

## Module Catalogue

for the Subject

# Biology

## as a minor in a Bachelor's degree programme

(60 ECTS credits)

Examination regulations version: 2013 Responsible: Faculty of Biology

JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record B1|026|-|-|N|2013



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## The subject is divided into

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## **Content and Objectives of the Programme**

The study program is based on the study program of the Bachelor of Science Biology at the University of Würzburg. The graduate possesses a basic qualification in biological sciences as addendum.

## **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)):

#### 07-Aug-2013 (2013-109)

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.



## **Compulsory Courses**

(30 ECTS credits)

Module title			Abbreviation		
The Plant Kingdom				07-1A1ZPF-132-m01	
Module coordinator			Module offered by		
holder of the Chair of	Plant Physiology	and Biophysics	Faculty of Biology		
ECTS Method of gra	ading	Only after succ. com	pl. of module(s)		
5 numerical gra	ide				
Duration Modul	e level	Other prerequisites			
1 semester underg	graduate		d successful complet	regular attendance of exercises tion of the respective exercises	
Contents					
At the level of groups derstand the forms ar lutionary and ecologic	in the plant kingo nd functions of pla cal context. The co on. Students will a	lom, students will ac ant organisms, with n ontents of the module lso acquire and prac	quire the fundament norphology and cyto e are relevant for bio	versity of eukaryotes in particular. cal knowledge necessary to un- logy being discussed in an evo- ological disciplines at all levels of damental preparation skills bios-	
Intended learning out	tcomes				
gi Ability to recognis cepts of phylogenetic and major representa gal organisms that are	se evolution as th relationships bet tives of fungi as w e most suitable fo es Fundamental	e driving force behing ween plants/fungi vell as groups in the p r particular scientific skills in the interpret	d the phylogeny of s Familiarity with the olant kingdom Abil issues Familiarity	structures of plant cells and fun- pecies Familiarity with the con- distinguishing characteristics lity to select those plant and fun- with the components and func- c and histologic preparations by	
Courses (type, number of	weekly contact hours, la	anguage — if other than Ger	man)		
V + Ü (no information	on SWS (weekly o	contact hours) and co	ourse language avail	able)	
Method of assessmen module is creditable for bond		ge — if other than German, e	examination offered — if no	t every semester, information on whether	
written examination (	approx. 60 minute	es)			
Allocation of places					
Additional informatio	n				
Workload					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
-					
Module appears in	Module appears in				
Bachelor' degree (1 m Bachelor's degree (1 r					

Evolution and the Animal Kingdom 07-1A1TI-132-m0   Module coordinator Module offered by    holder of the Professorship of Zoology at the Department of Electronic roscopy Faculty of Biology    ECTS Method of grading Only after succ. of module(s)	01
holder of the Professorship of Zoology at the Department of Faculty of Biology Electronmicroscopy	
Electronmicroscopy	
ECTS Method of grading Only after succ. compl. of module(s)	
5 numerical grade	
Duration Module level Other prerequisites	
1 semesterundergraduateAdmission prerequisite to assessment: regular attendand (minimum 80%) and successful completion of the respect (approx. 25 to 30 hours).	

#### Contents

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

#### Intended learning outcomes

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

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

V + Ü (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)

written examination (approx. 60 minutes)

Allocation of places

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Additional information

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Workload

--

**Teaching cycle** 

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

Module appears in

minor in a Bachelor's degree programme Biology	
(2013)	

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Bachelor' degree (1 major) Biology (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module title Abbreviation					
Geneti	cs, Neu	robiology, Behaviour			07-2A2GENV-132-m01
Module coordinator				Module offered by	
Prof. D	r. C. We	egener, Prof. Dr. F. Roces		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate		d successful comple	regular attendance of exercises tion of the respective exercises
Conten	ts				
Fundar	nental	principles of genetics, n	eurobiology and beha	vioural biology.	
Intend	ed lear	ning outcomes			
	in anin				al mechanisms and processes in- olecular and formal bases of in-
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Ger	man)	
V + Ü (r	no info	rmation on SWS (weekly	contact hours) and co	ourse language avai	lable)
		<b>Sessment</b> (type, scope, languable for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 60 to 90	minutes)		
Allocat	ion of <sub>l</sub>	places			
Additio	nal inf	ormation			
			_		
Worklo	ad		_		
			_		
Teachi	ng cycl	e			
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module					
Bachelor' degree (1 major) Biology (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)					

Module title				Abbreviation	
Legal a	nd Eth	ical Aspects in Biologica	l Sciences		07-SQF-RETH-132-m01
Module coordinator Module offered b			Module offered by	<u>.</u>	
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate		d successful comple	regular attendance of exercises tion of the respective exercises
Conten	ts				
animal	testing		agriculture, biodivers		ch, cloning, transgenic animals, ervation, biotechnology and mi-
Intende	ed lear	ning outcomes			
pics. Course V + Ü (r Methoo	<b>s</b> (type, r no info <b>d of ass</b>	number of weekly contact hours, rmation on SWS (weekly	language — if other than Ger contact hours) and cc	man) Durse language avail	n and critically discuss these to- able) ot every semester, information on whether
		nation (approx. 30 to 60	minutes)		
Allocat	ion of <sub>l</sub>	olaces	-		
Additio	nal inf	ormation			
Worklo	ad				
Teachi	Teaching cycle				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module	appea	ars in			
	Bachelor' degree (1 major) Biology (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)				

Module title			Abbreviation		
Developmental Biology of Animals				07-3A3EBIOTI-132-m01	
Module	e coord	inator		Module offered by	
Dean of	f Studie	es Biologie (Biology)	_	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate		l successful complet	regular attendance of exercises tion of the respective exercises
Conten	ts				
biology bians, r of sperr organog	r. The fo nemato matozo genesis	ollowing topics will be co odes, Drosophila, mouse) oa and ova), differential g	vered: early embryon and relevance for th ene expression, cell	ic development of va e systematics of anin growth and molecula	ledge on animal developmental arious model organisms (amphi- mals, gametogenesis (production ar regulation of cell development, ng, metamorphosis (amphibians,
Intende	ed learn	ning outcomes			
model o discipli don, ca	organis nary co ncer ar	ms (pattern formation).	3. Molecular mechani Iopmental biology ar ametes. 6. Interrelati	sms as well as contr nd other branches of ons between ontoge	yonic development of selected rol of cell development. 4. Inter- biology. 5. Cell biology of cotyle- eny and evolution/environment.
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written	examir	nation (approx. 60 minut	es)		
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	е			
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)				
Module	Module appears in				
Bachelo	Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Biomedicine (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)				

Module title					Abbreviation
Plant a	nd Aniı	nal Ecology			07-3A30EK0-132-m01
Module	e coord	inator		Module offered by	
Dean of	Dean of Studies Biologie (Biology)			Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
6	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
and bic as on th fundam re the f	otic env ne strue nental r undam	ironments. The module v cture and dynamics of po nodel concepts of ecolog ental knowledge necessa	vill focus on the funct pulations, communit y, will become famili	tional adaptation to ies and ecosystems ar with examples of	and animals with their abiotic environmental conditions as well . Students will be introduced to research findings and will acqui- nt ecological problems.
		ning outcomes			
portant	abiotio vironm	c and biotic factors that i nent. In addition, they un	nfluence the distribut	tion and frequency o	ecology and with the most im- of occurrence of organisms in has to the assessment of envi-
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
written	examiı	nation (approx. 90 minut	es)		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Biology (2013)					
	Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014)				
	-	ree (1 major) Computatio		14)	
	Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)				



## **Compulsory Electives**

(30 ECTS credits)

Module title					Abbreviation
Mathematical Biology and Biostatisticso7-M-BST-132-most				07-M-BST-132-m01	
Module coordinator				Module offered by	I
holder	ofthe	Chair of Bioinformatics		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
4	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	its	·	•		
Fundar	nental	principles of the most im	portant mathematica	I and statistical met	hods in biology.
		ning outcomes	•		
Studen	nts will				s, the interpretation of readings
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Gei	rman)	
V + Ü (ı	no info	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
		<b>Sessment</b> (type, scope, langua le for bonus)	ge — if other than German,	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 60 minut	es)		
Allocat	ion of <sub>l</sub>	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
Referre	ed to in	LPOI (examination regulation	s for teaching-degree progra	ammes)	
Module appears in					
Bachelor' degree (1 major) Biochemistry (2013)					
	Bachelor' degree (1 major) Biology (2013)				
Bachelor' degree (1 major) Computer Science (2014)					
	Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014)				
	-	ree (1 major) Computatio gree (1 major, 1 minor) Bi		14)	
Dachel	oi s ue	Siee (1 majol, 1 mmol) Bl	ology (Million, 2013)		

Module title Abbreviation					Abbreviation
Develo	pmenta	al Biology of Plants			07-3A3EBIOPF-132-m01
Module coordinator Module offered by			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)	
4	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ester	undergraduate		d successful comple	regular attendance of exercises tion of the respective exercises
Conter	nts				
over a	plant's	entire life cycle from gerr	nination to reproduct	ion. The module wil	of plant developmental biology l discuss the molecular determi- as well as their plasticity.
Intend	ed lear	ning outcomes			
ty of de Course V + Ü (I Metho module i	evelopn es (type, r no infor d of ass s creditab	nental biological process umber of weekly contact hours, l mation on SWS (weekly o	es: regulation by end anguage — if other than Ger contact hours) and co ge — if other than German, o	ogenous and enviro man) purse language avail	
Allocat	tion of p	olaces			
Additio	onal inf	ormation			
Worklo	ad				
Teaching cycle					
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Modul	e appea	irs in			
	-	ree (1 major) Biology (202 gree (1 major, 1 minor) Bi	-		

Module	Module title Abbreviation				
Physio	logy of	Prokaryotes			07-2A2PHYPR-132-m01
Module coordinator				Module offered by	
holder	of the (	Chair of Microbiology		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
4	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate		d successful comple	regular attendance of exercises tion of the respective exercises
Conten	ts				
an ovei	rview o		al cells and different r		etical part, students will acquire Ices of bacteria; during exercises,
Intend	ed lear	ning outcomes			
		amiliar with the fundame cient in basic methods ir		e anatomy and metal	bolic performance of bacteria.
Course	<b>S</b> (type, r	number of weekly contact hours,	language — if other than Ger	rman)	
ı) Ü + V	no infoi	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
		<b>eessment</b> (type, scope, langua le for bonus)	age — if other than German, o	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 60 minut	es)		
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
			-		
Teachi	Teaching cycle				
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module	e appea	ars in			
	Bachelor' degree (1 major) Biology (2013)				
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)					

Module title Abbreviation				Abbreviation	
Plant Pl	hysiolo	ogy			07-2A2PHYPF-132-m01
Module coordinator				Module offered by	
holder o	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)	
4	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate		l successful complet	regular attendance of exercises tion of the respective exercises
Content	ts				
opportu the bioc nal envi general	inity to chemis ironme princij	develop the fundamenta try of the cell and will the nt of plants in particular.	al skills for working in en move on to discus Using the example o odule will also elabo	a biological laborat s the physiological p f plants, the module	gy and will provide them with an ory. The module will first address processes that regulate the inter- e will introduce students to the ristic peculiarities of plants in
Intende	d learr	ning outcomes			
tors tha skills or	t distir n how t	nguish plant physiology f	rom animal and prok present scientific exp	aryotic physiology eriments Essential	these Familiarity with the fac- Fundamental knowledge and lab skills Familiarity with me-
Courses	<b>5</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		s <b>essment</b> (type, scope, langua; le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written	examir	nation (approx. 60 minut	es)		
Allocati	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			>		
		ree (1 major) Biology (201 gree (1 major, 1 minor) Bio			

Module	e title				Abbreviation
Animal	Physic	ology			07-2A2PHYTI-132-m01
Module	Module coordinator			Module offered by	1
holder logy	ofthe	Chair of Behavioral Phys	siology and Sociobio-	Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. con	npl. of module(s)	
4	nume	rical grade			
Duratio	on	Module level	Other prerequisites	5	
1 seme	ster	undergraduate		d successful comple	regular attendance of exercises tion of the respective exercises
Conten	Its				
provide module	e them e will fo	with an opportunity to c	levelop the fundamen	tal skills for working	ive animal physiology and will in a physiological laboratory. The ts of metabolic physiology (respi-
Intend	ed lear	ning outcomes			
					regulation of organisms. They ha- sentation of scientific results.
Course	<b>S</b> (type, r	number of weekly contact hours	, language — if other than Ge	rman)	
V + Ü (I	no info	rmation on SWS (weekly	r contact hours) and co	ourse language avail	able)
		<b>sessment</b> (type, scope, langu le for bonus)	uage — if other than German,	examination offered — if no	ot every semester, information on whether
written	exami	nation (approx. 60 minu	ites)		
Allocat	ion of <sub>l</sub>	places			
	_				
Additio	onal inf	ormation			
Worklo	ad				
	-				
Teachi	ng cycl	e			
			_		
Referre	ed to in	LPO I (examination regulatio	ns for teaching-degree progra	ammes)	
		•			
Module					
	-	ree (1 major) Biology (20 gree (1 major, 1 minor) E			
Daciiel	u sue	giee (1 major, 1 mm01) E	notogy (minior, 2013)		

Modul	e title				Abbreviation
Genes,	, Molec	ules, Technologies			07-3A3GEMT-132-m01
Modul	e coord	inator		Module offered by	
Dean of Studies Biologie (Biology) Faculty of Biology					
ECTS	ECTS Method of grading		Only after succ. con	npl. of module(s)	
6	nume	rical grade			
Duration Module level		Other prerequisites			
1 semester undergraduate					
Conter	nts				

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

#### Intended learning outcomes

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

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

V (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)

written examination (approx. 90 minutes)

Allocation of places

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Additional information

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Workload

--

Teaching cycle

---

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

#### Module appears in

Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Computer Science (2014) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

minor in a Bachelor's degree programme Biology (2013)

Module	title				Abbreviation	
Basic B	iochen	nistry			07-3A3BC-132-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)		
4	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 semes	ster	undergraduate		l successful complet	regular attendance of exercises tion of the respective exercises	
Conten	ts					
dents w will bec translat formed	With the module component <i>Makromoleküle (Macromolecules</i> ) as a starting point, the lecture will provide stu- dents with deeper insights into the molecular biology and biochemistry of prokaryotes and eukaryotes. Students will become familiar with fundamental principles of molecular biology (replication, transcription, splicing and translation) and the biochemistry of carbohydrates, lipids, proteins and nucleic acids. Experiments will be per- formed on selected topics that were discussed in the lecture. The exercise will cover practical aspects of lab work (PCR, DNA and protein gel electrophoresis, blot, enzyme kinetics and detection, protein isolation).					
Intende	ed learı	ning outcomes	· · · · · ·		·	
Studen	ts are f	amiliar with the fundame	ental principles of bio	chemistry.		
Courses	<b>5</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
V + Ü (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
written	examiı	nation (approx. 60 minut	es)			
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	in and a second s				
	-	ree (1 major) Biology (201	-			
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)						

Module	Module title Abbreviation				
The Flo	ra of G	ermany			07-4A4FLO-132-m01
Module	e coord	inator		Module offered by	
holder gy	of the (	Chair of Ecophysiology ar	nd Vegetation Ecolo-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
7	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme:	1 semester undergraduate Admission prerequisite to assessment: regular attendance of field trips (minimum 80%) and completion of exercises. Regular attendance of exercises (minimum 80%) and successful completion of the respecti- ve exercises (approx. 25 to 30 hours) are admission prerequisites to as sessment.				cises. Regular attendance of ul completion of the respecti-
Conten	ts				
plants. nomic i dents w learn he minolog Würzbu will be using fi tion-rel den of f	The module will discuss the fundamental principles of the systematics and ecology of indigenous flowering plants. Students will acquire an overview of major indigenous plant families as well as their ecological and economic importance. Using a field guide, the course will demonstrate how dichotomous keys are used, and students will practise identifying freshly-gathered plants using dichotomous keys. Identifying plants, students will learn how to identify major morphological plant characteristics and will become familiar with the respective terminology. The module will also include field trips to typical habitats in the Botanical Garden and the vicinity of Würzburg. Students will become familiar with the common as well as scientific names of the plants found and will be introduced to the family- as well as species-specific characteristics of these plants. Students will practise using field guides and identification keys on site. Habitat ecological, geobotanical, climatic as well as conservation-relevant characteristics will also be discussed. The module will also include sessions at the Botanical Garden of the University of Würzburg with its outdoor facilities and greenhouses to help students acquire species identification skills.				
Intende	ed learı	ning outcomes			
Students have acquired knowledge and skills related to the ecology, systematics and taxonomy of indigenous flowering plants. They are familiar with the terminology of plant morphology and know how to use Floras and set up scientific herbaria.					
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü +	E (no i	nformation on SWS (wee	kly contact hours) an	d course language a	vailable)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, o	examination offered — if no	t every semester, information on whether
written examination (approx. 45 minutes) and practical identification assignment (approx. 45 minutes), weighted					

Assessment offered: once a year, summer semester

#### **Allocation of places**

Number of places: 180. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this proce-

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dure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

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Workload

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#### Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

minor in a B	achelor's degree programme Biology
(2013)	

Module	Module title Abbreviation				
The Fauna of Germany					07-4A4FAU-132-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)	
7	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate	(minimum 80%) and exercises (minimum	d completion of exer 80%) and successf	regular attendance of field trips cises. Regular attendance of ul completion of the respecti- e admission prerequisites to as-
Conten	ts				
They wi identify specific solidate	ll acqu ring spo c habita e the ki	ire a fundamental knowle ecies, using specimens o ats or lifestyles. Exercises	edge of the systemat f animals. Selection in a variety of habita	ics and taxonomy of of specimens will be ats will provide stude	to be found in Central Europe. these animals and will practise taxon-specific and will represent ents with an opportunity to con- pecimens including their ecology
Intende	ed leari	ning outcomes			
of the in Central of spec	ndigen Europe ies, stu	ous fauna (vertebrates, in ean habitats as well as th	nvertebrates) and use leir faunas and phene the biology and eco	e identification keys. ology. On the basis o logy of these species	classify selected representatives They are familiar with selected of the morphology and habitats as well as, where applicable, to
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	rman)	
V + Ü +	E (no i	nformation on SWS (weel	kly contact hours) an	d course language a	vailable)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
1:1		nation (approx. 45 minute ffered: once a year, sumr		tification assignmer	nt (approx. 45 minutes), weighted
Allocati	ion of p	olaces			
allocate logy) wi ces will 5% of p ject Bio themati ject Bio ble in o the othe places, courses dure, ap tive mo they be plicants	ed as fo ith 180 be allo laces ( logie (l ics and logy (a ne quot er quot there v s of a m pplicar dule w come a s' previ	ollows: Places will primar ECTS credits. Should the ocated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemati s well as potentially to st ota exceed the number of a. Should there be, within will be a uniform regulation nodule component that a ats who already have succe ill be given preferential c available. Selection proce ous academic achievement	ily be allocated to stu module be used in o Bachelor's degree su ipant in total) will be dits and to students ics), each with 180 EG applications, the ren n one module compo on for the courses of re concerned will be cessfully completed a onsideration. A waiti ess group 1 (95%): Pla ents. For this purpose	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part o orting' subjects). Sho naining places will b onent, several course one module compon allocated in a standa at least one other mo ng list will be mainta aces will primarily be	of available places, places will be or's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and s of the Bachelor's degree sub- gree subjects Computational Ma- f the application-oriented sub- ould the number of places availa- e allocated to applicants from es with a restricted number of the number of places on all ardised procedure. In this proce- odule component of the respec- tined and places re-allocated as a allocated according to the ap- ranked according to the number aken during their studies or of

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all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

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Workload

Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

minor in a Bachelor's degree programme Biology	
(2013)	

Module	e title				Abbreviation
Neurob	oiology	1			07-4S1NVO1-132-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. con	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts		<u>L</u>		
		and methods in molecula ehaviour and endogenou		ogenetic model syst	tem Drosophila and humans)
Intende	ed lear	ning outcomes			
		e acquired an advanced k nethods in neurobiology.	nowledge of the neu	robiology of a mode	l organism and are able to apply
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
Ü + S (r	no infoi	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
module is a) writt candid tes per	en exal ate eac candic	<sup>le for bonus)</sup> mination (approx. 45 to 6 h (approx. 30 minutes) o late) or e) presentation (a	o minutes) or b) log ( r d) oral examination approx. 20 to 30 minu	approx. 10 to 20 pag in groups of up to 3 ites) or f) practical e	ges) or c) oral examination on whether candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students
		ed about the method and	l length of the assess	ment prior to the co	urse.
Allocat					
allocate logy) w ces will 5% of p ject Bio themat ject Bio ble in o the oth places, courses dure, a tive mo they be plicant of ECTS	ed as for ith 1800 l be allo blaces ( blogie ( ics and blogy (a blogy (a bl	ollows: Places will primar ECTS credits. Should the ocated to students of the (a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat is well as potentially to st ota exceed the number of ta. Should there be, within will be a uniform regulation nodule component that a nets who already have suc- ill be given preferential co available. Selection proce- tious academic achievements they have achieved and	ily be allocated to struct module be used in or Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imp applications, the ren in one module compo on for the courses of re concerned will be cessfully completed a onsideration. A waiti ess group 1 (95%): Pla ents. For this purposed	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sh naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta aces will primarily be a applicants will be of all assessments t	f available places, places will be lor's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number caken during their studies or of Chemistry), Physik (Physics), Ma-

thematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, pla-

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ces will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### **Additional information**

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Workload

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#### Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013)

Bachelor' degree (1 major) Mathematics (2014)

Bachelor' degree (1 major) Computational Mathematics (2014)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

minor in a	Bachelor's degree programme Biology
(2013)	

Module title Abbreviation Integrative Behavioral Biology 1 07-4S1NVO2-132-m01 Module coordinator Module offered by holder of the Chair of Behavioral Physiology and Sociobio-Faculty of Biology logy ECTS Method of grading Only after succ. compl. of module(s) numerical grade Duration Module level Other prerequisites 1 semester undergraduate Contents Communication in the animal kingdom, neuroethology and behavioural development, perception and processing of olfactory signals, temporal organisation of behaviour, adaptive feeding behaviour, reproductive behaviour, social behaviour, orientation mechanisms. Intended learning outcomes Students have acquired an advanced knowledge in the area of behavioural biology and are able to deliver presentations on current studies on relevant topics. **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) a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete varies according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course. Allocation of places Number of places: 20. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the

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following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

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Workload

Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module title				Abbreviation	
Functio	onal Mo	orphology of Arthropods			07-4S1NVO3-132-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. con	npl. of module(s)	
5		rical grade			
Duratio		Module level	Other prerequisites		
1 seme		undergraduate			
Conten					
Morpho	ology, a	anatomy, phylogeny and	ecology of arthropod	5.	
Intende	ed lear	ning outcomes			
		able to explain arthropod ecosystems.	radiations in a funct	ional context as well	l as to explain the importance of
Course	<b>S</b> (type, r	number of weekly contact hours, l	language — if other than Ger	man)	
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho	d of ass	·			t every semester, information on whether
term pa	aper (ai	oprox. 5 to 10 pages)	-		
Allocat					
5% of p ject Bio themat ject Bio ble in of the oth places, courses dure, a tive mo they be plicant of ECTS all moo themat firstly, and, se positio cording qualita followin	places ( plogie ( ics and plogy (a one quot er quot there w s of a m pplicar dule w come a s' previ c credit lule con ik (Mat accordi condly n in a t g to this tive rar ng quot	a minimum of one partic Biology) with 60 ECTS cre I Mathematik (Mathemat is well as potentially to st ota exceed the number of ta. Should there be, within will be a uniform regulating nodule component that a nets who already have suc- ill be given preferential c available. Selection proce ous academic achievement is they have achieved and monents in the subject of hematics)) at the time of a caccording to their total hird ranking will be calcul is third ranking. Among ap hking or otherwise by lot. tas: Quota 1 (50% of plac	ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imp applications, the ren in one module compo- on for the courses of re concerned will be cessfully completed a consideration. A waiti ess group 1 (95%): Pla ents. For this purpose d their average grade of Biologie (Biology) application. This will e weighted according number of ECTS credi- lated as the sum of to pplicants with the sar Selection process gr	allocated to student of the Bachelor's de CTS credits, as part o orting' subjects). She naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta aces will primarily be of all assessments t (excluding Chemie (C l be done as follows: to the number of EC its achieved (quantit hese two rankings, a ne ranking, places w ECTS credits already	bogy) with 180 ECTS credits and ts of the Bachelor's degree sub- gree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number aken during their studies or of Chemistry), Physik (Physics), Ma- e First, applicants will be ranked, TS credits (qualitative ranking) tative ranking). The applicants' and places will be allocated ac- vill be allocated according to the achieved in modules/module acfieved in modules/module
ces wil among places)	l be allo applica : alloca	ocated by lot. Quota 2 (2) ants with the same numb	5% of places): numbe per of subject semest nodule be used only i	er of subject semeste ers, places will be al n the Bachelor's deg	of ECTS credits achieved, pla- ers of the respective applicant; located by lot. Quota 3 (25% of gree subject Biologie (Biology) as of group 1.

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#### 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

Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module	title				Abbreviation
Basics in Light- and Electron-Microscopy			ру		07-4S1MZ1-132-m01
Module	coord	inator		Module offered by	
head of	f the De	epartment of Electronmic	roscopy	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	ıpl. of module(s)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Fundan	nental	principles of confocal las	er scanning microsco	py and electron mic	roscopy.
Intende	ed lear	ning outcomes			
Studen	ts have	e acquired theoretical kno	owledge and practica	l skills in the area of	flight and electron microscopy.
Course	<b>S</b> (type, r	number of weekly contact hours, la	anguage — if other than Ger	man)	
V + Ü (r	10 infor	rmation on SWS (weekly o	contact hours) and cc	ourse language avail	able)
Method	d of ass	sessment (type, scope, langua	ge — if other than German, o	 examination offered — if no	ot every semester, information on whether
		le for bonus)			
written	exami	nation (approx. 30 to 60 r	minutes)		
Allocat	ion of p	olaces			
allocate logy) wi ces will 5% of p ject Bio themati ject Bio ble in o the oth places, courses dure, a tive mo they be	ed as fo ith 180 l be allo blaces ( blogie (l ics and blogy (a one quo er quo there v s of a m pplicar odule w ecome a	ollows: Places will primar ECTS credits. Should the ocated to students of the (a minimum of one partici Biology) with 60 ECTS cre d Mathematik (Mathemati is well as potentially to st bata exceed the number of ta. Should there be, withi will be a uniform regulation nodule component that an its who already have succe vill be given preferential co available. Selection proce	rily be allocated to stu e module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 EC tudents of other 'impo applications, the ren in one module compo on for the courses of re concerned will be a cessfully completed a onsideration. A waitin ess group 1 (95%): Pla	udents of the Bachel other subjects, there ubject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part o orting' subjects). Sho naining places will b onent, several course one module compon allocated in a standa at least one other mo ng list will be mainta aces will primarily be	available places, places will be lor's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and as of the Bachelor's degree sub- gree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- e allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number

of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to the qualitative ranking. Among applicants with the same ranking, places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters of the respective applicant; among applicants with the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

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(2013)	reg. data record Bachelor (60 ECTS) Biologie - 2013	

#### Workload

Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013)

Bachelor' degree (1 major) Mathematics (2014)

Bachelor' degree (1 major) Computational Mathematics (2014)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module	title				Abbreviation
Analysis of Chromosomes					07-4S1MZ2-132-m01
Module coordinator				Module offered by	
head of the Department of Electronmic		epartment of Electronmic	roscopy	Faculty of Biology	
ECTS	CTS Method of grading Only after succ. compl		pl. of module(s)		
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Overview of the structure of chromosomes of somatic and meiotic cells.					
Intende	ed learı	ning outcomes			
Students are able to analyse chromosomal structures.					
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)					
V + Ü (no information on SWS (weekly contact hours) and course language available)					
		<b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
written examination (approx. 30 to 60 minutes)					
Allocation of places					
Number of places: 18. Should the number of applications exceed the number of available places, places will be					

allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

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(2013)	reg. data record Bachelor (60 ECTS) Biologie - 2013	

#### Workload

Teaching cycle

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

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#### Module appears in

Bachelor' degree (1 major) Biology (2013)

Bachelor' degree (1 major) Mathematics (2014)

Bachelor' degree (1 major) Computational Mathematics (2014)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

(2013)

Module title				Abbreviation
Special Bioinformatics 1				07-4S1MZ6-132-m01
Module coo	dinator		Module offered by	*
holder of the	Chair of Bioinformatics		Faculty of Biology	-
ECTS Met	nod of grading	Only after succ. con	npl. of module(s)	
5 num	erical grade			
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Contents	1 0	,		
	nciples of evolutionary bi			ics (methods and markers), fun- A structure prediction, phylogene-
Intended lea	rning outcomes			
Students are netic recons		databases for seque	nce analysis, RNA st	ructure prediction and phyloge-
Courses (type	, number of weekly contact hours,	language — if other than Ger	man)	
V + Ü (no inf	ormation on SWS (weekly	contact hours) and co	ourse language avail	lable)
Method of a	ssessment (type, scope, langua	age — if other than German, o	examination offered — if no	ot every semester, information on whether
module is credit	able for bonus)	-		
	10 to 20 pages) assessment: German or E	nglish		
Allocation o	places			
allocated as logy) with 18 ces will be a 5% of places ject Biologie thematics an ject Biology ble in one q the other qu places, then courses of a dure, applic tive module they become plicants' pre of ECTS cred all module of thematik (M firstly, accor	follows: Places will prima o ECTS credits. Should the llocated to students of the c (a minimum of one partic (Biology) with 60 ECTS cred d Mathematik (Mathemat (as well as potentially to s tota exceed the number of ota. Should there be, with e will be a uniform regulati module component that a ants who already have suc will be given preferential of e available. Selection proc vious academic achievem its they have achieved and omponents in the subject athematics)) at the time of ding to their average grade	rily be allocated to stree module be used in or Bachelor's degree su- ipant in total) will be edits and to students ics), each with 180 E0 tudents of other 'imp applications, the ren in one module compo- on for the courses of re concerned will be cessfully completed a consideration. A waiti ess group 1 (95%): Pla- ents. For this purpose d their average grade of Biologie (Biology) application. This will e weighted according	udents of the Bache other subjects, there ubject Biologie (Biol allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sh naining places will b onent, several course one module compor allocated in a standa at least one other more ng list will be mainta aces will primarily be of all assessments to (excluding Chemie (Course) be done as follows to the number of EC	f available places, places will be lor's degree subject Biologie (Bio- e will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- egree subjects Computational Ma- of the application-oriented sub- ould the number of places availa- be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number taken during their studies or of Chemistry), Physik (Physics), Ma- : First, applicants will be ranked, CTS credits (qualitative ranking) tative ranking). The applicants'

reg. data record Bachelor (60 ECTS) Biologie - 2013

position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated ac-

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

# Additional information

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Workload

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# Teaching cycle

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

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# Module appears in

Bachelor' degree (1 major) Biology (2013)

Bachelor' degree (1 major) Mathematics (2014)

Bachelor' degree (1 major) Computational Mathematics (2014)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module	title				Abbreviation
Molecular modelling - From DNA to Protein			otein		07-4S1PS1-132-m01
Module coordinator		Module offered by	l		
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	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
	s as we	ell as on the search for ar			function of nucleic acids and molecules using databases and
Intende	ed leari	ning outcomes			
		e acquired a specialist kn rk with relevant database	-	ture-function relation	nships of macromolecules and
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
comput	terised	practical examination (a	pprox. 6 hours)		
Allocat	ion of p	olaces			
logy) w ces will 5% of p ject Bio themat ject Bio ble in o the oth places, courses dure, a tive mo they be plicant: of ECTS all mod themat firstly, a and, se positio cording qualita followin compol	ith 180 be allo laces ( logie () ics and logy (a ne quot there w s of a m pplicar dule w come a s' previ c credit: lule con ik (Mat accordi condly n in a t t to this tive rar ng quot nents o be allo	ECTS credits. Should the poated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat s well as potentially to st the acceed the number of ta. Should there be, within will be a uniform regulation odule component that a the who already have suc- ill be given preferential c available. Selection proce- ous academic achievement s they have achieved and mponents in the subject hematics)) at the time of ng to their average grade , according to their total hird ranking will be calcu- tas: Quota 1 (50% of plac of the Faculty of Biology; a	e module be used in c Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 EG tudents of other 'impe- applications, the ren in one module compe- on for the courses of re concerned will be cessfully completed a consideration. A waiti ess group 1 (95%): Pla ents. For this purposed their average grade of Biologie (Biology) f application. This will e weighted according number of ECTS credit alted as the sum of the plicants with the sam Selection process gra- cess): total number of F among applicants with 5% of places): number	other subjects, there ubject Biologie (Biologie allocated to student of the Bachelor's de CTS credits, as part of orting' subjects). Sh naining places will b onent, several course one module compor allocated in a standa at least one other mo ng list will be mainta acces will primarily be of all assessments t (excluding Chemie (C be done as follows) to the number of EC its achieved (quantif hese two rankings, a ne ranking, places w oup 2 (5%): Places w ECTS credits already th the same number er of subject semeste	lor's degree subject Biologie (Bio will be two quotas: 95% of pla- ogy) with 180 ECTS credits and ts of the Bachelor's degree sub- gree subjects Computational Ma of the application-oriented sub- ould the number of places availa be allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ained and places re-allocated as e allocated according to the ap- ranked according to the number taken during their studies or of Chemistry), Physik (Physics), Ma- : First, applicants will be ranked, TS credits (qualitative ranking) tative ranking). The applicants' and places will be allocated ac- vill be allocated according to the achieved in modules/module of ECTS credits achieved, pla- ers of the respective applicant;

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

# Additional information

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Workload

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# **Teaching cycle**

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

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# Module appears in

Bachelor' degree (1 major) Biology (2013)

Bachelor' degree (1 major) Mathematics (2014)

Bachelor' degree (1 major) Computational Mathematics (2014)

Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module title			Abbreviation	
Methods in Plant Ecophysiology			07-4S1PS2-132-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)	
5 nume	rical grade			
Duration	Module level	Other prerequisites		
1 semester	undergraduate			
Contents		·		
	riments to introduce stud perimental findings in a c			ant ecophysiology as well as dis-
Intended lear	ning outcomes			
	able to use current metho in a scientific context.	ods in plant ecophysic	ology as well as to d	ocument experimental findings
Courses (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü + S (no infor	mation on SWS (weekly	contact hours) and co	urse language avail	able)
Method of ass module is creditab		ge — if other than German, e	examination offered — if no	t every semester, information on whether
log (approx. 10	o to 20 pages)	-		
Allocation of p	olaces			
allocated as fo logy) with 180 ces will be allo 5% of places ( ject Biologie (I thematics and ject Biology (a ble in one quo places, there y courses of a m dure, applican tive module w they become a plicants' previ of ECTS credits all module con thematik (Mat firstly, accordi and, secondly position in a t cording to this qualitative ran following quo components of ces will be allo among applica	ollows: Places will primar ECTS credits. Should the ocated to students of the a minimum of one partic Biology) with 60 ECTS cred Mathematik (Mathemat s well as potentially to sta at exceed the number of a. Should there be, within will be a uniform regulation odule component that a the who already have suc- ill be given preferential co available. Selection proce ous academic achievements they have achieved and mponents in the subject hematics)) at the time of ng to their average grade , according to their total hird ranking will be calcu- tas: Quota 1 (50% of plac of the Faculty of Biology; coated by lot. Quota 2 (29 ants with the same numb	ily be allocated to stue module be used in of Bachelor's degree su ipant in total) will be edits and to students ics), each with 180 EO tudents of other 'imper applications, the rem in one module comport on for the courses of re concerned will be accessfully completed a onsideration. A waiting ess group 1 (95%): Pla ents. For this purpose of Biologie (Biology) ( application. This will e weighted according number of ECTS credi lated as the sum of the policants with the sam Selection process groups): total number of E among applicants with 5% of places): number of subject semesto	adents of the Bachel other subjects, there abject Biologie (Biolo allocated to student of the Bachelor's de CTS credits, as part of porting' subjects). Sho naining places will b onent, several course one module compone allocated in a standa at least one other mod ng list will be mainta aces will primarily be of all assessments to (excluding Chemie (C be done as follows: to the number of EC ts achieved (quantit nese two rankings, a ne ranking, places w ECTS credits already h the same number of subject semeste ers, places will be al	available places, places will be or's degree subject Biologie (Bio- will be two quotas: 95% of pla- ogy) with 180 ECTS credits and s of the Bachelor's degree sub- gree subjects Computational Ma- f the application-oriented sub- ould the number of places availa- e allocated to applicants from es with a restricted number of nent. In this case, places on all ardised procedure. In this proce- odule component of the respec- ined and places re-allocated as e allocated according to the ap- ranked according to the number aken during their studies or of Chemistry), Physik (Physics), Ma- First, applicants will be ranked, TS credits (qualitative ranking) ative ranking). The applicants' nd places will be allocated ac- ill be allocated according to the achieved in modules/module of ECTS credits achieved, pla- ers of the respective applicant; located by lot. Quota 3 (25% of gree subject Biologie (Biology)

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#### 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

Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module title			Abbreviation		
Pharmaceutical Drugs in Plants					07-4S1PS3-132-m01
Module	coord	inator		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)	
5	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
cals as	well as		narmacy. Microscopi	and phytochemical	al plants and phytopharmaceuti- analyses will be performed and ed.
Intende	ed leari	ning outcomes			
Students have acquired a specialist knowledge on active agents from medicinal plants and phytopharmaceuti- cals as well as on the requirements and analytical methods of the pharmacopoeia.					
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)					
Ü + S (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language avail	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)

a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete varies according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course.

# **Allocation of places**

Number of places: 15. Should the number of applications exceed the number of available places, places will be allocated as follows: Places will primarily be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits. Should the module be used in other subjects, there will be two quotas: 95% of places will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits and 5% of places (a minimum of one participant in total) will be allocated to students of the Bachelor's degree subject Biologie (Biology) with 60 ECTS credits and to students of the Bachelor's degree subjects Computational Mathematics and Mathematik (Mathematics), each with 180 ECTS credits, as part of the application-oriented subject Biology (as well as potentially to students of other 'importing' subjects). Should the number of places available in one quota exceed the number of applications, the remaining places will be allocated to applicants from the other quota. Should there be, within one module component, several courses with a restricted number of places, there will be a uniform regulation for the courses of one module component. In this case, places on all courses of a module component that are concerned will be allocated in a standardised procedure. In this procedure, applicants who already have successfully completed at least one other module component of the respective module will be given preferential consideration. A waiting list will be maintained and places re-allocated as they become available. Selection process group 1 (95%): Places will primarily be allocated according to the applicants' previous academic achievements. For this purpose, applicants will be ranked according to the number of ECTS credits they have achieved and their average grade of all assessments taken during their studies or of all module components in the subject of Biologie (Biology) (excluding Chemie (Chemistry), Physik (Physics), Mathematik (Mathematics)) at the time of application. This will be done as follows: First, applicants will be ranked, firstly, according to their average grade weighted according to the number of ECTS credits (qualitative ranking) and, secondly, according to their total number of ECTS credits achieved (quantitative ranking). The applicants' position in a third ranking will be calculated as the sum of these two rankings, and places will be allocated according to this third ranking. Among applicants with the same ranking, places will be allocated according to the qualitative ranking or otherwise by lot. Selection process group 2 (5%): Places will be allocated according to the following quotas: Quota 1 (50% of places): total number of ECTS credits already achieved in modules/module

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(2013)	reg. data record Bachelor (60 ECTS) Biologie - 2013	

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components of the Faculty of Biology; among applicants with the same number of ECTS credits achieved, places will be allocated by lot. Quota 2 (25% of places): number of subject semesters of the respective applicant; among applicants with the same number of subject semesters, places will be allocated by lot. Quota 3 (25% of places): allocation by lot. Should the module be used only in the Bachelor's degree subject Biologie (Biology) with 180 ECTS credits, places will be allocated according to the selection process of group 1.

#### Additional information

Workload

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Teaching cycle

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

Module appears in

Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)

Module title			Abbreviation		
Laboratory Practical Course I			07-S1-LP1-132-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)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Please consult with	academic advisory s	service in advance.
Conten	Its				
		coursed is offered by an titution.	institution that is par	t of the University. C	ontents to be determined by the
Intend	ed lear	ning outcomes			
Studer	nts have	e developed skills which	qualify them to work	in their profession.	
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
P (no ir	nformat	tion on SWS (weekly cont	act hours) and cours	e language available	2)
		<b>sessment</b> (type, scope, langua ole for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
candid tes per 2 hours	ate eac <sup>·</sup> candic s; time	ch (approx. 30 minutes) o late) or e) presentation (a	r d) oral examination approx. 20 to 30 minu ding to subject area b	in groups of up to 3 ites) or f) practical e out will not exceed a	ges) or c) oral examination of one candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students urse.
Allocat	ion of <sub>l</sub>	places			
Additio	onal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Biology (2013)					
	-	ree (1 major) Mathematic	•		
	-	ree (1 major) Computatio		14)	
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)					

Module title			Abbreviation		
Excursion I					07-S1-Ex1-132-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)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Please consult with	academic advisory s	service in advance.
Conten	ts				
Conten	ts of th	e field trip to be determin	ned by the respective	institution.	
Intende	ed learı	ning outcomes			
Studen	ts have	e developed skills which	qualify them to work	in their profession.	
Course	<b>S</b> (type, n	umber of weekly contact hours, l	anguage — if other than Ger	rman)	
E (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		s <b>essment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
candida tes per 2 hours	ate eac candid s; time	h (approx. 30 minutes) o late) or e) presentation (a	r d) oral examination approx. 20 to 30 minu ding to subject area b	in groups of up to 3 utes) or f) practical e out will not exceed a	ges) or c) oral examination of one candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students urse.
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachi	ng cycl	e			
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Bachel Bachel	Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)				

Module title			Abbreviation	
Interdisciplinary Project I			07-S1-IP1-132-m01	
Module coordinator		Module offered by		
Coordinator BioCareers	- <u>F</u>	Faculty of Biology		
ECTS Method of grading	Only after succ. con	pl. of module(s)		
5 numerical grade				
Duration Module level	Other prerequisites			
1 semester undergraduate	Please consult with	academic advisory s	service in advance.	
Contents				
Contents of the project to be determine	ned by the competent	coordinators; conter	nts will vary according to topic.	
Intended learning outcomes				
Students have developed skills which	n qualify them to work	in their profession.		
Courses (type, number of weekly contact hours	, language — if other than Ger	man)		
R (no information on SWS (weekly co	ntact hours) and cours	e language available	2)	
Method of assessment (type, scope, lange module is creditable for bonus)	uage — if other than German, o	examination offered — if no	ot every semester, information on whether	
a) written examination (approx. 45 to candidate each (approx. 30 minutes) tes per candidate) or e) presentation 2 hours; time to complete varies acco will be informed about the method ar	or d) oral examination (approx. 20 to 30 minu ording to subject area b	in groups of up to 3 ites) or f) practical e out will not exceed a	candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students	
Allocation of places				
Additional information				
Workload				
Teaching cycle				
Referred to in LPO I (examination regulations for teaching-degree programmes)				
Module appears in				
Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)				

Module title			Abbreviation		
Externa	l Pract	ical Course			07-5EP-132-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)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate	Please consult with	academic advisory s	service in advance.
Conten	ts				
		complete a placement at ned by the respective ins		niversity research ir	nstitution or a business. Contents
Intende	ed leari	ning outcomes			
		amiliar with the structure o work in their professior		ons and businesses	and have developed skills which
Courses	<b>5</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
P (no in	format	ion on SWS (weekly cont	act hours) and cours	e language available	2)
		<b>eessment</b> (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
candida tes per 2 hours	ate eac candid ; time	h (approx. 30 minutes) o late) or e) presentation (a	r d) oral examination approx. 20 to 30 minu ding to subject area b	in groups of up to 3 ites) or f) practical e out will not exceed a	ges) or c) oral examination of one candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students urse.
Allocati	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teaching cycle					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)					

Module title				Abbreviation	
Excursion II					07-S2-EX2-132-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	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Please consult with	academic advisory s	service in advance.
Conten	ts				
Conten	ts of th	e field trip to be determin	ned by the respective	institution.	
Intend	ed lear	ning outcomes			
Studen	its have	e developed skills which	qualify them to work	in their profession.	
Course	<b>S</b> (type, r	number of weekly contact hours, l	anguage — if other than Ger	man)	
E (no ir	nformat	ion on SWS (weekly cont	act hours) and course	e language available	e)
module is a) writt	s creditab en exa	le for bonus) mination (approx. 45 to 6	o minutes) or b) log (	approx. 10 to 20 pag	ot every semester, information on whether ges) or c) oral examination of one
tes per 2 hours	candic s; time	late) or e) presentation (a	approx. 20 to 30 minu ding to subject area b	ites) or f) practical ex out will not exceed a	candidates (approx. 20 minu- xamination (on average approx. maximum of 4 hours). Students urse.
Allocat	ion of <sub>l</sub>	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					
Bachelor' degree (1 major) Biology (2013)					
	-	ree (1 major) Mathematic			
	-	ree (1 major) Computation gree (1 major, 1 minor) Bi		14)	
Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)					

Module	e title		Abbreviation					
Interdi	sciplina	ary Project II		07-S2-IP2-132-m01				
Module	e coord	inator		Module offered by				
Coordinator BioCareers			_	Faculty of Biology				
ECTS	ECTS Method of grading		Only after succ. compl. of module(s)					
10	o numerical grade		<u>-</u>					
Duration Modu		Module level	Other prerequisites					
1 semester		undergraduate	Please consult with	academic advisory s	service in advance.			
Contents								
Contents of the project to be determined by the competent coordinators; contents will vary according to topic.								
Intended learning outcomes								
Students have developed skills which qualify them to work in their profession.								
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)								
R (no information on SWS (weekly contact hours) and course language available)								
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)								
a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete varies according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course.								
Allocat	ion of <sub>l</sub>	olaces						
Additional information								
Worklo	ad							
Teaching cycle								
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)								
Module appears in								
Bachelor' degree (1 major) Biology (2013) Bachelor' degree (1 major) Mathematics (2014) Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)								

Module	title		Abbreviation						
Labora	tory Pr	actical Course II	07-S2-LP2-132-m01						
Module	e coord	inator		Module offered by					
Coordinator BioCareers				Faculty of Biology					
ECTS	Metho	ethod of grading Only after succ. compl. of module(s)							
10	10 numerical grade								
Duration		Module level	Other prerequisites	uisites					
1 semester		undergraduate	Please consult with	academic advisory s	service in advance.				
Contents									
This practical coursed is offered by an institution that is part of the University. Contents to be determined by the respective institution.									
Intended learning outcomes									
Students are familiar with the structures of internal institutions and have developed skills which qualify them to work in their profession.									
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)									
P (no information on SWS (weekly contact hours) and course language available)									
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)									
a) written examination (approx. 45 to 60 minutes) or b) log (approx. 10 to 20 pages) or c) oral examination of one candidate each (approx. 30 minutes) or d) oral examination in groups of up to 3 candidates (approx. 20 minutes per candidate) or e) presentation (approx. 20 to 30 minutes) or f) practical examination (on average approx. 2 hours; time to complete varies according to subject area but will not exceed a maximum of 4 hours). Students will be informed about the method and length of the assessment prior to the course.									
Allocat	ion of p	olaces							
Additio	nal inf	ormation							
Workload									
Teaching cycle									
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)									
Module appears in									
Bachelor' degree (1 major) Biology (2013)									
Bachelor' degree (1 major) Mathematics (2014)									
Bachelor' degree (1 major) Computational Mathematics (2014) Bachelor's degree (1 major, 1 minor) Biology (Minor, 2013)									
Bachelo	ur s ae	gree (1 major, 1 minor) Bi	010gy (MINOr, 2013)						