory wo	ork independently ar	nd document
the ob		results. They are able to o				
Course	es (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
V (no i	nforma	tion on SWS (weekly con	tact hours) and cours	e language available	e)	
		Sessment (type, scope, langua	age — if other than German,	examination offered — if no	ot every semester, informat	tion on whether
		ole for bonus)		<u></u>		
one of questio	the foll ons) or	be informed about the m owing options will be ch b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	nination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	tion of _l	places				
Additio	onal inf	ormation				
Worklo	oad					
	1					
Teachi	ng cycl	e				
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Master's w	ith 1 majo	r Biology (2014)		urg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 158 / 292
			reg. uaid fec	una master (120 ECTS) DIOlog	nc 2014	1



Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 159 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation	
Biophysics and Biochemistry					07-MS3BB-102-m01
Module coordinator				Module offered by	
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and bio of parti opportu	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.
		ning outcomes			
sics, sti	ructura				roteins in the fields of biophy- I to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam le candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
	Module appears in				
		ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2010			
mastel	Master's degree (1 major) Biology (2014)				

Module title					Abbreviation		
Response towards Biotic and Abiotic Factors					07-MS3BA-102-m01		
Module	e coord	inator		Module offered by			
holder	of the (Chair of Pharmaceutical B	liology	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	ts						
Plant re zymes a lerance and sig	espons and the . The le nal tra	es to these external facto e levels of a variety of me ecture and seminar will no	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses and	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants		
Intende	ed lear	ning outcomes					
		able to understand the in pic in the context of the s			ment on a molecular level and to		
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)			
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)		
		sessment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of		
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
Teachir	Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module							
		ee (1 major) Biology (2011					
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2010					
master	Master's degree (1 major) Biology (2014)						

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 161 / 292
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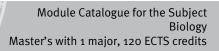
Module title					Abbreviation
Developmental Physiology and Adaption of Plants (Lecture and Seminar)					07-MS3PA-102-m01
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
10 numerical grade					
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Contents					
Section Developmental Physiology: The lecture will discuss the physiological processes occurring during ontoge- ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environ- mental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss					
		s in the context of the cu	1	-	
		umber of weekly contact hours, l			
		mation on SWS (weekly o			
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module					
		ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
waster	s aegr	ee (1 major) Biology (201	4)		

Modul	e title				Abbreviation
Biophy	vsics of	Membraneproteins of	Plants (Practical Cours	se and Seminar 1)	07-MS3BPF1-102-m01
Module	e coord	inator		Module offered by	
Prof. Dr. I. Marten, holder of the Chair of Plant Physiology and Biophysics			r of Plant Physiology	Faculty of Biology	
ECTS	CTS Method of grading Only after succ. c		Only after succ. con	npl. of module(s)	
10 numerical grade					
Duratio	on	Module level	Other prerequisites	;	
1 seme	ster	graduate			
Conten	Its				
nal cha	aracteri		ane proteins. The stude		ds which are used for the functio d into research projects on cur-
Intend	ed lear	ning outcomes			
					ith a focus on plant membrane o document the results obtained.
Course	S (type, i	number of weekly contact hour	s, language — if other than Ge	rman)	
S + P (r	no infoi	mation on SWS (weekl	y contact hours) and co	ourse language avai	lable)
		S essment (type, scope, lang ole for bonus)	guage — if other than German,	examination offered — if n	ot every semester, information on whether
followi or b) lo	ng opti og (app	ons will be chosen: a) rox. 10 to 30 pages) or	written examination (30 c) oral examination of c	o to 60 minutes, inc one candidate each	to the course. Usually, one of the luding multiple choice questions (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat					
Additic	onal inf	ormation			
Worklo	ad				
			,		
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulati	ons for teaching-degree progra	ammes)	
Module	e appea	ars in			
		ee (1 major) Biology (20	011)		
Master	's degr	ee (1 major) Biology (20	010)		
Master	's degr	ee (1 major) Biology (20	014)		

Modul	e title				Abbreviation
•		cular-, Cell- and Develop	mental Biology of Pla	ints (Practical Cour-	07-MS3ZE-102-m01
se and	Semin	ar 1)		1	
Modul	e coord	inator		Module offered by	
holder of the Chair of Plant Physiology and Biophysics			and Biophysics	Faculty of Biology	
ECTS	ECTS Method of grading Only after succ		Only after succ. com	npl. of module(s)	
15 (not) successfully completed					
Duration Module level Other prere		Other prerequisites			
1 seme	ester	graduate		pletion of the respec	regular attendance of lab course tive exercises as specified at the
Conter	nts				
					h project on molecular plant and f a principal investigator.
Intend	ed lear	ning outcomes			
		able to work on a scientif sent their results.	ic question, to desigr	n an experimental se	tup as well as to interpret, docu
Course	es (type, i	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + P (I	no info	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho	d of as	sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether
module i	s creditat	ole for bonus)			
followi or b) lo aminat	ing opti og (app tion in g	ons will be chosen: a) wr rox. 10 to 30 pages) or c) groups of up to 3 candida	itten examination (3c oral examination of o	to 60 minutes, incluence of the minutes of the minu	o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocal	tion of	places			
Additio	onal inf	ormation			
Worklo	bad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
		ee (1 major) Biology (201	1)		
Master	r's degr	ee (1 major) Biology (201	o)		
Master	r's degr	ee (1 major) Biology (201	4)		

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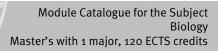


Pharmaceutical Biology

(30 ECTS credits)

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Module title					Abbreviation	
Curren	t Meth	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Modul	e coord	linator		Module offered by		
holder	ofthe	Chair of Plant Physiology	and Biophysics	nd Biophysics Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. compl. of module(s)			
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites	i		
1 seme	1 semester graduate					
Conter	nts					
tegies discus sion ar milarit actions of strat tes: Se and ar as spe import ve bee drugs v (evider	teractions between plants and pathogens comprise evolutionary dynamic and complex systems. Different stra- tegies of the pathogens - bacteria, fungi and viruses - as well as defence mechanisms of the host plants will be discussed. The molecular mechanisms of pathogen recognition, signal transduction, regulation of gene expres- sion and activation of local and systemic defence responses are in the focus of this lecture. Differences and si- milarities between plant and human immune systems will be pointed out. Understanding plant-pathogen-inter- actions and molecular mechanisms determining susceptibility and defence is fundamental for the development of strategies in plant protection. Evolution, function and pharmaceutical relevance of plant secondary metaboli- tes: Secondary metabolites are part of effective plant defence strategies against microorganisms and herbivores and are often essential for survival. The evolution of secondary metabolism will be discussed and general as wel as specific defence strategies will be explained. Pharmacological mechanisms of action and molecular targets of important classes of plant bioactive compounds will be presented. A high proportion of currently used drugs ha- ve been developed from plant secondary metabolites that have been used as lead structures to generate potent drugs with improved pharmaceutical properties. Examples of therapies with very potent plant pharmaceuticals					
discus		ning outcomes				
		are qualified to perform a	nd organize their sci	entific laboratory wo	ork independently ar	nd document
the ob		results. They are able to o				
Course	es (type, i	number of weekly contact hours,	anguage — if other than Ge	rman)		
V (no i	nforma	tion on SWS (weekly con	act hours) and cours	e language available	e)	
		Sessment (type, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, informat	ion on whether
	-	ble for bonus)		C.1		
one of questi	the foll ons) or	be informed about the m lowing options will be cho b) oral examination of or dates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	tion of	places				
Additio	onal inf	ormation				
Worklo	oad					
Teachi	ing cycl	е				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	ammes)		
Master's w	vith 1 majo	r Biology (2014)		irg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 166 / 292



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Module title					Abbreviation
Developmental Physiology and Adaption of Plants (Lecture and Seminar)					07-MS3PA-102-m01
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
10 numerical grade					
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Contents					
Section Developmental Physiology: The lecture will discuss the physiological processes occurring during ontoge- ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environ- mental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss					
		s in the context of the cu	i	-	
		umber of weekly contact hours, l			
		mation on SWS (weekly o			
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module					
		ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
waster	s aegr	ee (1 major) Biology (201	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	
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Module title					Abbreviation		
Response	e towa	ards Biotic and Abiotic Fa	actors		07-MS3BA-102-m01		
Module c	coordi	nator		Module offered by			
holder of	f the C	hair of Pharmaceutical B	iology	Faculty of Biology			
ECTS N	Netho	d of grading	Only after succ. com	pl. of module(s)			
10 n	numeri	ical grade					
Duration		Module level	Other prerequisites				
1 semest	er	graduate					
Contents	Contents						
Plant resp zymes an lerance. T and signa as a sour	ponse nd the The lee al tran rce of i	s to these external facto levels of a variety of me cture and seminar will no sduction. They will also nutrients.	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants		
		ing outcomes					
		ble to understand the in bic in the context of the s			ment on a molecular level and to		
Courses ((type, nu	Imber of weekly contact hours, l	anguage — if other than Ger	man)			
S + V (no	inforr	nation on SWS (weekly c	ontact hours) and co	ourse language avail	able)		
Method of module is cr			ge — if other than German, e	examination offered — if no	t every semester, information on whether		
one of the question:	e follo s) or b	wing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of		
Allocatio	on of p	laces					
Additiona	al info	rmation					
Workload	d						
Teaching	g cycle	1					
Referred	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module a	appear	rs in					
	-	e (1 major) Biology (2011					
	-	e (1 major) Biology (2010					
Master's	degre	e (1 major) Biology (2012	t)				

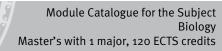
reg. data record Master (120 ECTS) Biologie - 2014	Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 169 / 292
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Module title Abbreviation		Abbreviation			
Biophy	sics an	d Biochemistry			07-MS3BB-102-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme		graduate			
Conten	ts				
and bio of parti opportu	ochemi cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number currently used give students an research.
· · · · · · · · · · · · · · · · · · ·		ning outcomes			
sics, sti	ructura				roteins in the fields of biophy- l to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module					
	-	ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2017			
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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation						
Pharma	Pharmaceutical Biology (Practical Course and Seminar 1) 07-MS3PBF1-102-m01			101		
Module	e coord	inator		Module offered by		
holder	of the (Chair of Pharmaceutica	Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
bations physiol stress is scientifi ques in ned to molecu ge in m form th perime presen zentrur Intende Studen dress s	s. Repro logy or respons fic ques the fie use qua lar bio retaboli e basis ntal de tation o n.uni-w ed learn ts will l	are able to reprogram to ogramming of metaboli behaviour. At the Chain se analysis. Students c stion addressed by the eld of metabolomics/bi- antitative metabolite and logy techniques. Deper- ite analysis or mass spi- to impart scientific co- sign, realisation and cr of the progress. More in ruerzburg.de/.	sm is often correlated to of Pharmaceutical Bio an choose a topic from research team at the C panalytics and/or mole nalysis methods (chror nding on the project, di ectrometry is not requi ncepts and to train stu- itical evaluation of scie formation is available	to phenotypic chang logy, we apply metal the variety of ongoin hair, the methodolog ecular biology. In this natography, mass sp fferent model organi red. Current scientifi dents in the laborato entific experiments a on request or can be methods and/or me	es e. g. in disease de bolomics for gene fund ing projects. Depending gical approach involues module, students we bectrometry) and app sms are studied. Price c questions in the life bry. The module invo s well as the docum e found at http://ww tabolomics approac	evelopment, inction- or ing on the ves techni- vill be trai- oly advanced or knowled- fe sciences lves the ex- entation and w.pbio.bio-
on of d Course		umber of weekly contact hour	s, language — if other than Ge	rman)		
P + S (r	no infor	mation on SWS (weekly	/ contact hours) and co	ourse language avail	able)	
		s essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	t every semester, informat	ion on whether
followi or b) lo	ng opti g (appr	be informed about the ons will be chosen: a) v ox. 10 to 30 pages) or o groups of up to 3 candio	vritten examination (30 c) oral examination of c	o to 60 minutes, inclu one candidate each (uding multiple choic 30 to 60 minutes) or	e questions) r d) oral ex-
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	ons for teaching-degree progra	ammes)		
		-				
Module	e appea	irs in				
Master	's degr	ee (1 major) Biology (20 ee (1 major) Biology (20				
	-	Biology (2014)		Irg • generated 26-Aug-2024	• exam	page 171 / 292
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Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Pharmacy (2012)

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Master's with 1 major Biology (2014)

Module title Abbreviation		Abbreviation			
Pharma	aceutic	al Biology (Practical Cou	rse and Seminar 2)		07-MS3PBF2-102-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Pharmaceutical B	liology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
15	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme:	ster	graduate			regular attendance of lab course respective exercises.
Conten	ts				
jects th actions Aspects and/or and pro	at focu toward s of the metab ogress i ninar. I	s on the regulation of me ds biotic or abiotic stress scientific question will b olomic approaches will b n the understanding of b	etabolism and analys , functional and pher be independently add e optimised for and a iological problems w	is of metabolic path notypic analysis of m lressed by the stude adapted to the speci ill be documented ir	or in collaborative research pro- ways (e.g. in the context of re- nutants, or drug metabolism). nts. Molecular biology methods fic problem. Experimental results in the form of a log and presented /www.pbio.biozentrum.uni-wu-
Intende	ed learı	ning outcomes			
outcom terpret cific tec	e. They and do	/ are able to independent	tly approach scientifi hering to accepted ru entific questions.	c topics in pharmace les of scientific prac	to modify them according to the eutical biology and to perform, in- tice. They are able to apply spe-
					able)
Method	S + P (no information on SWS (weekly contact hours) and course language available) Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)				
followir or b) log	Students will be informed about the length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes)				uding multiple choice questions) 30 to 60 minutes) or d) oral ex-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	9			
	_				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
		•			
Module			>		
	-	ee (1 major) Biology (2011 ee (1 major) Biology (2010			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2012			
	0.				

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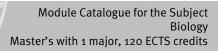


Ecology and Ecophysiology of Plants

(30 ECTS credits)

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation		
Current Methods in Plant	Biology (Lec	ture)		07-MS3-112-m01		
Module coordinator			Module offered by			
holder of the Chair of Plan	t Physiology	and Biophysics	Faculty of Biology			
ECTS Method of grading	g	Only after succ. con	npl. of module(s)			
10 numerical grade						
Duration Module lev	el	Other prerequisites)ther prerequisites			
1 semester graduate						
Contents						
teractions between plants tegies of the pathogens - b discussed. The molecular sion and activation of loca milarities between plant a actions and molecular me of strategies in plant prote tes: Secondary metabolite and are often essential for as specific defence strateg important classes of plant ve been developed from p drugs with improved phant (evidence-based medicine	pacteria, fung mechanisms al and system nd human in chanisms de ection. Evolut s are part of survival. The gies will be e bioactive co lant seconda maceutical p	gi and viruses - as we of pathogen recogni- nic defence response mune systems will b termining susceptibi- cion, function and pha- effective plant defen e evolution of second xplained. Pharmacolo mpounds will be pre- ny metabolites that h roperties. Examples of	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevar ce strategies against lary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pl tion, regulation of g this lecture. Differen rstanding plant-path indamental for the d nee of plant seconda t microorganisms an be discussed and g of action and molecu ortion of currently us ad structures to gen y potent plant pharm	ants will be gene expres- nogen-inter- levelopment ny metaboli- nd herbivores eneral as wel ular targets of sed drugs ha- rerate potent naceuticals	
discussed. Intended learning outcom	05					
The students are qualified		nd organize their sci	entific laboratory wo	rk independently an	nd document	
the obtained results. They for their thesis.						
Courses (type, number of weekly	y contact hours, l	anguage — if other than Gei	rman)			
V (no information on SWS	(weekly cont	act hours) and cours	e language available	2)		
Method of assessment (typ	oe, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, informat	ion on whether	
module is creditable for bonus)	1 1		C (1			
Students will be informed one of the following option questions) or b) oral exam up to 3 candidates (approx	ns will be cho ination of on	osen: a) written exam ie candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice	
Allocation of places						
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examin	nation regulation	s for teaching-degree progra	ammes)			
Master's with 1 major Biology (2014)			irg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 175 / 292	
			era master (120 ECTS) biolog	2014		



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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation		Abbreviation			
Develo	pmenta	al Physiology and Adapti	on of Plants (Lecture	and Seminar)	07-MS3PA-102-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
10	nume	rical grade			
Duration Module level Other prerequisites					
1 seme	ster	graduate			
Conten	ts				
the mo regulat Section grow an mental and org Based more d Würzbu Intende	lecular ion and a Adapt nd deve factors ganism on sele etail. It irg. ed learn ts are o	components (ABA, auxin I functioning. Current jou ation: The lecture will de elop (biogeography, biod s (e. g. plant-insect, plant ic level will be emphasise cted examples from curre will be complemented b	, ethylene etc.) of sig rnal articles on the to al with the ecologica iversity) and with the -fungus interactions) ed in particular (stres ent research, the sem y topic-related guided	malling networks an opics will be present l and environmental interactions of plan . The evolutionary a s and defence react inar will address the d tours in the Botani gical relations and a	focus on introducing students to d explaining their biosynthesis, ed and discussed in the seminar. constraints under which plants its with abiotic and biotic environ daptations on the physiological ions, carnivory, plant protection). e topics covered in the lecture in ical Garden of the University of
		s in the context of the cu	i	-	
		umber of weekly contact hours, l			
		mation on SWS (weekly o			
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module					
		ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
waster	s aegr	ee (1 major) Biology (201	4)		

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Module title Abbreviation		Abbreviation			
Respon	se tow	ards Biotic and Abiotic F	actors		07-MS3BA-102-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Pharmaceutical B	liology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Plant re zymes a lerance and sig	esponse and the . The le nal trai	es to these external facto levels of a variety of me ecture and seminar will no	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants
Intende	ed learr	ning outcomes			
		ble to understand the in pic in the context of the s			ment on a molecular level and to
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in and the second se			
	-	ee (1 major) Biology (2011			
	-	ee (1 major) Biology (2010			
master	s uegre	ee (1 major) Biology (2014	4)		

Master's with 1 major Biology (2014)

Module	title			Abbreviation			
Biophysics and Biochemistryo7-MS3BB-102-mo1					07-MS3BB-102-m01		
Module coordinator				Module offered by			
holder	of the (Chair of Plant Physiology	and Biophysics	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
10	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	graduate					
Conten	ts						
and bio of parti opportu	chemi cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number currently used give students an research.		
· · · · · · · · · · · · · · · · · · ·		ning outcomes					
sics, sti	ructura				roteins in the fields of biophy- l to discuss the results within the		
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)			
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)		
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether		
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)							
Allocat	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
Teachir	ng cycl	e					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in							
Master's degree (1 major) Biology (2011)							
	Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)						
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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title		Abbreviation		
Specifi	c Ecolo	gy and Ecophysiolog	y of Plants (Practical Co	urse and Seminar 1)	07-MS3PÖF1-102-m01
Module coordinator				Module offered by	
holder gy	of the (Chair of Ecophysiolog	y and Vegetation Ecolo-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 semester		graduate			
Conten	Its		•		
concept form of their sl	ots and present cills in t	complex experiments ntations, publications the application of adv	s will be designed, and the or logs. Students will be	ne results will be doo involved in ongoing	cular barrier properties). Working cumented and presented in the gresearch and will consolidate chemistry or molecular biology.
Intend	ed lear	ning outcomes			
They ar	re able				the field of plant ecophysiology. statistically, adhering to the prin
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	rman)	
S + P (r	no infor	mation on SWS (wee	kly contact hours) and co	ourse language availa	able)
		Sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) rox. 10 to 30 pages) o) written examination (3c r c) oral examination of c	o to 60 minutes, inclu one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	-				· · · · · · · · · · · · · · · · · · ·
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regula	ations for teaching-degree progra	immes)	
Module	e appea	ars in			
		ee (1 major) Biology (2011)		
	-	ee (1 major) Biology (
			2010)		

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Module	e title			Abbreviation		
Specifi	c Ecolo	gy and Ecophysiology	of Plants (Practical Co	urse and Seminar 2)	07-MS3PÖF2-102-n	101
Module	e coord	inator		Module offered by		
holder gy	of the (Chair of Ecophysiology	and Vegetation Ecolo-	blo- Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
15	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate		site to assessment: r pletion of the respec urse.	-	
Conten	ts					
They will logical, ration, assess	ill do th , analyt chroma ed and	ngus interactions; biog iis work to a large exter ical, molecular biologic atography, mass spectr , where necessary, moc a whole in the form of a	nt on their own respons cal and/or microbiologi ometry, fluorescence n lified. Students will do	ibility. Based on the cal methods applied nicroscopy, PCR, clor cument and discuss	results obtained, th l (e.g. measuremen ning strategies) will the progress of thei	ne ecophysio- t of transpi- be critically
Intende	ed lear	ning outcomes				
questic ment, i red to a Course	ons ask nterpre answer s (type, r	able to scientifically wo ed in the field of chemi t and to discuss their r scientific questions. number of weekly contact hours mation on SWS (weekly	cal ecology. They are a esults. They have deve , language — if other than Ger	ble to work accordin loped the ability to a man)	g to good practice a pply specific techni	nd to docu-
		· · ·			-	
		sessment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informat	ion on whether
followi or b) lo	ng opti g (appi	be informed about the ons will be chosen: a) v rox. 10 to 30 pages) or o groups of up to 3 candio	vritten examination (3c) oral examination of c	to 60 minutes, inclu one candidate each (uding multiple choic 30 to 60 minutes) o	ce questions) r d) oral ex-
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
			_			
Teachi	ng cycl	8				
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
 Module	e appea	urs in				
		ee (1 major) Biology (20	011)			
Master		=				
Master	-	ee (1 major) Biology (20				
Master	-	ee (1 major) Biology (20 ee (1 major) Biology (20				
Master Master	's degr		914)	rg • generated 26-Aug-2024 4		page 181 / 292

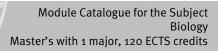


Microbial and Chemical Ecology

(30 ECTS credits)

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Module title				Abbreviation	
Current Meth	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Module coord	linator		Module offered by		
holder of the	Chair of Plant Physiology	and Biophysics	and Biophysics Faculty of Biology		
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)		
10 nume	erical grade				
Duration	Module level	Other prerequisites	i		
1 semester	graduate				
Contents					
tegies of the discussed. The sion and active milarities bet actions and no of strategies if tes: Seconda and are often as specific de important cla ve been deve drugs with im (evidence-bas)	tween plants and pathog pathogens - bacteria, fun- ne molecular mechanisms vation of local and systen ween plant and human in nolecular mechanisms de in plant protection. Evolur ry metabolites are part of essential for survival. Th efence strategies will be e sses of plant bioactive co loped from plant seconda proved pharmaceutical p sed medicine) as well as	gi and viruses - as we s of pathogen recogni- nic defence response nmune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second xplained. Pharmacol ompounds will be pre- ary metabolites that h roperties. Examples	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevar ce strategies agains dary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pla ction, regulation of g this lecture. Differen rstanding plant-path indamental for the d nee of plant seconda t microorganisms an be discussed and ge of action and molecu ortion of currently us ad structures to gen y potent plant pharm	ants will be ene expres- ices and si- nogen-inter- levelopment ry metaboli- id herbivores eneral as wel ilar targets of ed drugs ha- erate potent naceuticals
discussed.	rning outcomes				
	are qualified to perform a	and organize their sci	entific laboratory wo	urk independently an	d document
	results. They are able to o				
Courses (type,	number of weekly contact hours,	language — if other than Ge	rman)		
V (no informa	tion on SWS (weekly con	tact hours) and cours	e language available	2)	
	sessment (type, scope, langua	age — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
module is credital					
one of the fol questions) or	be informed about the m lowing options will be ch b) oral examination of or dates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	nination (30 to 60 mi	nutes, including mul	ltiple choice
Allocation of	places				
Additional in	formation				
Workload					
		-			
Teaching cyc	le				
Referred to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Master's with 1 majo	or Biology (2014)		urg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 183 / 292
			120 ECT3/ DIOLOg	2014	



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Pharmacy (2012)

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Module	title				Abbreviation	
Respon	se tow	ards Biotic and Abiotic F	actors		07-MS3BA-102-m01	
Module	coord	inator		Module offered by		
holder	of the (Chair of Pharmaceutical B	liology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semester graduate						
Conten	ts					
Plant re zymes a lerance and sig	esponse and the . The le nal trai	es to these external facto levels of a variety of me ecture and seminar will no	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants	
Intende	ed learn	ning outcomes				
		ble to understand the in pic in the context of the s			ment on a molecular level and to	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)	
		e essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	9				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	in and the second se				
	-	ee (1 major) Biology (2011				
	-	ee (1 major) Biology (2010				
master	s uegre	ee (1 major) Biology (2014	4)			

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation	
Develo	pmenta	al Physiology and Adapti	on of Plants (Lecture	and Seminar)	07-MS3PA-102-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. compl. of module(s)			
10	nume	rical grade		-		
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
the mo regulat Section grow an mental and org Based more d Würzbu Intende	lecular ion and a Adapt nd deve factors ganism on sele etail. It Irg. ed learn ts are o	components (ABA, auxin I functioning. Current jou ation: The lecture will de elop (biogeography, biod s (e. g. plant-insect, plant ic level will be emphasise cted examples from curre will be complemented b	, ethylene etc.) of sig rnal articles on the to al with the ecologica iversity) and with the -fungus interactions) ed in particular (stres ent research, the sem y topic-related guided	malling networks an opics will be present l and environmental interactions of plan . The evolutionary a s and defence react inar will address the d tours in the Botani gical relations and a	focus on introducing students to d explaining their biosynthesis, ed and discussed in the seminar. constraints under which plants its with abiotic and biotic environ daptations on the physiological ions, carnivory, plant protection). e topics covered in the lecture in ical Garden of the University of	
		s in the context of the cu	1	-		
		umber of weekly contact hours, l				
		mation on SWS (weekly o				
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Module						
		ee (1 major) Biology (201				
	-	ee (1 major) Biology (2010				
waster	s aegr	ee (1 major) Biology (201	4)			

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Module	title				Abbreviation
Biophy	sics an	d Biochemistry			07-MS3BB-102-m01
Module	coord	inator		Module offered by	
holder	holder of the Chair of Plant Physiology and Biophysics			Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semester graduate					
Conten	ts				
and bic of parti opporti	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.
		ning outcomes			
sics, st	ructura				roteins in the fields of biophy- I to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in and a second s			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
master	s uegre	ee (1 major) Biology (2014	4)		

Modul	e title				Abbreviation
Microb	oial and	Chemical Ecology (I	Practical Course and Ser	ninar 1)	07-MS3MCÖF1-102-m01
Modul	e coord	inator		Module offe	red by
holder	of the (Chair of Pharmaceuti	cal Biology	Faculty of Bi	ology
ECTS	Metho	od of grading	Only after succ. co	mpl. of module	e(s)
10	nume	rical grade		-	
Duratio	on	Module level	Other prerequisite	S	
1 seme	ester	graduate			
Conter	nts		I		
comme come f chemis	ensal or amiliar stry as v	r pathogenic interact with a variety of met	ions between animal an hods within the fields o rch techniques. They wil	d plant hosts a f molecular ecc	d chemical ecology, e.g. mutualistic, and microorganisms. Students will be- ology, microbial ecology and analytical d discuss the results of their work in a
Intend	ed lear	ning outcomes			
They a	re able				used in the field of chemical ecology. It them statistically, adhering to the pri
Course	es (type, r	number of weekly contact h	ours, language — if other than G	erman)	
S + P (I	no infor	mation on SWS (wee	ekly contact hours) and o	ourse languag	e available)
		sessment (type, scope, l le for bonus)	anguage — if other than German	, examination offer	ed — if not every semester, information on whether
followi or b) lo	ng opti og (appi	ons will be chosen: a rox. 10 to 30 pages) (a) written examination (or c) oral examination of	o to 60 minute one candidate	prior to the course. Usually, one of the es, including multiple choice questions e each (30 to 60 minutes) or d) oral ex- e) presentation (20 to 45 minutes)
	tion of p				
Additio	onal inf	ormation			
Worklo	bad				
Teachi	ng cycl	e			
			-		
Referre	ed to in	LPOI (examination regu	lations for teaching-degree prog	rammes)	
Modul	e appea	ars in			
		ee (1 major) Biology	(2011)		
master					
	's degr	ee (1 major) Biology			

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Module	e title				Abbreviation
Microb	ial and	Chemical Ecology (Pract	tical Course and Sem	inar 2)	07-MS3MCÖF2-102-m01
Module	e coord	inator		Module offered by	
holder	ofthe	Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
15	(not) s	successfully completed			
Duration Module level Other pres			Other prerequisites		
1 seme	ster	graduate			regular attendance of lab course respective exercises.
Conten	ts				
topics i	in cont		crobial and chemical		dently acquaint themselves with e involved in the development of
Intende	ed lear	ning outcomes			
questic ment, i	ons ask nterpre	ed in the field of chemica	al ecology. They are a	ble to work accordin	able to answer and to discuss og to good practice and to docu- apply specific techniques requi-
Course	S (type, r	number of weekly contact hours,	anguage — if other than Ger	rman)	
S + P (r	o infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
followii or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat					
			-		
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e	-		
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
		-	•		
Module	e appea	ars in			
		ee (1 major) Biology (201	1)		
Master	's degr	ee (1 major) Biology (201	o)		
Master	's degr	ee (1 major) Biology (201	4)		

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System Biology

(30 ECTS credits)

Students who selected this subject area must take module o7-MS3S. The second theoretical module in this subject area may be selected from the list below.

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Module	title				Abbreviation
System Biology (Lecture and Seminar)			07-MS3S-102-m01		
Module	coord	inator		Module offered by	
holder	of the (Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
sults fro	om fun				nd discussed, this includes re- ind metabolic networks as well
Intende	ed leari	ning outcomes			
		cent results in systems b al technologies and resea			an advanced (Master) level know-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	nrs in			
Master	s degr	ee (1 major) Biology (2013	1)		
	Master's degree (1 major) Biology (2010)				
	-	ee (1 major) Biology (2014	•		
	-	ee (1 major) Mathematics ee (1 major) Computation		2)	
master	JUCSI		at mathematics (201.	<u> </u>	

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Module	title				Abbreviation
Bioinformatics (Lecture and Seminar)				07-MS2BI-102-m01	
Module	coord	inator		Module offered by	
holder	of the (Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
and sec	quence		ns and protein familie	es, large-scale data a	is includes results from genome analysis (e. g. net generation se- IncRNAs).
Intende	d learı	ning outcomes			
		cent results in bioinform al technologies and resea			advanced (Master) level know-
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		s essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	ars in			
Master's degree (1 major) Biochemistry (2012) Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014) Master's degree (1 major) Mathematics (2012) Master's degree (1 major) Computational Mathematics (2012)					

Modul	e title				Abbreviation
Neuro	Neurobiology, Behavior and Animal Ecology (Lecture)				07-MS1-102-m01
Modul	Module coordinator			Module offered by	1
holder	of the o	Chair of Neurobiology and	l Genetics	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	graduate			
Conte	nts				
It will p	provide	students with insights in	to these fields, helpi	ng them select their	Physiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.
Intend	ed lear	ning outcomes			
		to know the advantages o relate and integrate differ			g complex biological systems.
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)	
V (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)
		S essment (type, scope, langua ole for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questi	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Alloca	tion of _l	places			
Additi	onal inf	ormation			
Workle	oad				
Teachi	ing cycl	e			
Referr	ed to in	LPOI (examination regulations	for teaching-degree progra	immes)	
Modul	e appea	ars in			
		ee (1 major) Biology (2011	L)		
maste	-				
Maste	0	ee (1 major) Biology (2010 ee (1 major) Biology (2012	,		

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		/

Module title				Abbreviation	
Molecular and Clinical Neurobiology (Lecture and Seminar)			ecture and Seminar)		07-MS1N-102-m01
Module coordinator				Module offered by	
Prof. Dr	. M. Se	ndtner		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	1	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
nervous thies - s the hun Parkins ry, ante vision, cription lecture Fridays module Intende Theoret ses. Courses	Content of the lecture <i>Molekulare und klinische Neurobiologie (Molecular and Clinical Neurobiology)</i> - cells of the nervous system, properties of neurons and glial cells - ion channels and excitability of membranes, channelopathies - synapses, transmitter release, neuromuscular end plate, Myasthenia gravis - motor activity, anatomy of the human motor system, spinal reflexes, motor neuron diseases - cerebellum, ataxia and basal ganglia, Morbus Parkinson - muscles and muscle diseases - somatosensory system and pain - hippocampus, learning and memory, anterograde amnesia, visual agnosia - cortex, Morbus Alzheimer - sleep, EEG, epilepsy - sensory physiology, vision, diseases of the visual system; Reading: Kandel, Principles of Neural Science, 4th Edition: A detailed description of this course is also available at http://neurobiologie.uk-wuerzburg.de/lehrveranstaltungen.html. The lecture Molecular and Clinical Neurobiology (incl. seminar) and <i>Neuroentwicklungsbiologie (Neurodevelopment</i> ; Fridays 8-9 a. m.) together form one theoretical module (10 ECTS). However, you may also complete these two modules separately and have them credited within the area of mandatory electives 2. Intended learning outcomes Theoretical foundations of molecular and clinical neurobiology, developmental mechanisms of neuronal diseases.				
		mation on SWS (weekly o			
module is	creditab	le for bonus)			t every semester, information on whether
one of t questio	he follons) or l	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
	Module appears in				
	-	ee (1 major) Biology (2011			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2012			
			17		

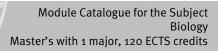
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Module title				Abbreviation	
Animal Ecology and Tropical Biology (Lecture and Seminar)				07-MS1TÖ-102-m01	
Module coordinator				Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
current tions ar	issues nd fooc . In the	in animal ecology. Focus I nets, evolutionary ecolo	s will be on biodiversi gy, chemical ecology	ty and ecosystem fu , tropical ecology, a	of the theoretical foundations and notions, multi-trophic interac- gricultural ecology, and global ed above will be presented and
Intende	ed learr	ning outcomes			
of anim	al ecol		interpret scientific pu		rrent research issues in the field y the acquired knowledge to the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or l	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in and the second se			
	-	ee (1 major) Biology (2011			
	-	ee (1 major) Biology (2010			
Master	s aegre	ee (1 major) Biology (2014	4)		

Module title				Abbreviation	
Communication Biology (Lecture)			07-MS1K-102-m01		
Module	e coord	inator		Module offered by	
holder logy	of the (Chair of Behavioral Physic	ology and Sociobio-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
used b semina	y anima ar sessi	als, but also highlight ada	aptive values and evo	olutionary aspects of	ent communication channels ^F animal signalling. In a follow-up ssing current papers related to
Intend	ed lear	ning outcomes			
learneo logical	d to cor conditi	nect findings from differe	ent research areas, si ore complete picture	uch as physiology, n of a topic. In additio	blex issues in biology. They have eurobiology, behaviour and eco- n, students have learned to pre- nework.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	itten examination (3c oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat					
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	е			
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module					
	-	ee (1 major) Biology (2013			
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			
master	5 uegi	כב (ד ווומוטו) בוטנטצא (2017	1 /		

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Module title				Abbreviation		
Molecular Biology (Lecture)				07-MS2-102-m01		
Module	Module coordinator			Module offered by		
Bioinfo	rmatics	Chair of Microbiology, h , holder of the Chair of iology, Prof. Dr. M. Sau	Cell Biology and De-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
10	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	Contents					
Develop cular bi book "E karyotic cells in quarter molecu Biology of the c nology time). T prokary on mac cell div cation i	Molecular biology of the eukaryotic and prokaryotic cell. The lecture is a joint activity of the Chairs of Cell- and Developmental Biology, Microbiology, Biophysics and Bioinformatics and deals with concepts of modern mole- cular biology from the point of view of these different disciplines. Participants are recommended to read the text- book "Essential Cell Biology". The section on cell biology (app. a quarter of the lecture) mainly discusses the eu- karyotic cell and intends to elucidate the vast diversity in structure and function of molecules, organelles and cells in addition to fundamental principles of modern molecular cell biology. The bioinformatics section (app. a quarter of the lecture) contains a large amount of examples for applications which allow the investigation of the molecular biology of a cell with bioinformatic tools. We closely adhere to the contents of the book "Essential Cell Biology" and present many clear and useful examples for the application of our tools when working on the topics of the other three Chairs. Our vision: bioinformatics essentially is molecular biology based on computing tech- nology (time consuming "wet" experiments can be planned more easily and thus bioinformatics saves precious time). The microbiological section (app. a quarter of the lecture) deals with fundamental molecular aspects of prokaryotic cells. Key aspects include the organisation of the bacterial genome, the transcription and translati- on machinery, mechanisms of regulation of gene expression, transport of small molecules and macromolecules, cell division and differentiation, bacterial motility and chemotaxis, signal transduction and bacterial communi-					
nisms (Intende		ning outcomes				
		nowledge about the mo		eukarvotic and proka	arvotic cell.	
_		umber of weekly contact hours		<i>,</i> ,	,	
		ion on SWS (weekly co			a)	
Method	d of ass	essment (type, scope, lang le for bonus)				on on whether
Students will be informed about the method, length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Worklo	ad					
Teaching cycle						
Referre	d to in	LPOI (examination regulation	ons for teaching-degree progra	ummes)		
Master's wi	ith 1 major	Biology (2014)		rrg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 197 / 292



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

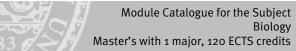
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	reg. data record Master (120 ECTS) Biologie - 2014		

Module title					Abbreviation
Cell- and Developmental Biology Master 1 (Lecture and Seminar 1)			07-MS2ZE1-102-m01		
Module coordinator				Module offered by	
holder logy	ofthe	Chair of Cell Biology a	nd Developmental Bio-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its		•		
<i>und Pe</i> cell and lic disc	<i>rspekti</i> d unrav orders a	ven (Milestones and F vels their biological ca und cancer. In the sem	Perspectives of Cell Biolo auses and consequences	gy). The lecture desc , such as infection, spectives of Cell Biol	nar <i>Zellbiologie-Meilensteine</i> cribes pathological states of the apoptosis, senescence, metabo- <i>logy</i> , classic ground-breaking pu- N.
Intend	ed lear	ning outcomes			
		ossess scientific bacl biology research.	kground knowledge on c	ytopathology and ar	e able to put this into the broade
Course	S (type, r	number of weekly contact ho	urs, language — if other than Gei	man)	
S + V (r	no infoi	mation on SWS (weel	kly contact hours) and co	ourse language avail	able)
		sessment (type, scope, la le for bonus)	nguage — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be	chosen: a) written exam f one candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat			·		
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Biology (2011)				
	Master's degree (1 major) Biology (2010)				
	Master's degree (1 major) Biology (2014)				

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Module	Module title Abbreviation					
Cell- an	d Deve	elopmental Biology Mast	er 2 (Lecture and Ser	ninar 2)	07-MS2ZE2-102-mc	01
Module	e coord	inator		Module offered by		
holder logy	of the (Chair of Cell Biology and	Developmental Bio-	Faculty of Biology		
ECTS Method of grading Only after succ. compl. of module(s)						
10 numerical grade						
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts		•			
nar Ente gy). The book ki velopm sequen ders?: (generat genetic nism for ages nes and cussed Intende	&& The module comprises the lecture <i>Signale und Differenzierung</i> (<i>Signals and Differentiation</i>) and the semi- nar <i>Entwicklungsbiologie-Meilensteine und Perspektiven</i> (<i>Milestones and Perspectives of Developmental Biolo- gy</i>). The lecture <i>Signale und Differenzierung</i> (<i>Signals and Differentiation</i>) is not designed to merely impart text- book knowledge to students. It will rather introduce students to particularly interesting and current topics in de- velopmental biology. Topics covered in the lecture (subject to change): - Cooperation: Development and con- sequences of multicellularity Sex: More than just ? + ? = On the move: Morphogenetic migration All-roun- ders?: Opportunities and limitations of stem cell research Growing new hearts?: Animals and their ability to re- generate Disasters: What do we actually know about metamorphoses? - Always the same?: Plasticity and epi- genetics Metaorganisms: We are never alone Development in changing environments: Ecology and polyphe- nism Developmental biology of behaviour: Everything is learned. Or isn't it? - Evo-devo: A fad? No, been around for ages. In the seminar <i>Entwicklungsbiologie-Meilensteine und Perspektiven</i> (<i>Developmental Biology - Milesto- nes and Outlook</i>), classical ground-breaking scientific articles in the field of developmental biology will be dis- cussed from an unusual point of view. Intended learning outcomes Participants possess a knowledge of the theoretical and molecular biological principles underlying development-					ental Biolo- mpart text- topics in de- and con- All-roun- ability to re- ity and epi- ind polyphe- been around gy - Milesto- will be dis- developmen-
Course	S (type, n	umber of weekly contact hours,	language — if other than Gei	rman)		
S + V (n	io infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
		essment (type, scope, langua le for bonus)	age — if other than German,	examination offered — if no	t every semester, informat	ion on whether
one of t questio	the foll ons) or	be informed about the m owing options will be cho b) oral examination of or lates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nutes, including mu	ltiple choice
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	e appea	ins in				
	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010)					
Master's wi	th 1 majoi	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 200 / 292





Master's degree (1 major) Biology (2014)

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Module title A			Abbreviation		
Microbiology 1 (Lecture and Seminar) 07-MS2M1-112-m01			07-MS2M1-112-m01		
Module coordinator				Module offered by	
holder	of the (Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
al patho	ogenici				adherence and invasion, bacteri- id pathogen interference, current
Intende	ed leari	ning outcomes			
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)	
V + S (n	o infor	mation on SWS (weekly c	ontact hours) and co	urse language availa	able)
		s essment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Biochemistry (2012)				
	Master's degree (1 major) Biology (2011)				
master	Master's degree (1 major) Biology (2014)				

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Module	title				Abbreviation
Microbiology 2 (Lecture and Seminar) 07-MS2M2-112-m01			07-MS2M2-112-m01		
Module coordinator Module offered by					
holder of the Chair of Microbiology Faculty of Biology					
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
ted prol	karyoti				will be presented using selec- ent research methods in infecti-
Intende	d learr	ning outcomes			
		e gained fundamental kno infectious diseases.	owledge in infection b	piology and pathoge	nicity research and the mecha-
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)	
V + S (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		s essment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	he foll ns) or l	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocati	ion of p	olaces			
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 15	places. Places will b	e allocated by lot.
Additio	nal info	ormation			
Workloa	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Biochemistry (2012)				
	Master's degree (1 major) Biology (2011)				
master	s aegre	ee (1 major) Biology (2012	ұ)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 203 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation					Abbreviation
Immun	ology 1	(Lecture and Seminar)			07-MS2IM1-102-m01
Module	e coord	inator		Module offered by	I
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
www.vi	rologie				ormation is available at http:// ka/immunologie/immunolo-
Intende	ed lear	ning outcomes			
		gain knowledge about, a llular immunology.	nd will be able to pre	sent and discuss ba	sic concepts and methods in mo-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (3c oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of _l	olaces			
Additio	nal inf	ormation			
	-				
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
		ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module title					Abbreviation
Immunology 2 (Lecture and Seminar)					07-MS2IM2-102-m01
Module	e coord	inator		Module offered by	
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its				
as auto the imr	oimmur nune s		ion, development of		ected immunology chapters, such immunogenetics, evolution of
	-	able to understand currer	nt topics in immunolo	by and to discuss th	iese in detail.
		number of weekly contact hours,			
	-	rmation on SWS (weekly			able)
Metho	d of ass	·			t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of _l	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
		ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module title					Abbreviation
Virolog	Virology 1 (Lecture and Seminar)			07-MS2V1-102-m01	
Module coordinator				Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		eessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
	_				
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
Master	's degr	ee (1 major) Biology (201	1)		
	Master's degree (1 major) Biology (2010)				
Master	's degr	ee (1 major) Biology (201	4)		

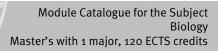
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Module title					Abbreviation
Virolog	Virology 2 (Lecture and Seminar)			07-MS2V2-102-m01	
Module coordinator				Module offered by	1
Manag biology	-	ector of the Institute of Vi	rology and Immuno-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
10	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
This co	urse of	fers an introduction to vi	rology and current re	search in the field of	virology.
Intend	ed lear	ning outcomes			
Studen	ts will	have gained the ability to	understand current	issues in virology an	d to discuss these in depth.
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
one of questic	the foll ons) or	owing options will be cho	osen: a) written exam ne candidate each (30	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulation	s for teaching-degree progra	ammes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201			
Master	's degr	ee (1 major) Biology (201	4)		

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Module title				Abbreviation	
Human Genetics (Lecture and Seminar)					07-MS2HG-102-m01
Module coordinator				Module offered by	
Managi	ing Dire	ector of the Institute of Hu	ıman Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
2 seme	ster	graduate			
Conten	ts				
This mo	odule w	vill discuss current topics	in human genetics.		
Intende	ed learı	ning outcomes			
Studen depth.	ts will I	nave gained the ability to	understand current i	issues in human gen	etics and to discuss these in
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
			ge — if other than German, e	examination offered — if no	t every semester, information on whether
		le for bonus)			
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 min	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat					
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010			
Master's degree (1 major) Biology (2014)					

Module title	,	Abbreviation			
Current Meth	ods in Plant Biology (Lec	ture)		07-MS3-112-m01	
Module coord	dinator		Module offered by		
holder of the	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS Meth	od of grading	Only after succ. con	npl. of module(s)		
10 nume	erical grade				
Duration	Module level	Other prerequisites	5		
1 semester graduate					
Contents					
tegies of the discussed. The sion and active milarities bet actions and mo of strategies tes: Seconda and are often as specific de important cla ve been deve drugs with im (evidence-ba	tween plants and pathog pathogens - bacteria, fun- ne molecular mechanisms vation of local and systen ween plant and human in nolecular mechanisms de in plant protection. Evolur ry metabolites are part of essential for survival. The effence strategies will be en- sesses of plant bioactive co- cloped from plant secondar proved pharmaceutical p sed medicine) as well as	gi and viruses - as we s of pathogen recogni- nic defence response nmune systems will b termining susceptibi- tion, function and ph effective plant defen e evolution of second xplained. Pharmacolo mpounds will be pre- ary metabolites that h roperties. Examples	ell as defence mecha ition, signal transduc s are in the focus of be pointed out. Unde lity and defence is fu armaceutical relevar ce strategies agains dary metabolism will ogical mechanisms of sented. A high propo- nave been used as le of therapies with ver	nisms of the host pla ction, regulation of g this lecture. Differen rstanding plant-path indamental for the d nee of plant seconda t microorganisms an be discussed and ge of action and molecu ortion of currently us ad structures to gen y potent plant pharm	ants will be ene expres- ices and si- nogen-inter- levelopment ry metaboli- id herbivores eneral as wel ilar targets of ed drugs ha- erate potent naceuticals
discussed.	rning outcomes				
	are qualified to perform a	and organize their sci	entific laboratory wo	urk independently an	d document
	results. They are able to o				
Courses (type,	number of weekly contact hours,	anguage — if other than Ge	rman)		
V (no informa	ation on SWS (weekly con	tact hours) and cours	e language available	2)	
	sessment (type, scope, langua	ge — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
module is credita			C.1		
one of the fol questions) or	be informed about the m lowing options will be ch b) oral examination of or dates (approx. 30 to 60 m	osen: a) written exam ne candidate each (30	nination (30 to 60 mi	nutes, including mul	ltiple choice
Allocation of	places				
Additional in	formation				
Workload					
		-			
Teaching cyc	le				
Referred to in	LPOI (examination regulation	s for teaching-degree progra	ammes)		
Master's with 1 majo	or Biology (2014)		urg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 209 / 292
				014	



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Pharmacy (2012)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 210 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module	e title				Abbreviation
Developmental Physiology and Adaption of Plants (Lecture and Seminar)			and Seminar)	07-MS3PA-102-m01	
Module coordinator				Module offered by	
holder	of the (Chair of Pharmaceutical E	Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Contents					
Section Developmental Physiology: The lecture will discuss the physiological processes occurring during ontoge- ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environ- mental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss					
		s in the context of the cu	1	-	
		umber of weekly contact hours, l			
		mation on SWS (weekly o			
		essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether
one of t questic	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (30	ination (30 to 60 mi	ent prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
	Module appears in				
		ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
waster	Master's degree (1 major) Biology (2014)				

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 211 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title					Abbreviation
Biophy	Biophysics and Biochemistry				07-MS3BB-102-m01
Module coordinator				Module offered by	
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
and bic of parti opporti	ochemis cipants unity to	stry which is illustrated w and their interests, prace experience the practical	vith specific examples tical demonstrations	s from current resear of methods that are	ane transport, structural biology rch. Depending on the number e currently used give students an research.
		ning outcomes			
sics, st	ructura				roteins in the fields of biophy- I to discuss the results within the
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the follons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	Teaching cycle				
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (2010			
master	Master's degree (1 major) Biology (2014)				

Module title				Abbreviation	
Response towards Biotic and Abiotic Factors			actors		07-MS3BA-102-m01
Module coordinator				Module offered by	
holder of the Chair of Pharmaceutical Biology			liology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Plant re zymes a lerance and sig	espons and the . The le nal tra	es to these external facto e levels of a variety of me ecture and seminar will n	rs lead to changes in tabolites. Some of th ot only discuss these	the regulation of ge ese responses lead plant responses an	and abiotic (stress) factors. ne expression, the activity of en- to increased stress resistance/to- d the mechanisms of perception s and herbivores for using plants
Intende	ed lear	ning outcomes			
		able to understand the in pic in the context of the s	•		ment on a molecular level and to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S + V (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language avail	able)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	0	ee (1 major) Biology (2013	·		
	-	ee (1 major) Biology (2010 ee (1 major) Biology (201			
Master's degree (1 major) Biology (2014)					

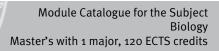
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 213 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation	
System Biology (Practical Course and Seminar 1)				07-MS3SYF1-102-m01	
Module coordinator				Module offered by	
holder	of the (Chair of Bioinformatics	_	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. compl. of module(s)		
10	nume	rical grade			
Duration Module level		Other prerequisites			
1 seme	ster	graduate			
Conten	ts				
ticular, protein	make s structi	students proficient in a d ure analysis and protein f	ynamical method in s folding, genome anal	systems biology (are ysis and evolution; c	systems biology and will, in par- as that may be selected include dynamic network analysis, the dy- metabolism, statistical model-
Intende	ed leari	ning outcomes			
They ar	e able				the field of systems biology. statistically, adhering to the prin-
Course	Courses (type, number of weekly contact hours, language — if other than German)				
P + S (n	o infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		eessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
Students will be informed about the length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes)					
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
Master's degree (1 major) Biology (2010)					
Master's degree (1 major) Biology (2014)					
Master's degree (1 major) Mathematics (2012) Master's degree (1 major) Computational Mathematics (2012)					
master s degree (1 major) computational mathematics (2012)					

Module title					Abbreviation
System Biology (Practical Course and Seminar 2)			07-MS3SYF2-102-m01		
Module coordinator			Module offered by		
holder	ofthe	Chair of Bioinformatics		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. com	npl. of module(s)	
15	(not)	successfully completed			
		Module level	Other prerequisites		
1 semester graduate		graduate	Admission prerequisite to assessment: regular attendance of lab course and successful completion of the respective exercises as specified at the beginning of the course.		
Conten	Its				
ticular, protein namics ling). T	make struct of pro he tech	students proficient in a d ure analysis and protein tein-protein interactions,	lynamical method in s folding, genome anal modelling cellular re lated on the basis of	systems biology (are ysis and evolution; gulation; modelling the results obtained	systems biology and will, in par- as that may be selected include dynamic network analysis, the dy metabolism, statistical model- and are modified where neces- erm paper.
Intend	ed lear	ning outcomes			
nise a s	scientif		pioinformatics and to	document the result	ndependently perform and orga- is obtained. Students are able to for their thesis.
Course	S (type, r	number of weekly contact hours,	language — if other than Ger	rman)	
P + S (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
		Sessment (type, scope, langua le for bonus)	age — if other than German, e	examination offered — if no	ot every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr	itten examination (3c oral examination of o	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex-
Allocat			<u></u>		entation (20 to 45 minutes)
					entation (20 to 45 minutes)
					entation (20 to 45 minutes)
Additio	onal inf	ormation			entation (20 to 45 minutes)
Additio	onal inf	ormation			entation (20 to 45 minutes)
		ormation			entation (20 to 45 minutes)
		ormation			entation (20 to 45 minutes)
 Worklo 	ad				entation (20 to 45 minutes)
	ad				entation (20 to 45 minutes)
 Worklo Teachi	oad ng cycl	e	c for togehing down		entation (20 to 45 minutes)
 Worklo Teachin Referre	oad ng cycl		s for teaching-degree progra		entation (20 to 45 minutes)
 Worklo Teachin Referre	ng cycl ed to in	e LPO I (examination regulation	s for teaching-degree progra		entation (20 to 45 minutes)
 Worklo Teachin Referre Modulo	ad ng cycl ed to in e appea	e LPOI (examination regulation			entation (20 to 45 minutes)
 Worklo Teachin Referre Module Master	ng cycl ed to in e appea	e LPO I (examination regulation	1)		entation (20 to 45 minutes)
 Worklo Teachin Referre Modulo Master Master	ed to in e appea 's degr	e LPO I (examination regulation ars in ee (1 major) Biology (201	1) 0)		
 Worklo Teachi Referre Module Master Master Master Master	ad ng cycl ed to in 's degr 's degr 's degr 's degr	e LPO I (examination regulation ars in ee (1 major) Biology (201 ee (1 major) Biology (201	1) 0) 4) 5 (2012)	Immes)	

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Non-focus Lab Course

(ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 216 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation		
Labora	tory pra	actical course 2			07-MSL2-102-m01	
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
10	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.	
Conten	ts					
Practica	al cours	se, summer school or wo	rkshop on specific to	pics in biology (dura	tion: 4-6 weeks).	
Intende	ed leari	ning outcomes				
		specific methods and lab hniques later on in a rese		ected fields of biolog	gy. Ability to apply these me-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
P (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
followii or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014				

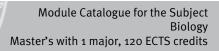
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 217 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation	
Labora	tory pra	actical course 3			07-MSL3-102-m01
Module	e coord	inator		Module offered by	
Coordin	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
15	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	rice in advance.
Conten	ts				
Practica	al cours	se, summer school or wo	rkshop on specific to	pics in biology (dura	tion: 6-9 weeks).
Intende	ed leari	ning outcomes			
		specific methods and lab hniques later on in a rese		ected fields of biolog	gy. Ability to apply these me-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no in	format	ion on SWS (weekly cont	act hours) and course	e language available	e)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followii or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010 ee (1 major) Biology (2014			

Module title					Abbreviation
Practic	al Cour	se as exchange student	2		07-MSA2-102-m01
Module	e coord	inator		Module offered by	
Coordi	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
		ment on a biological top to present their data.	c. Students spend 4-	6 weeks working on	a well-defined scientific project
Intende	ed lear	ning outcomes			
		selected methods and la hniques later on in a rese		lected fields of biolo	ogy. Ability to apply these me-
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	nformat	ion on SWS (weekly cont	act hours) and course	e language available	e)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)				

Module title					Abbreviation
Practic	al Cour	se as exchange student	3		07-MSA3-102-m01
Module	e coord	inator		Module offered by	
Coordi	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
15	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
		ment on a biological top how to present their data		9 weeks working on	a well-defined scientific lab pro-
Intende	ed lear	ning outcomes			
		selected methods and la hniques later on in a rese		lected fields of biolo	ogy. Ability to apply these me-
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	nformat	ion on SWS (weekly cont	act hours) and course	e language available	e)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followi or b) lo	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)				





Compulsory Electives 2

(15 ECTS credits)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 221 / 292
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Module title					Abbreviation
Labora	tory pra	actical course 1			07-MSL1-102-m01
Module	Module coordinator			Module offered by	
Coordi	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	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	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
Practic	al cours	se, summer school or wo	rkshop on specific to	pics in biology (dura	tion: 2-3 weeks).
Intende	ed leari	ning outcomes			
		specific methods and lab hniques later on in a rese		ected fields of biolog	gy. Ability to apply these me-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	format	ion on SWS (weekly cont	act hours) and course	e language available)
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followi or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2010			
Master	's degr	ee (1 major) Biology (2014	4)		

Module title				Abbreviation	
Practic	al Cour	se as exchange student :	1		07-MSA1-102-m01
Module	Module coordinator			Module offered by	
Coordi	nator B	ioCareers	_	Faculty of Biology	
ECTS	Metho	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	graduate	Please consult with	course advisory serv	vice in advance.
Conten	ts				
Practica	al cours	se during stay abroad on	a selected topic in bi	ology (duration: 2-3	weeks).
Intende	ed learı	ning outcomes			
		selected methods and la hniques later on in a rese		lected fields of biolo	ogy. Ability to apply these me-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	format	ion on SWS (weekly cont	act hours) and course	e language available	2)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followi or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master's degree (1 major) Biology (2011)					
	•	ee (1 major) Biology (2010	•		
Master	's degr	ee (1 major) Biology (2014	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 223 / 292
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Module title					Abbreviation	
Bioche	emistry,	Physiology and Genetic	s of Mammalian Cell	Culture	07-MSCC-111-m01	
Modul	e coord	inator		Module offered by	<u> </u>	
degree	e progra	mme coordinator Biologi	e (Biology)	Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
5	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conter	nts					
tion, g					d cell structures, cell prolifera- ts, fundamental cell analytical	
Intend	ed lear	ning outcomes				
		able to understand the bi ese techniques.	ochemistry, physiolo	gy and genetics of r	nammalian cell culture, and are	
Course	es (type, r	number of weekly contact hours, l	anguage — if other than Gei	rman)		
S (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language availabl	e)	
		Sessment (type, scope, langua ile for bonus)	ge — if other than German,	examination offered — if n	ot every semester, information on whether	
10 to 3 groups	o page of up t	s) or c) oral examination	of one candidate eac	h (usually 30 to 60 i	estions) or b) log (usually approx. ninutes) or d) oral examination in ion (usually 20 to 45 minutes)	
Allocat	tion of _l	olaces				
Additio	onal inf	ormation				
Worklo	oad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Modul	Module appears in					
Master	Module appears in Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014) Master's degree (1 major) FOKUS Life Sciences (2012)					

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 224 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation		
Molecu	lar Tec	hniques		03-MSMT-111-m01		
Module	e coord	inator		Module offered by		
Dean of	f the Fa	culty of Biology	_	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
Introdu	ction to	o new and cutting-edge m	nolecular techniques.	Methods for scienti	fic investigation.	
Intende	ed learı	ning outcomes				
		amiliar with cutting-edge set ups to answer scienti		ques and can improv	ve experimental strategies and	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available)	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
10 to 30 groups	o pages of up t	s) or c) oral examination of	of one candidate eac	n (usually 30 to 60 m	stions) or b) log (usually approx. ninutes) or d) oral examination in on (usually 20 to 45 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	-	ee (1 major) Biology (2014				
Master	Master's degree (1 major) FOKUS Life Sciences (2012)					

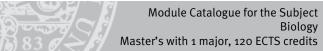
Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 225 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title			Abbreviation		
Linux and Perl					07-ML-122-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
		o the Linux operating systometric questions.	tem, writing compute	r programs using the	e programming language Perl to
Intende	ed leari	ning outcomes			
Studen	ts are a	able to use Linux as user	and to write simple P	erl scripts to answer	bioinformatic questions.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to		or b) log (approx. 10 to 30 pages) al examination in groups of up to
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
		ee (1 major) Biology (201			
Master'	Master's degree (1 major) Biology (2014)				

Module title			Abbreviation		
Methods in Life Sciences				07-MLS1-122-m01	
Module	coord	inator		Module offered by	
Dean of	fStudie	es Biologie (Biology)		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
models	and ge		s, protein and molecu	ular biology techniqu	, immunohistochemistry, mouse ues, PCR, advanced protein bio-
Intende	ed learr	ning outcomes			
		able to review and expand and techniques to design e			techniques and are able to choo-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one car prox. 30	ndidate o to 60				stions) or b) oral examination of of up to 3 candidates (usually ap-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (201:			
	-	ee (1 major) Biology (201	-		
Master's degree (1 major) FOKUS Life Sciences (2012)					

Module title			Abbreviation			
Methods in Life Sciences			07-MLS1B-141-m01			
Module	coord	inator		Module offered by		
degree	progra	mme coordinator Biolog	gie (Biology)	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
models	and ge	lecular techniques, lipie ene-knockout approach thods in bioinformatics	es, protein and molec	ular biology techniqu		
Intende	ed learr	ning outcomes				
		ble to review and expa d techniques to desigr			techniques and are a	able to choo-
Course	S (type, n	umber of weekly contact hours	, language — if other than Gei	man)		
• 0	7-MLS1	as 2 components; infor .B-1-141: V (no informat 1B-1-141: V (no informat	ion on language and n	umber of weekly con	tact hours available	,
		e essment (type, scope, langule for bonus)	lage — if other than German,	examination offered — if no	t every semester, informati	on on whether
		as the following 2 asse	ssment components]	o pass the module a	s a whole students	mustnass
Assess • 7 • a) 0	ment c ECTS c) writte r c) ora andida	assessment component omponent to module co redits, method of gradi n examination (30-60 n l examination of on can tes (approx. 30-60 min	mponent o7-MLS1B-1 ng: (not) successfully ninutes, including mu didate each (30-60 mi utes) or e) presentatio	completed ltiple choice questio nutes) or d) oral exa n (20-45 minutes). St	ns) or b) log (ca.10- mination in groups u	30 pages) Ip to three
 the method, length and scope of the assessment prior to the course. Language of assessment: English Assessment component to module component o4-MLS1B-1-141: Methoden in den Lebenswissenschaften 7 ECTS credits, method of grading: (not) successfully completed written examination or oral examination of an candidate each or in groups up to three candidates. Language of assessment: English 						
Allocat	ion of p	olaces				
Additio	nal info	ormation				
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
		ee (1 major) Biology (20	11)			
				ra a concrete d of Auror	over	
waster's wi	ui i major	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 228 / 292





Master's degree (1 major) Biology (2014)

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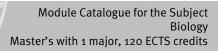
Module title			Abbreviation		
Topics and Concepts in Life Sciences			07-MLS2-122-m01		
Module	coord	inator		Module offered by	
Dean of	f Studio	es Biologie (Biology)		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
gy, and	biome				and immunity, integrative biolo- , Drosophila, computational bio-
Intende	ed learı	ning outcomes			
		e an overview of the curre ignificance and scientific	•	the Graduate Schoo	l of Life Sciences and are able to
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
one car prox. 30	ndidate o to 60				stions) or b) oral examination of of up to 3 candidates (usually ap-
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (201:			
	•	ee (1 major) Biology (201			
Master	Master's degree (1 major) FOKUS Life Sciences (2012)				

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 230 / 292
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Module title				Abbreviation	
Topics and Concepts in Life Sciences				07-MLS2B-141-m01	
Module	e coord	inator		Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
7	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its				
gy, and	l biome				and immunity, integrative biolo- , Drosophila, computational bio-
Intend	ed lear	ning outcomes			
		e an overview of the curre ignificance and scientific		the Graduate Schoo	l of Life Sciences and are able to
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written tes	exami	nation or oral examinatio	n of one candidate ea	ach or oral examinat	ion in groups of up to 3 candida-
-	-	ssessment: English			
Allocat	ion of _l	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (201			
Master	Master's degree (1 major) Biology (2014)				

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title			Abbreviation			
Curren	Current Methods in Plant Biology B 07-MS3B-121-m01					
Module coordinator			Module offered by			
holder	ofthe	Chair of Plant Physiology	and Biophysics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
7	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	graduate				
Conten	Its					
This lecture addresses topics of pathogen recognition and signal transduction in plants, molecular and organis- mic defence and the pharmaceutical relevance of plant-derived bioactive compounds. Plant immunobiology: in- teractions between plants and pathogens comprise evolutionary dynamic and complex systems. Different stra- tegies of the pathogens - bacteria, fungi and viruses - as well as defence mechanisms of the host plants will be discussed. The molecular mechanisms of pathogen recognition, signal transduction, regulation of gene expres- sion and activation of local and systemic defence responses are in the focus of this lecture. Differences and si- milarities between plant and human immune systems will be pointed out. Understanding plant-pathogen-inter- actions and molecular mechanisms determining susceptibility and defence is fundamental for the development of strategies in plant protection. Evolution, function and pharmaceutical relevance of plant secondary metaboli- tes: Secondary metabolites are part of effective plant defence strategies against microorganisms and herbivores and are often essential for survival. The evolution of secondary metabolism will be discussed and general as well as specific defence strategies will be explained. Pharmacological mechanisms of action and molecular targets of important classes of plant bioactive compounds will be presented. A high proportion of currently used drugs ha- ve been developed from plant secondary metabolites that have been used as lead structures to generate potent drugs with improved pharmaceutical properties. Examples of therapies with very potent plant pharmaceuticals (evidence-based medicine) as well as possibilities and limitations of phytotherapy (traditional medicine) will be discussed. Intended learning outcomes The students are qualified to perform and organize their scientific laboratory work independently and document the obtained results. They are able to design a research project and are prepared to work on a scientific question						
	ir thesis S (type, r	number of weekly contact hours,	language — if other than Ge	rman)		
		tion on SWS (weekly con			2)	
module i	s creditab	Sessment (type, scope, langu le for bonus)			· ·	
a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one can- didate each (approx. 30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocat	ion of _l	olaces				
Additional information						
Workload						
Teaching cycle						
Referre	ed to in	LPO I (examination regulation	ns for teaching-degree progra	ammes)		
Master's w	ith 1 majo	r Biology (2014)		ırg ● generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 232 / 292



Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014)

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Module title				Abbreviation	
Developmental Physiology and Adaption of Plants B			07-MPAB-121-m01		
Module coordinator		Module offered by			
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
7		successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes		graduate			
Contents Section Developmental Physiology: The lecture will discuss the physiological processes occurring during ontoge- ny as well as the reaction of plants to various environmental parameters. It will focus on introducing students to the molecular components (ABA, auxin, ethylene etc.) of signalling networks and explaining their biosynthesis, regulation and functioning. Current journal articles on the topics will be presented and discussed in the seminar. Section Adaptation: The lecture will deal with the ecological and environmental constraints under which plants grow and develop (biogeography, biodiversity) and with the interactions of plants with abiotic and biotic environ- mental factors (e. g. plant-insect, plant-fungus interactions). The evolutionary adaptations on the physiological and organismic level will be emphasised in particular (stress and defence reactions, carnivory, plant protection). Based on selected examples from current research, the seminar will address the topics covered in the lecture in more detail. It will be complemented by topic-related guided tours in the Botanical Garden of the University of Würzburg. Intended learning outcomes Students are qualified to recognise ecological and physiological relations and are able to interpret and discuss					
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + S (n	o infor	mation on SWS (weekly o	ontact hours) and co	ourse language availa	able)
		e ssment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014)				

Module	title				Abbreviation	
Respon	ise tow	ards Biotic and Abiotic F	actors B	07-MBAB-121-m01		
Module coordinator Module offered by						
holder	of the (Chair of Pharmaceutical B	Biology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
In their natural environment, plants are constantly exposed to a variety of biotic and abiotic (stress) factors. Plant responses to these external factors lead to changes in the regulation of gene expression, the activity of en- zymes and the levels of a variety of metabolites. Some of these responses lead to increased stress resistance/to- lerance. The lecture will not only discuss these plant responses and the mechanisms of perception and signal transduction. It will also examine the strategies of microorganisms and herbivores for using plants as a source of nutrients.						
Intende	ed lear	ning outcomes				
		able to understand the in pic in the context of the s			ment on a molecular level and to	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V + S (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one can didate each (approx. 30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module						
	-	ee (1 major) Biology (201 ee (1 major) Biology (201				

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Module	title				Abbreviation	
Biophys	sics an	d Biochemistry B		07-MBBB-121-m01		
Module coordinator Module offered by						
holder of the Chair of Plant Physiology and Biophysics Faculty of Biology						
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Content	ts					
The module imparts theoretical and methodological knowledge of plant membrane transport, structural biology and biochemistry which is illustrated with specific examples from current research. Depending on the number of participants and their interests, practical demonstrations of methods that are currently used give students an opportunity to experience the practical aspects of biophysical and biochemical research.				ch. Depending on the number currently used give students an		
Intende	d learr	ning outcomes				
Students are able to use methods dealing with soluble proteins or membrane proteins in the fields of biophy- sics, structural biology and biochemistry. They are able to interpret the data and to discuss the results within the context of current knowledge.						
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no information on SWS (weekly contact hours) and course language available)					2)	
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)						
a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one can didate each (approx. 30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocati	ion of p	olaces				
Additional information						
Workload						
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	ins in				
	-	ee (1 major) Biology (2011				
Master'	s degre	ee (1 major) Biology (2014	4)			

Modul	e title				Abbreviation
Neurobiology, Behaviour and Animal Ecology B 07-MS1B-121-m01				07-MS1B-121-m01	
Module coordinator Module offered by					
holder of the Chair of Neurobiology and Genetics Faculty of Biology					
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
7	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	graduate			
Conter	nts				
It will p	orovide	students with insights in	to these fields, helpi	ng them select their	hysiology and Animal Ecology. F1 and F2 practical courses and anced modules of this focus.
Intend	ed lear	ning outcomes			
		o know the advantages o elate and integrate differ			g complex biological systems.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no i	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60
Allocat	tion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	е			
Referre	ed to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Modul	e appea	ars in			
	-	ee (1 major) Biology (2013			
Master	's degr	ee (1 major) Biology (201	4)		

Module	title				Abbreviation		
Neurog	enetic	s of Behaviour B		07-MNBB-121-m01			
Module	coord	inator		Module offered by			
holder	of the (Chair of Neurobiology and	Genetics	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)			
5	(not) s	successfully completed					
Duratio	n	Module level	Other prerequisites				
1 semes	ster	graduate					
Contents							
how the ant topi ting, mi	e brain ics of b irror ne	controls behaviour. The behavioural neurobiology	lecture and seminar v (incl. e. g. sleep, con nisms of auditory-gui	vill give a state-of-th itrol of appetite and ded behaviour, neur	l tools to dissect the principles of le art view on current and import- feeding, social behaviour, ma- rogenetic techniques) focusing on atode C. elegans.		
Intende	ed lear	ning outcomes					
		students acquire theoret neral and the neurogenet		ical insights into cur	rrent topics in the field of neuro-		
		umber of weekly contact hours, l	-	man)			
		ion on SWS (weekly cont			2)		
Method	l of ass				t every semester, information on whether		
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60		
Allocati	ion of p	olaces					
Additio	nal inf	ormation					
Worklo	ad						
Teachir	ng cycl	e					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)			
Module							
	0	ee (1 major) Biology (201	·				
Master'	s degr	ee (1 major) Biology (2014	4)				

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Module	e title				Abbreviation
Neuron	nodula	tion and Neuronal Develo	pment B		07-MEN-MNDB-141-m01
Module	Module coordinator			Module offered by	· · · · · · · · · · · · · · · · · · ·
holder	of the (Chair of Neurobiology and	d Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semester graduate					
Conten	ts				
aptic tr stems u biology	ansmis used to v. Focus	sion and membrane pote study modulation of neu is on the establishment	ential, theoretical and ironal circuits. Funda of the neuroectoderr	l functional aspects mental principles of n, pattern generation	receptors, modulation of syn- of neuromodulation, model sy- molecular developmental neuro- n and regional specification, neu- g, neuronal connectivity.
Intende	ed lear	ning outcomes			
		earn fundamental princip current research in the f		pmodulation and net	uronal development and obtain
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written tes	examiı	nation or oral examinatio	n of one candidate ea	ach or oral examinat	ion in groups of up to 3 candida-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module					
Master	's degr	ee (1 major) Biology (2014	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 239 / 292
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Module	title				Abbreviation	
Endoge	nous C	locks		07-MECB-121-m01		
Module	coord	inator		Module offered by		
holder	of the (Chair of Neurobiology and	Genetics	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	ts					
neurona clocks a be expl	al orga and the ained l	nisation of the clock in the underlying mechanisms	e brain of mammals will be discussed on	and insects. The bio the molecular, cellu	animals, with a focus on the logical functions of endogenous ılar and organismic levels. It will d aspects regarding e.g. shift	
Intende	ed leari	ning outcomes				
		earn fundamental princip search in the field.	bles underlying chron	obiology/endogeno	us clocks and obtain an insight	
Courses	5 (type, n	umber of weekly contact hours, la	anguage — if other than Ger	man)		
V (no information on SWS (weekly contact hours) and course language available)						
		s essment (type, scope, languag le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one can- didate each (approx. 30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)						
Allocati	ion of p	olaces				
Additional information						
Worklo	ad					
Teaching cycle						
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	appea	irs in				
	-	ee (1 major) Biology (2011				
Master'	s degr	ee (1 major) Biology (2012	t)			

	Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 240 / 292
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Module	title				Abbreviation
Animal Ecology and Tropical Biology 07-MTÖB-121-m01				07-MTÖB-121-m01	
Module	coord	inator		Module offered by	
holder	of the Q	Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Content	ts				
current	issues 1d fooc	in animal ecology. Focus	will be on biodivers	ity and ecosystem fu	of the theoretical foundations and nctions, multi-trophic interac- gricultural ecology, and global
Intende	d learr	ning outcomes			
The students will acquire an advanced knowledge of ecological theories and current research issues in the field of animal ecology. They will be able to interpret scientific publications and apply the acquired knowledge to the solution of current environmental risks.					
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	e)
Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)					
a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one can- didate each (approx. 30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes)					
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Workload					
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	appea	irs in			
	-	ee (1 major) Biology (2011 ee (1 major) Biology (2014			
	0				

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Module title Abb			Abbreviation	
Animal Eco	ology and Tropical Biology 2	В		07-MTÖ2B-121-m01
Module coordinator Module offe			Module offered by	
holder of t	he Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS M	ethod of grading	Only after succ. com	pl. of module(s)	
5 (n	ot) successfully completed			
Duration	Module level	Other prerequisites		
1 semeste	r graduate			
Contents				
focus is or gical featu	n the global significance of tro ires of these highly diverse bi	opical systems (ecos	ystem goods and eco	opical communities. A special osystem services), but the biolo-
· · · · · · · · · · · · · · · · · · ·	earning outcomes			
tropical ec		to interpret scientific		research issues in the field of knowledge they have acquired to
Courses (ty	ype, number of weekly contact hours, la	anguage — if other than Ger	man)	
V (no infor	mation on SWS (weekly cont	act hours) and cours	e language available	2)
	assessment (type, scope, languag ditable for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
				or b) oral examination of one can- 3 candidates (approx. 30 to 60
Allocation	of places			
Additional	linformation			
Workload				
Teaching o	cycle			
Referred t	o in LPO I (examination regulations	for teaching-degree progra	mmes)	
Module ap	opears in			
	legree (1 major) Biology (2011			
Master's d	legree (1 major) Biology (2014	(†)		

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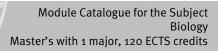
Module title			Abbreviation		
Commu	inicatio	on Biology B			07-MKB-121-m01
Module coordinator				Module offered by	
holder of the Chair of Behavioral Physiology and Sociobio- logy			ology and Sociobio-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
7	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
		eal with physiological an als, but also highlight ada			ent communication channels animal signalling.
Intende	ed learr	ning outcomes			
learned logical	l to con conditi	nect findings from differe	ent research areas, si ore complete picture	uch as physiology, no	blex issues in biology. They have eurobiology, behaviour and eco- n, students have learned to pre- nework.
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + S (n	io infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) ora	al exan		e each (approx. 30 to	60 minutes) or d) or	or b) log (approx. 10 to 30 pages) al examination in groups of up to nutes)
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycle	9			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	rs in			
		ee (1 major) Biology (201			
Master'	s degre	ee (1 major) Biology (2014	4)		

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Module title			Abbreviation		
Experi	mental	Sociobiology B			07-MESB-121-m01
Module coordinator				Module offered by	
holder of the Chair of Behavioral Physiology and Sociobio- logy			ology and Sociobio-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
7	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	Its				
neurob nar ses pic of t	iologic sion, s he lecti	al and behavioural mech tudents will deepen their ure.	anisms underlying th	e organisation of so	so focus on the physiological, cial groups. In a follow-up semi- g current papers related to the to-
Intend	ed lear	ning outcomes			
ral biol	ogy. St re able	udents are able to recogr to formulate scientific qu	nise and interpret rela	ationships between v	olex correlations in behaviou- various aspects of sociobiology. d are able to discuss cutting edge
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	rman)	
S + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)
		s essment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	or b) log (approx. 10 to 30 pages) al examination in groups of up to nutes)
Allocat			<u>, , , , , , , , , , , , , , , , , , , </u>		•
			,		
Additio	onal inf	ormation			
Worklo	ad		·		
Teachi	ng cycl	e			
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)	
Module	e appea	in in			
	0	ee (1 major) Biology (201 ee (1 major) Biology (201			

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Module title			Abbreviation			
Molecul	ar Bio	logy B			07-MS2B-121-m01	
Module coordinator Module offered by						
Bioinfor	matics	Chair of Microbiology, h , holder of the Chair of iology, Prof. Dr. M. Sau	⁻ Cell Biology and De-	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. cor	npl. of module(s)		
7	(not) s	successfully completed				
Duration	n	Module level	Other prerequisites	;		
1 semes	ter	graduate				
Content	s					
Develop cular bio book "Es karyotic cells in a quarter of molecula Biology" of the ot nology (fi time). Th prokaryo on mach cell divis cation m nisms (E	menta ology f ssentia cell ar additic of the ar biol ' and p ther th time c ther th time c ne mic otic ce ninery, sion ar nechar Brock).	ogy of the eukaryotic a al Biology, Microbiology rom the point of view of al Cell Biology". The se and intends to elucidate on to fundamental prin lecture) contains a larg ogy of a cell with bioin present many clear and ree Chairs. Our vision: onsuming "wet" experi robiological section (a lls. Key aspects include mechanisms of regula and differentiation, bact hisms. Recommended	y, Biophysics and Bioir of these different discip- ction on cell biology (a the vast diversity in st ciples of modern mole- ge amount of examples formatic tools. We clos- useful examples for th bioinformatics essenti- ments can be planned pp. a quarter of the lec- e the organisation of th tion of gene expressio- erial motility and chem	nformatics and deals plines. Participants a pp. a quarter of the l tructure and function cular cell biology. The for applications whi sely adhere to the con e application of our fally is molecular biol more easily and thu ture) deals with fund he bacterial genome, n, transport of small notaxis, signal transc	with concepts of mo re recommended to ecture) mainly discu- of molecules, organ e bioinformatics sec ch allow the investig ntents of the book "f tools when working logy based on comp s bioinformatics sav lamental molecular a the transcription an molecules and macu- duction and bacteria	odern mole- read the text- isses the eu- helles and tion (app. a gation of the Essential Cell on the topics uting tech- res precious aspects of id translati- romolecules, I communi-
Master l	evel k	nowledge about the m	olecular biology of the	eukaryotic and proka	aryotic cell.	
Courses	(type, n	umber of weekly contact hour	s, language — if other than Ge	rman)		
V (no inf	format	ion on SWS (weekly co	ntact hours) and cours	e language available	2)	
		essment (type, scope, lang le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, informati	ion on whether
	ach (a	nination (30 to 60 min pprox. 30 to 60 minute				
Allocatio	on of p	olaces				
Addition	nal info	ormation				
Workloa	ıd					
Teaching	g cycl	9				
Referred	l to in	LPOI (examination regulation	ons for teaching-degree progra	ammes)		
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Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014)

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Module	e title				Abbreviation
Microb	iology	1 B			07-MM1-B-121-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
al path	ogenic				adherence and invasion, bacteri- nd pathogen interference, current
Intende	ed lear	ning outcomes			
		are able to understand fu infectious diseases.	ndamental theories o	of molecular microbi	ology and infection biology,
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	urs in			
	-	ee (1 major) Biology (2013			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biomedicine	-		
Master	's degr	ee (1 major) Biomedicine	(2012)		

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Module	e title				Abbreviation
Microb	iology	2 B			07-MM2-B-121-m01
Module coordinator				Module offered by	
holder	of the (Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
ted pro	karyoti				will be presented using selec- ent research methods in infecti-
Intende	ed lear	ning outcomes			
		e gained fundamental kno infectious diseases.	owledge in infection l	piology and pathoge	nicity research and the mecha-
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
V (no in	format	tion on SWS (weekly cont	act hours) and cours	e language available	a)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
	each (a				or b) oral examination of one can- 3 candidates (approx. 30 to 60
Allocat	ion of _l	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
		ee (1 major) Biology (201	1)		
	-	ee (1 major) Biology (201	-		
	-	ee (1 major) Biomedicine			
Master	's degr	ee (1 major) Biomedicine	(2012)		

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Module title Abbreviation					Abbreviation	
Cell- and Development-Biology Master 1 B				07-MZE1-B-121-m01		
Module coordinator				Module offered by		
holder of the Chair of Cell Biology and Developmental Biology			Developmental Bio-	Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
3	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts	~	• •			
		llpathologie (Cytopatholo onsequences, such as inf			cell and unravels their biological c disorders and cancer.	
Intende	ed lear	ning outcomes				
		ossess scientific backgro biology research.	ound knowledge on c	ytopathology and are	e able to put this into the broader	
Course	S (type, 1	number of weekly contact hours,	language — if other than Ge	rman)		
V (no ir	nforma	tion on language and nur	nber of weekly conta	ct hours available)		
		Sessment (type, scope, langua ble for bonus)	age — if other than German,	examination offered — if no	ot every semester, information on whether	
#REF!						
Allocat	ion of	places				
Additio	nal inf	ormation				
Worklo	ad					
			_			
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
Master's degree (1 major) Biology (2014)						
	Master's degree (1 major) Biomedicine (2013) Master's degree (1 major) Biomedicine (2012)					
Master	's degr	ee (1 major) Biomedicine	(2012)			

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	reg. data record Master (120 ECTS) Biologie - 2014	

Module title				Abbreviation		
Cell- and Development-Biology Master 2 B				07-MZE2-B-121-m01		
Module coordinator				Module offered by		
holder of the Chair of Cell Biology and Developmental Bio- logy			Developmental Bio-	Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. com	pl. of module(s)		
3	(not)	successfully completed				
Duration Module level		Other prerequisites				
1 semester graduate						
Conter	Its					
lopmer quence ders?: genera genetio	knowledge to students. It will rather introduce students to particularly interesting and current topics in deve- lopmental biology. Topics covered in the lecture (subject to change): - Cooperation: Development and conse- quences of multicellularity Sex: More than just ? + ? = On the move: Morphogenetic migration All-roun- ders?: Opportunities and limitations of stem cell research Growing new hearts?: Animals and their ability to re- generate Disasters: What do we actually know about metamorphoses? - Always the same?: Plasticity and epi- genetics Metaorganisms: We are never alone Development in changing environments: Ecology and polyphe- nism Developmental biology of behaviour: Everything is learned. Or isn't it? - Evo-devo: A fad? No, been around					
Intend	ed lear	ning outcomes				
		ossess a knowledge of th d are able to put this into			inciples underlying developmen- nental biology research.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ii	nforma	tion on language and nur	nber of weekly conta	ct hours available)		
		Sessment (type, scope, langua vle for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
#REF!						
Allocat	ion of _l	places				
Additio	onal inf	ormation				
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	Master's degree (1 major) Biology (2014) Master's degree (1 major) Biomedicine (2013)					
1	Master's degree (1 major) Biomedicine (2012)					

Module title				Abbreviation		
Bioinformatics B					07-MBI-B-121-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Bioinformatics		Faculty of Biology		
ECTS	ECTS Method of grading Only after succ. co			pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	Other prerequisites		
1 seme	ster	graduate				
Conten	ts					
and see	quence		ns and protein familie	es, large-scale data a	is includes results from genome analysis (e. g. net generation se- lncRNAs).	
Intende	ed learı	ning outcomes				
		cent results in bioinform al technologies and resea		•	advanced (Master) level know-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
Students will be informed about the method, length and scope of the assessment prior to the course. a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (30 to 60 minutes)						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
Master's degree (1 major) Biology (2014)						
Master's degree (1 major) Mathematics (2012)						
Master's degree (1 major) Biomedicine (2013) Master's degree (1 major) Biomedicine (2012)						
	Master's degree (1 major) Computational Mathematics (2012)					
master 5 degree (1 major) computational mathematics (2012)						

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Module title				Abbreviation		
Systems Biology B					07-MS-B-121-m01	
Module coordinator				Module offered by		
holder	of the (Chair of Bioinformatics		Faculty of Biology		
ECTS	ECTS Method of grading Only after succ. compl. of module(s)					
5	(not) s	successfully completed				
Duration Module level Other prerequisites						
1 seme	ster	graduate				
Conten	ts					
sults fro	om fun				nd discussed, this includes re- and metabolic networks as well	
Intende	ed leari	ning outcomes				
		cent results in systems b al technologies and resea			an advanced (Master) level know-	
Course	S (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)	
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus) Students will be informed about the method, length and scope of the assessment prior to the course. a) written examination (30 to 60 minutes, including multiple choice questions) or b) oral examination of one candidate each (30 to 60 minutes) or c) oral examination in groups of up to 3 candidates (30 to 60 minutes)						
Allocat					30 to 00 minutes)	
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
Master's degree (1 major) Biology (2014)						
Master's degree (1 major) Mathematics (2012)						
	Master's degree (1 major) Biomedicine (2013)					
	Master's degree (1 major) Biomedicine (2012) Master's degree (1 major) Computational Mathematics (2012)					
master s'uegree (1 major) computational mathematics (2012)						

Module title					Abbreviation	
Immunology 1 B o					03-MIM1-B-121-m01	
Module	e coord	inator		Module offered by		
holder	of the I	Professorship of Immuno	genetics	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
mune-r	nediate		This incorporates co	mmon literature read	ow a deeper understanding of im- lings, presentations and tests on guage.	
Intende	ed lear	ning outcomes				
		gain a knowledge of fund le to present and discuss		d methods in molec	ular and cellular immunology	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V + S (r	infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	estions) or b) log (10 to 30 pages) al examination in groups of up to nutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ıg cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	urs in				
Master	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (201				
	-	ee (1 major) Biomedicine	-			
Master	Master's degree (1 major) Biomedicine (2012)					

Module title					Abbreviation	
Immunology 2 B 03-MIM2-B-1					03-MIM2-B-121-m01	
Module	e coord	inator		Module offered by		
holder	of the I	Professorship of Immuno	genetics	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
such as on, infe selecte	autoir ection i d immu	mmunity and immune mo	odulation, developme his incorporates com	nt of the immune sy mon literature readi	ected immunology chapters , stem, immunogenetics, evoluti- ngs, presentations and tests on	
		able to understand currer	nt problems in immur	nology and to discus	s these in detail	
		number of weekly contact hours, l	· ·			
		mation on SWS (weekly o			able)	
Method	d of ass				t every semester, information on whether	
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	estions) or b) log (10 to 30 pages) al examination in groups of up to nutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
	-	ee (1 major) Biology (201:				
	-	ee (1 major) Biology (2014	-			
	-	ee (1 major) Biomedicine				
master	Master's degree (1 major) Biomedicine (2012)					

Module title					Abbreviation	
Immun	ology 1	BS			03-MIM1-BS-121-m01	
Module	e coord	inator		Module offered by		
holder	of the I	Professorship of Immuno	genetics	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
mune-r	nediate		This incorporates co	mmon literature read	ow a deeper understanding of im- lings, presentations and tests on guage.	
Intende	ed lear	ning outcomes				
		gain a knowledge of fund le to present and discuss		d methods in molec	ular and cellular immunology	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
S (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	estions) or b) log (10 to 30 pages) al examination in groups of up to nutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	appea	urs in				
Master	's degr	ee (1 major) Biology (2013	1)			
	-	ee (1 major) Biology (2014	-			
	-	ee (1 major) Biomedicine				
Master	Master's degree (1 major) Biomedicine (2012)					

Module title					Abbreviation	
Immunology 2 BS 03-MIM2-E					03-MIM2-BS-121-m01	
Module	e coord	inator		Module offered by		
holder	of the l	Professorship of Immuno	genetics	Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
such as on, infe selecte	autoin ection i d imm	mmunity and immune mo	dulation, developme	nt of the immune sy mon literature readi	ected immunology chapters , stem, immunogenetics, evoluti- ngs, presentations and tests on	
		able to understand currer	nt problems in immur	ology and to discus	s these in detail.	
		number of weekly contact hours, l	· ·			
		tion on SWS (weekly cont			e)	
		Sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)	
Allocat	ion of _l	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	e appea	ars in				
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2014				
	-	ee (1 major) Biomedicine	-			
master	Master's degree (1 major) Biomedicine (2012)					

Module title Abbreviation					Abbreviation	
Virolog	y 1 B			03-MV1-B-121-m01		
Module	Module coordinator			Module offered by		
holder	of the (Chair of Virology		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
This mo	odule w	vill discuss contemporary	topics in virology.			
Intende	ed learı	ning outcomes				
Studen	ts are a	ble to understand currer	nt problems in virolog	y and to discuss the	ese in detail.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
#REF!						
Allocat	ion of r	laces				
Additio	nal inf	ormation				
Worklo						
	<u></u>					
Teachir	ng cycl	2				
	<u>15 cyce</u>	-				
Referre	d to in	IPOI (examination regulation)	for teaching-degree progra	mmec)		
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module	annea	in in				
		ee (1 major) Biology (201:	1)			
	-	ee (1 major) Biology (201				
	-	ee (1 major) Biomedicine				
Master	Master's degree (1 major) Biomedicine (2012)					

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Module title Abbreviation					Abbreviation	
Virolog	Virology 2 B				03-MV2-B-121-m01	
Module	e coord	inator		Module offered by		
holder	of the (Chair of Virology		Faculty of Medicine		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
This mo	odule w	vill discuss contemporary	topics in virology.			
Intende	ed learı	ning outcomes				
Studen	ts are a	able to understand currer	nt problems in virolog	y and to discuss the	se in detail.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
Method	d of ass	essment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
		le for bonus)				
#REF!						
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	irs in				
Master	's degr	ee (1 major) Biology (201:	1)			
	•	ee (1 major) Biology (201				
	-	ee (1 major) Biomedicine	-			
Master	Master's degree (1 major) Biomedicine (2012)					

Module title					Abbreviation	
Nucleu	s Work	shop			07-MKE-WO-121-m01	
Module	e coord	inator		Module offered by		
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
7	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	Contents					
ture (su pe, nuc somes.	ibject t lear lai - struc	o change): - nuclear enve mina and their role in chr ture and function of nucl	lope, nuclear pores a omatin organisation	and nuclear-cytoplas and genetic disease	Topics to be covered in the lec- mic transport nuclear envelo- s DNA, chromatin and chromo-	
		ning outcomes				
		able to perform practical		-	nowledge.	
		number of weekly contact hours, l				
Ű + V (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
one of t questio	the foll ons) or	owing options will be cho	osen: a) written exam e candidate each (3c	ination (30 to 60 mi	nt prior to the course. Usually, nutes, including multiple choice) oral examination in groups of	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module	e appea	urs in				
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (2014	-			
	-	ee (1 major) Biomedicine				
Master	's degr	ee (1 major) Biomedicine	(2012)			

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Module title					Abbreviation	
Gene Regulation and Signal Transduction					07-MGRSD-121-m01	
Modul	e coord	inator		Module offered by		
Dean o	of Studi	es Biologie (Biology)		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
3	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate				
Conter	nts					
discus	sed. Th	e lecture will discuss reg	ulatory mechanisms	on the transcriptiona	bacteria will be described and al and post transcriptional level. na in pathogenic bacteria.	
Intend	ed lear	ning outcomes				
		e gained an insight into c ific problem.	urrent technologies a	nd are able to choos	se the appropriate technology to	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	rman)		
V (no i	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
one ca		e each (approx. 30 to 60 r			estions) or b) oral examination of of up to 3 candidates (approx. 30	
Allocat	tion of j	olaces				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	е				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Modul	e appea	in and a second s				
1	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

Module title					Abbreviation	
Microb	ial Ecol	ogy			07-MMIÖK-121-m01	
Module	coord	inator		Module offered by		
Dean of	fStudie	es Biologie (Biology)		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
phasis and ver ture cor kulare I man pa	is laid tebrate mplem Wikrob thoger	on the interaction of mut es and, where appropriat ents the focus Infektions iologie / Infektionsbiolog	ualistic bacteria with e, the comparison wi biologie (Infection Bi gie (Cellular and Mole ion mechanisms are p	other organisms inc th commensal and p ology) of the degree cular Biology / Infec oresented. Thus, the	a their environment. A major em- cluding bacteria, invertebrates athogenic interactions. The lec- programme Zelluläre und Mole- tion Biology) in which mainly hu- lecture intends to identify and organisms.	
Intende	ed learr	ning outcomes				
		gained an insight into c fic problem.	urrent technologies a	nd are able to choos	se the appropriate technology to	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available	e)	
		e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
	ndidate	each (approx. 30 to 60 r			estions) or b) oral examination of of up to 3 candidates (approx. 30	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ng cycl	e				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module						
	-	ee (1 major) Biology (2013				
waster	s degre	ee (1 major) Biology (2014	4)			

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Module	title				Abbreviation
Ecology	/ of Ho	ney Bees and Wild Bees			07-MHWB-121-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
ment, b sis, fora	oreedin aging b	g, diseases); resource us	e of honeybees and v axonomy of wild bees	wild bees (bee dance , opponents of bees	f beekeeping (colony manage- es, flower visiting, pollen analy- , wild bees in different habitats
Intende	ed leari	ning outcomes			
ween b	ees an	d plants, and on aspects	of nature conservatio	on. They will be profi	d honeybees, on interactions bet- cient in experimental methods of letermination of wild bees.
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (no in	Iformat	tion on SWS (weekly cont	act hours) and cours	e language available	e)
		essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) ora	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocati			· · ·		
Additio	nal inf	ormation			
Worklo	ad				
Teachir	Teaching cycle				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	irs in			
	-	ee (1 major) Biology (2011			
Master'	s degr	ee (1 major) Biology (2014	4)		

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Module	Module title Abbreviation				Abbreviation
Ecology	y and T	axonomy of Insects			07-METI-121-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
ledge o and fiel dition, logical	f speci ld work compil charac	al form is provided. Obse on ecological or behavic ation of species richness teristics of arthropods wi	ervation and recordin our biological charact and niche differentia	g of arthropods in ha eristics of the respec ation. The aim is to li	ropods, especially insects. Know- abitat. Experimental laboratory ctive groups of arthropods. In ad- nk the phylogenetic and morpho-
Intende	ed leari	ning outcomes			
to apply sign an	y speci d evalı	al identification keys as v late experimental approa	well as to record and thes in ecological la	evaluate special beh boratory and field st	r insect orders. They will be able naviours. They will be able to de- udies.
		umber of weekly contact hours, l			
		ion on SWS (weekly cont			
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	in and the second se			
	-	ee (1 major) Biology (201			
Master'	's degr	ee (1 major) Biology (2014	4)		

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Module	title				Abbreviation
Modell	ing in E	cology			07-MMIE-121-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
	ues. Th	ney will also develop thei			y of simulation and modelling blems in the fields of demogra-
Intende	ed learı	ning outcomes			
modelli	ing tecl				with a variety of simulation and n of problems in the field of de-
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	e)
		e ssment (type, scope, langua, le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in			
	-	ee (1 major) Biology (2011	-		
Master	s degr	ee (1 major) Biology (2014	4)		

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Module	Module title Abbreviation				
Agroec	ology				07-MAGRE-121-m01
Module	coord	inator		Module offered by	
holder	of the O	Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
benefic vention	ial orga ally far	anisms-interactions, and med agricultural land (pl	biological pest contr ant diversity, herbive	ol. Experiment in co re, predator, pollina	nunities in different crops, pest- mparison of organically and con- itor diversity). Field trip to nature of agri-environmental measures.
Intende	ed learr	ning outcomes			
munitie perform	es in ag 1 statis	ricultural ecosystems. Th tical analyses, and to inte	ey will be able to per erpret the results. The	form scientific work ey will be familiar wi	functional role of arthropod com- in agricultural ecosystems, to th problems and possible soluti- y and ecosystem services.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (no in	format	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) ora	al exan		e each (approx. 30 to	60 minutes) or d) or	estions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	irs in			
	0	ee (1 major) Biology (2011 ee (1 major) Biology (2014	·		

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Module	title				Abbreviation
Forest I	Ecology	/			07-MFEC-121-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
terns ar well as	nd fund the sta	tional groups. The course tistical analysis of data.			of management on diversity pat- ms and work of determination as
· · · · · ·		ning outcomes			
nities ir	n forest	s. On the basis of comple	ex data sets, they wil	l learn to analyse an	tional role of arthropod commu- d discuss the structuring pat- nservation-related aspects.
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (no ir	format	tion on SWS (weekly cont	act hours) and cours	e language available	e)
		s essment (type, scope, langua) le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ıg cycl	e			
Referre	d to in	LPO I (examination regulations	for teaching-degree progra	mmes)	
Module	appea	in and a second s			
		ee (1 major) Biology (2011			
Master'	s degr	ee (1 major) Biology (2014	4)		

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Module	title				Abbreviation
Tropica	l Ecolo	gy			07-MTROP-121-m01
Module	coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
Student ta analy	ts shou /sis thr	Ild become familiar with	different project stag	es from experiment of	mented in a tropical ecosystem. design, implementation and da- ns in the field of tropical ecology
Intende	ed leari	ning outcomes			
and nat	ture co etectio	nservation-related resear	ch in the tropics. The	y will learn field eco	nced knowledge of ecological logical methods for the quanti- al knowledge in the field of data
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü (no in	format	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		s essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) ora	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	Teaching cycle				
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	in and a second s			
	-	ee (1 major) Biology (2013			
Master'	s degr	ee (1 major) Biology (2014	4)		

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Module title Abbreviation				Abbreviation	
Semina	ar Expe	rimental Animal Ecology			07-MSET-121-m01
Module	e coord	inator		Module offered by	
holder	of the (Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate			
Conten	ts				
Bees aı METI), I Waldök	nd Hon Modelli cologie	eybees, 07-MHWB), Ökol ierung in der Ökologie (Ed (Forest Ecology, 07-MFEC	ogie und Taxonomie cological Modelling, o	der Insekten (Ecolog o7-MMIE), Agrarökolo	nenökologie (Ecology of Wild y and Taxonomy of Insects, 07- ogie (Agroecology, 07-MAGRE), MTROP).
		ning outcomes			
		e acquired in-depth know ite and critically analyse i			ntal animal ecology and are able ions.
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
S (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
or c) or	al exan		e each (approx. 30 to	60 minutes) or d) or	stions) or b) log (10 to 30 pages) al examination in groups of up to nutes)
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (2013			
Master	Master's degree (1 major) Biology (2014)				

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Module	title				Abbreviation	
Present	tation o	of Scientific Data			07-MPWD-112-m01	
Module coordinator				Module offered by		
Coordir	nator Bi	oCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	graduate				
Conten	Contents					
dents w the logi per or re well as ons can of chap less tha ding pro kers. Intende The stu familiar	Principles for the preparation of scientific manuscripts, citations and the presentation of scientific data. Stu- dents will write a scientific mini review and present this in a talk (15 minutes). Content, structure, coherence and the logical chain of arguments will be discussed. Students will write and publish (where possible) a scientific pa- per or review on a selected topic in a scientific journal. The students' work will be based on original papers as well as on reviews and will follow the instructions of a scientific journal of the students' choice. These instructi- ons can be found on the website of the respective journal under "Instructions to Authors" or similar. Both length of chapters and structure of the article should be based on the style of the journal selected. Attendance of no less than 20 scientific talks (e. g. defences of doctoral theses, presentations of research projects, retreats) inclu- ding presentations by guest speakers. Students are to obtain proof of attendance from the organisers or spea- kers. Intended learning outcomes The students are familiar with the details of publishing scientific data in written and oral form. They have become familiar with the methodology of scientific publishing in oral or written fashion. In addition, they have enhanced					
	-	eading, speaking and wri	-	man)		
		ion on SWS (weekly cont			e)	
		essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
followir or b) log	ng optio g (appr	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	tten examination (30 oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocati	ion of p	olaces				
Biology	Maste	r's: no restrictions. Bioch	emistry Master's: 10	places. Places will b	e allocated by lot.	
Additio	nal info	ormation				
Worklo	ad					
Teachir	Teaching cycle					
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)		
Module						
Master'	s degre	ee (1 major) Biochemistry ee (1 major) Biology (2011 ee (1 major) Biology (2012	L)			

Master's with 1 major Biology (2014)

Module title			Abbreviation	
Quality Management, Good Practice,	Biosafety		07-MGLN-112-m01	
Module coordinator		Module offered by		
Coordinator BioCareers	_	Faculty of Biology		
ECTS Method of grading	Only after succ. com	pl. of module(s)		
5 numerical grade				
Duration Module level	Other prerequisites			
1 semester graduate				
Contents Political instruments to conserve biodiversity (convention on biodiversity (CBD), German strategy on biodiversi- ty) as well as corporate social responsibility in the private economy, sponsoring and marketing are discussed. These topics are critically analysed with regard to sustainability, credibility and effectiveness. In addition, the students become familiar with strategies to prevent biodiversity loss and actively contribute to these activities. Good practice in the biosciences, quality assurance approaches and quality culture. Structure, idea and funda- mental principles of quality management approaches, DIN EN ISO 9001, regulatory documents and framework in the biosciences including biotechnology, biosafety, biosecurity, risk assessment. Intended learning outcomes The students know relevant international conventions and German regulations on the conservation of biodiver-				
sity. They have become familiar with the ty. They are aware of corporate response among companies and organisations tal principles of "good practice" in response of quality management circles. They he sues and know how to properly handle ve developed a sensitivity towards the cio-ethical issues in the bioscience are ficer and are qualified for working in C ween environmental organisations, go	sibilities in this regard on environmental prof earch and developme ave developed a disti e biological agents an e complex interdepend ea. Students possess SR or environmental r	d and know how to s tection. The students nt, and have unders nct sensitivity toward d organisms, includ dencies in nature an the knowledge and nanagement at majo	support cooperative approaches s are familiar with the fundamen- tood the fundamental principles ds biosafety and biosecurity is- ing GMOs. In addition, they ha- d are able to critically discuss so- skills required of a biosafety of-	
Courses (type, number of weekly contact hours,	language — if other than Ger	man)		
V + S (no information on SWS (weekly	contact hours) and co	ourse language avail	able)	
Method of assessment (type, scope, languar module is creditable for bonus)	age — if other than German, e	examination offered — if no	ot every semester, information on whether	
written examination (approx. 30 to 60	minutes) including m	ultiple choice quest	ions	
Allocation of places				
Additional information				
Workload				
Teaching cycle				
Referred to in LPO I (examination regulation	is for teaching-degree progra	mmes)		
Module appears in				
Master's degree (1 major) Biology (201	11)			
Master's degree (1 major) Biology (201				

Master's with 1 major Biology (2014)

Module	title				Abbreviation
Brain and mind 07-MGUG-112-m01				07-MGUG-112-m01	
Module	coord	inator		Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
sion ma	aking a				human memory, intentional deci- Fundamental terms and princip-
Intende	ed learr	ning outcomes			
awaren	ess of		terms and definitions		hey have developed an increased nd concerns arising with know-
Courses	5 (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available)
		e essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followir or b) log	ng optio g (appr	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	tten examination (3c oral examination of o	to 60 minutes, inclu ne candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	for teaching-degree progra	mmes)	
Module	appea	ins in			
	-	ee (1 major) Biology (2011			
Master'	s degre	ee (1 major) Biology (2014	(j)		

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Module title Abbreviation			Abbreviation		
Epistemology and History of Science 07-MWIG-112-m01			07-MWIG-112-m01		
Module	coord	inator		Module offered by	
Coordir	nator B	ioCareers		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	graduate			
Conten	ts				
sion ma	aking a				human memory, intentional deci- Fundamental terms and princip-
Intende	ed leari	ning outcomes			
awaren	ess of		terms and definitions		hey have developed an increased Ind concerns arising with know-
Courses	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
S (no in	Iformat	ion on SWS (weekly cont	act hours) and cours	e language available)
		s essment (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
followir or b) log	ng optio g (appr	ons will be chosen: a) wri ox. 10 to 30 pages) or c)	tten examination (3c oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPO I (examination regulations	for teaching-degree progra	mmes)	
Module	appea	irs in			
	-	ee (1 major) Biology (2011	-		
Master'	s degr	ee (1 major) Biology (2014	4)		

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Master (120 ECTS) Biologie - 2014	page 272 / 292
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Module title				Abbreviation		
Entrep	oreneuria	l Management in Bios	ciences		07-MEMB-112-m01	
Modul	e coordi	nator		Module offered by		
Coordi	inator Bio	oCareers		Faculty of Biology		
ECTS	Metho	d of grading	Only after succ. con	pl. of module(s)		
10	(not) s	uccessfully completed				
Durati	on	Module level	Other prerequisites			
1 seme	ester	graduate				
Conter	nts					
and ter stries, hed co ject wo cal rele	Overview of the bioscience sector with a particular focus on research and development, fundamental methods and technologies, recent developments and trends in established as well as up-and-coming high-tech indu- stries, legal framework, financing and business models, best practice examples of start-ups as well as establis- hed companies, criteria of project-based work, characteristics and elements of project work, case studies, pro- ject work in interdisciplinary teams of students where possible, selected guest lectures giving the course practi- cal relevance.					
		ing outcomes				
ar with start-u sed wo what a	Students have acquired an insight into industries and developments in the natural sciences. They are famili- ar with the characteristics of industries and established businesses as well as with specific characteristics of start-up companies and up-and-coming technologies. Students are also familiar with the criteria of project-ba- sed work and have gained experience working in interdisciplinary teams. They are better qualified to evaluate what approaches or methods from individual disciplines are most suitable for solving a particular problem. The experience of interdisciplinary project work students have acquired will help them enhance their entrepreneurial ckille					
Course	es (type, nu	umber of weekly contact hours	, language — if other than Ger	man)		
compo • c	onent. 07-MEME	omprises 2 module con 3-1-102: S (no informat 3-2-112: S (no informat	ion on SWS (weekly co	ntact hours) and cou	urse language availa	ıble)
		essment (type, scope, langu e for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informat	ion on whether
Assess low. Ur vidual	sment in nless sta assessn	this module comprises ted otherwise, success tents.	sful completion of the	module will require s	successful completion	
 Assessment in module component o7-MEMB-1-102: Basics in the Management of Natural Sciences 5 ECTS, Method of grading: (not) successfully completed Students will be informed about the length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes) Assessment in module component 07-MEMB-2-112: Project Management 5 ECTS, Method of grading: (not) successfully completed Students will be informed about the length and scope of the assessment prior to the course. Usually, one of the following options will be chosen: a) written examination (30 to 60 minutes, including multiple choice questions) or b) log (approx. 10 to 30 pages) or c) oral examination of one candidate each (30 to 60 minutes) or d) oral examination in groups of up to 3 candidates (approx. 30 to 60 minutes) or e) presentation (20 to 45 minutes) Allocation of places 						
Master's w	vith 1 major	Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biologi		page 273 / 292

Additional information

Workload

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Teaching cycle

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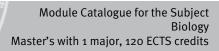
Referred to in LPO I (examination regulations for teaching-degree programmes)

Module appears in

Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2014)

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 274 / 292
	reg. data record Master (120 ECTS) Biologie - 2014	

Module title Abbreviation						
Entrep	reneuri	al Spirit in Biosciences			07-MUDB-102-m01	
Module	e coord	inator		Module offered by		
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
5	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate				
Conten	ts					
with th	e proce	e presented to students ess of founding start-up on are discussed.				
Intende	ed lear	ning outcomes				
		ed an insight into the b and development.	usiness plans and mai	ket of companies. T	hey gained an insigh	it into indu-
Course	S (type, r	number of weekly contact hours	, language — if other than Ger	man)		
• 0	7-MUD	as 2 components; infor B-1-102: S (no informat B-2-102: S (no informat	ion on language and n	umber of weekly con	tact hours available	
		Sessment (type, scope, lang le for bonus)	uage — if other than German, o	examination offered — if no	t every semester, informati	on on whether
Assess S U c e Assess S U p u Allocat 	j zero creato, inclued of glading. Hancer glade					
Worklo	Workload					
Teachi	Teaching cycle					
Referre	d to in	LPO I (examination regulation	ons for teaching-degree progra	mmes)		
Module	e appea	urs in				
Master's wi	th 1 majo	r Biology (2014)		rg • generated 26-Aug-2024 ord Master (120 ECTS) Biolog		page 275 / 292



Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)

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Module	Module title Abbreviation					
Specifi	c Curri	cular Activities in Biologi	cal Sciences 1		07-MVMINT1-102-m01	
Module	e coord	inator		Module offered by	I	
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
2	(not)	successfully completed				
Duratio	on in the second	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts	·	·			
Regula ded, pa			ı weekly contact hour) in biological or nat	ural sciences; assessment ungra-	
Intende	ed lear	ning outcomes				
Specifi	c skills	and knowledge on an in	terdisciplinary subjec	t in the biological o	r natural sciences.	
Course	S (type, 1	number of weekly contact hours, I	anguage — if other than Ger	man)		
V (no ir	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)	
		5 essment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
regular	attenc	lance as certified by the l	ecturer			
Allocat	ion of	places				
Additio	onal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
	1					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011)					
	-	ee (1 major) Biology (201 ee (1 major) Biology (201				

Module title					Abbreviation	
Specifi	c Currio	cular Activities in Biologi		07-MVMINT2-102-m01		
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS	Metho	thod of grading Only after succ. compl. of module(s)				
3	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
		ic lecture, seminar, work es with a graded assessr		ical course (1 weekly	y contact hour) in biological or	
Intende	ed leari	ning outcomes				
Specifi	c skills	and knowledge on an int	erdisciplinary subjec	t in the biological or	r natural sciences.	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
Method	l of ass	Sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
		le for bonus)				
followii or b) lo	ng optio g (appr	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, inclune candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	-	ee (1 major) Biology (201				
Master	Master's degree (1 major) Biology (2014)					

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Modul	Module title Abbreviation					
Specific Curricular Activities in Biological Sciences 3					07-MVMINT3-102-m01	
Modul	e coord	inator		Module offered by	1	
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
4	(not)	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ester	graduate	Please consult with	course advisory ser	vice.	
Conter	nts					
		fic lecture, seminar, work ces; assessment ungrade		ical course (2 week	ly contact hours) in biological or	
Intend	ed lear	ning outcomes				
Specifi	c skills	and knowledge on an in	terdisciplinary subjec	t in the biological o	r natural sciences.	
Course	S (type, I	number of weekly contact hours, I	anguage — if other than Ger	man)		
V (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language availabl	e)	
		s essment (type, scope, langua ole for bonus)	ge — if other than German, o	examination offered — if n	ot every semester, information on whether	
regula	r attenc	lance as certified by the l	ecturer			
Allocat	tion of	places				
Additio	onal inf	ormation				
Worklo	ad					
			·			
Teachi	ng cycl	e				
Referre	ed to in	LPO I (examination regulation	s for teaching-degree progra	mmes)		
Modul	e appea	ars in				
		ee (1 major) Biology (201	1)			
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

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Module title					Abbreviation	
Specifi	c Currio	cular Activities in Biologi		07-MVMINT4-102-m01		
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers		Faculty of Biology		
ECTS Method of grading Only after succ. compl. of module(s)						
5	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
		ic lecture, seminar, work es with a graded assessr		ical course (2 weekl	y contact hours) in biological or	
Intende	ed lear	ning outcomes				
Specifi	c skills	and knowledge on an int	erdisciplinary subjec	t in the biological or	r natural sciences.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	e)	
Method	d of ass	sessment (type, scope, langua	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
		le for bonus)				
followin or b) log	ng opti g (appi	ons will be chosen: a) wr ox. 10 to 30 pages) or c)	itten examination (30 oral examination of o	to 60 minutes, incluine candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	Master's degree (1 major) Biology (2010)					
Master	Master's degree (1 major) Biology (2014)					

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 280 / 292
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Module title					Abbreviation	
Extracu	ırricula	r Activities Outside of Na		07-MV1-102-m01		
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers	_	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)		
2	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
or othe science dule co econon	r institu es. Asse ordina nics, ar	utions, in which students essment ungraded, pass tors. Possible subjects an nd law.	will acquire addition required (2 ECTS created addition a	al skills in areas oth dits); decision on cre	y contact hour), offered by JMU her than biology or the natural edit transfer to be made by mo- ges, social studies, psychology,	
		ning outcomes				
Specifi	c skills	and knowledge on a spe	cific subject in an are	ea other than biology	y or the natural sciences.	
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	e)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
regular	attend	ance as certified by the l	ecturer			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
Master's degree (1 major) Biology (2011)						
	Master's degree (1 major) Biology (2010)					
Master	Master's degree (1 major) Biology (2014)					

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	reg. data record Master (120 ECTS) Biologie - 2014	1

Modul	Module title Abbreviation					
Extrac	urricula	ar Activities Outside of Na	tural Sciences 2	07-MV2-102-m01		
Module coordinator				Module offered by		
Coordi	nator B	ioCareers		Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)		
3	nume	rical grade				
Durati	on	Module level	Other prerequisites	i		
1 seme	ester	graduate	Please consult with	course advisory serv	vice.	
Conter	nts					
scienc dule co econor	es. Ass oordina mics, a	essment ungraded, pass tors. Possible subjects a nd law.	required (3 ECTS cree	dits); decision on cre	ner than biology or the natural edit transfer to be made by mo- ges, social studies, psychology,	
	-	ning outcomes				
		and knowledge on a spe			y or the natural sciences.	
		number of weekly contact hours, l				
-		tion on SWS (weekly cont			•	
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether	
followi or b) lo	ing opti og (app	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	o to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) (30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)	
Alloca	tion of	places				
Additi	onal inf	ormation				
Workle	oad					
Teachi	ing cycl	e				
Referr	ed to in	LPO I (examination regulation	s for teaching-degree progra	ummes)		
Modul	e appea	ars in				
	-	ee (1 major) Biology (201				
	0	ee (1 major) Biology (201	•			
Maste	r's degr	ee (1 major) Biology (201	4)			

Master's with 1 major Biology (2014)	JMU Würzburg • generated 26-Aug-2024 • exam.	page 282 / 292
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Module title					Abbreviation	
Extracu	ırricula	r Activities Outside of Na	itural Sciences 3		07-MV3-102-m01	
Module	e coord	inator		Module offered by		
Coordir	nator B	ioCareers	_	Faculty of Biology		
ECTS Method of grading Only after succ. compl. of module(s)						
4	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
or othe science dule co econon	r institu es. Asse oordina nics, ar	utions, in which students essment ungraded, pass tors. Possible subjects an nd law.	will acquire addition required (4 ECTS crea	al skills in areas oth lits); decision on cre	y contact hours), offered by JMU her than biology or the natural edit transfer to be made by mo- ges, social studies, psychology,	
		ning outcomes				
Specifi	c skills	and knowledge on a spe	cific subject in an are	ea other than biology	y or the natural sciences.	
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	e)	
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether	
regular	attend	ance as certified by the l	ecturer			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
	Master's degree (1 major) Biology (2011)					
	Master's degree (1 major) Biology (2010)					
Master	Master's degree (1 major) Biology (2014)					

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Modul	e title				Abbreviation
Extrac	urricula	ar Activities Outside of Na	tural Sciences 4		07-MV4-102-m01
Modul	e coord	linator		Module offered by	1
Coordi	inator B	ioCareers		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Durati	on	Module level	Other prerequisites		
1 seme	ester	graduate	Please consult with	course advisory serv	/ice.
Conter	nts				
scienc dule co econor	es. Ass oordina mics, a	essment ungraded, pass tors. Possible subjects a nd law.	required (5 ECTS crea	lits); decision on cre	ner than biology or the natural edit transfer to be made by mo- ges, social studies, psychology,
	-	ning outcomes			
Specif	ic skills	and knowledge on a spe	cific subject in an are	ea other than biology	y or the natural sciences.
		number of weekly contact hours, l			
V (no i	nforma	tion on SWS (weekly cont	act hours) and cours	e language available	e)
		sessment (type, scope, langua ble for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
followi or b) lo	ing opti og (app	ons will be chosen: a) wr rox. 10 to 30 pages) or c)	itten examination (30 oral examination of c	to 60 minutes, incl one candidate each (o the course. Usually, one of the uding multiple choice questions) 30 to 60 minutes) or d) oral ex- entation (20 to 45 minutes)
Alloca	tion of	places			
Additi	onal inf	ormation			
Workle	oad				
Teachi	ing cycl	e			
Referr	ed to in	LPOI (examination regulation	s for teaching-degree progra	mmes)	
	e appea				
	-	ee (1 major) Biology (201			
	0	ee (1 major) Biology (201 ee (1 major) Biology (201	•		
maste	i s uegi	ee (1 111ajui) Divivgy (201)	4/		

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Module title				Abbreviation		
Scienti	Scientific Teaching 1				07-DR1-102-m01	
Module	Module coordinator			Module offered by		
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
2	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
ganisin	g cours		contents and organi		udents or pupils. Students or- ee programme coordinator. The	
Intende	ed lear	ning outcomes				
Ability 1	to inde	pendently organise, plan	and deliver courses.			
Course	S (type, r	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)	
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
succes	sful co	mpletion as certified by t	he lecturer			
Allocat	ion of p	olaces				
Additio	nal inf	ormation				
Worklo	ad					
Teachir	ıg cycl	e				
Referred to in LPO I (examination regulations for teaching-degree programmes)						
	Module appears in					
	-	ee (1 major) Biology (2013				
	•	ee (1 major) Biology (2010 ee (1 major) Biology (2017	•			
master						

Module title Abbreviation					
Scienti	fic Tea	ching 2			07-DR2-102-m01
Module	Module coordinator			Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
3	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice.
Conten	ts				
Studen	ts orga		e advice on contents		Bachelor's students or pupils. Som the degree programme coor-
Intende	ed lear	ning outcomes			
Ability	to inde	pendently organise, plan	and deliver courses.		
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)	
V (no ir	nformat	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
succes	sful co	mpletion as certified by t	he lecturer		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
		ee (1 major) Biology (201 ee (1 major) Biology (201			

Module	Module title Abbreviation					
Scienti	fic Tea	ching 3			07-DR3-102-m01	
Module	Module coordinator			Module offered by		
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)		
4	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	graduate	Please consult with	course advisory serv	vice.	
Conten	ts					
ganisin	ig cours		contents and organi		udents or pupils. Students or- ee programme coordinator. The	
Intend	ed lear	ning outcomes				
Ability	to inde	pendently organise, plan	and deliver courses.			
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Gei	rman)		
V (no ir	format	tion on SWS (weekly cont	act hours) and cours	e language available	<u>a)</u>	
		sessment (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	t every semester, information on whether	
succes	sful co	mpletion as certified by t	he lecturer			
Allocat	ion of _l	places				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	immes)		
Module	e appea	ars in				
	-	ee (1 major) Biology (201				
	-	ee (1 major) Biology (201	-			
Master	's degr	ee (1 major) Biology (201	4)			

Module title Abbreviation					
Scienti	fic Tea	ching 4			07-DR4-102-m01
Module	Module coordinator			Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	(not) s	successfully completed			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice.
Conten	ts				
ganisin	ig cours		contents and organi		udents or pupils. Students or- ee programme coordinator. The
Intend	ed lear	ning outcomes			
Ability	to inde	pendently organise, plan	and deliver courses.		
Course	S (type, r	number of weekly contact hours, I	anguage — if other than Ger	rman)	
V (no ir	format	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
succes	sful co	mpletion as certified by t	he lecturer		
Allocat	ion of _l	places			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	immes)	
Module	e appea	ars in			
	-	ee (1 major) Biology (201			
	-	ee (1 major) Biology (201	-		
Master	's degr	ee (1 major) Biology (201	4)		

Module title					Abbreviation
Superv	Supervising Tutorial Master 1 07-FT1-102-m01				
Module	coord	inator		Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice.
Conten	ts				
		tors, students will mento s, in particular exercises.		ng courses in particu	lar and will help organise and
Intende	ed lear	ning outcomes			
ence su interpe ve learr	ipervis rsonal ned to j	ing a group and helping s skills and know how to s	students with person hare their expertise in	al matters. The tutor: n exploring complex	way. They have gained experi- s have thus enhanced their own topics. In addition, the tutors ha- and the university education of
Course	S (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
T (no in	format	ion on SWS (weekly cont	act hours) and course	e language available)
		sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
succes	sful coi	mpletion as certified by t	he lecturer		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Master	Master's degree (1 major) Biology (2011) Master's degree (1 major) Biology (2010) Master's degree (1 major) Biology (2014)				

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Module title Ab				Abbreviation	
Superv	ising T	utorial Master 2			07-FT2-102-m01
Module	e coord	inator		Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice.
Conten	ts				
		tors, students will mento s, in particular exercises.		ng courses in particu	lar and will help organise and
Intende	ed lear	ning outcomes			
ence su interpe ve learr the stu	ipervis rsonal ned to dents t	ing a group and helping s skills and know how to s plan and organise key ele hey mentor.	students with person hare their expertise in ements of their own u	al matters. The tutor n exploring complex niversity education a	way. They have gained experi- s have thus enhanced their own topics. In addition, the tutors ha- and the university education of
		number of weekly contact hours, l			<u></u>
		ion on SWS (weekly cont			
		le for bonus)	ge — If other than German, e	examination offered — if no	t every semester, information on whether
succes	sful co	mpletion as certified by t	he lecturer		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	-	ee (1 major) Biology (201: ee (1 major) Biology (2010			
	•	ee (1 major) Biology (2014 ee (1 major) Biology (2014	•		
	-				

Module title			Abbreviation		
Supervi	Supervising Tutorial Master 3				07-FT3-102-m01
Module	coord	inator		Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	graduate	Please consult with	course advisory serv	vice.
Conten	ts				
Tutors v	will sup	port other students on th	neir way towards aca	demic success.	
Intende	ed leari	ning outcomes			
ence su interpe ve learr	ipervis rsonal 1ed to j	ing a group and helping s skills and know how to sl	students with person hare their expertise in	al matters. The tutor: n exploring complex	way. They have gained experi- s have thus enhanced their own topics. In addition, the tutors ha- and the university education of
		umber of weekly contact hours, l	anguage — if other than Ger	man)	
		ion on SWS (weekly conta)
		essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
success	sful cor	npletion as certified by th	ne lecturer		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
	Master's degree (1 major) Biology (2011)				
		ee (1 major) Biology (2010			
master	s uegr	ee (1 major) Biology (2014	4)		

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Module	e title			Abbreviation		
Specifi	c Curri	cular Activities in Biologi		07-MVMINT5-112-m01		
Module coordinator				Module offered by		
Coordinator BioCareers				Faculty of Biology		
ECTS	Meth	od of grading	Only after succ. compl. of module(s)			
6	(not)	successfully completed				
Duration Module level		Module level	Other prerequisites			
1 semester		graduate	Please consult with course advisory service.			
Conten	ts					
		fic lecture, seminar, work es; assessment ungrade		ical course (3 week	y contact hours) in biological or	
Intende	ed lear	ning outcomes				
Specifi	c skills	and knowledge on an in	terdisciplinary subjec	t in the biological o	r natural sciences.	
Course	S (type, 1	number of weekly contact hours, l	anguage — if other than Ger	man)		
V (no ir	nforma	tion on SWS (weekly cont	act hours) and cours	e language availabl	e)	
		Sessment (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	ot every semester, information on whether	
succes	sful co	mpletion as certified by t	he lecturer			
Allocat	ion of	places				
Additio	nal inf	ormation				
Worklo	ad					
Teachi	ng cycl	e				
Referre	d to in	LPOI (examination regulation	s for teaching-degree progra	mmes)		
Module	e appea	ars in				
	-	ee (1 major) Biology (201				
Master	's degr	ee (1 major) Biology (201	4)			

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