

# Subdivided Module Catalogue for the Subject

# Biology

## as a minor in a Bachelor's degree programme (60 ECTS credits)

Examination regulations version: 2008 Responsible: Faculty of Biology

JMU Würzburg • generated 23-Aug-2021 • exam. reg. data record B1|026|-|-|N|2008



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

No translation available.



## **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:

#### ASPO2007

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

#### 28-Apr-2009 (2009-36)

This module handbook seeks to render, as accurately as possible, the data that is of statutory relevance according to the examination regulations of the degree subject. However, only the FSB (subject-specific provisions) and SFB (list of modules) in their officially published versions shall be legally binding. In the case of doubt, the provisions on, in particular, module assessments specified in the FSB/SFB shall prevail.

## The subject is divided into

Julius-Maximilians-UNIVERSITÄT WÜRZBURG

Abbrovistion	Module title		Method of	
Addreviation			grading	page
Compulsory Courses (46 EC	TS credits)			
General Biology I (10 ECTS	credits)			
07-1A1ZO-NF-082-m01	From Cells to Organisms for minor field of study	10	NUM	34
General Biology II (9 ECTS	credits)			R
07-2A2GNV-072-m01	Genetics, Neurobiology, Behaviour	6	NUM	14
07-2A2TP-NF-082-m01	Basic Physiology of Animals for minor field of study	3	NUM	33
General Biology III (16 ECT	S credits)			
07-3A3EBIO-072-m01	Developmental Biology of Plants and Animals	10	NUM	11
07-3A30ET-NF-082-m01	Ecology of animals for minor field of study	3	NUM	24
07-3A30EP-NF-082-m01	Ecology of plants for minor field of study	3	NUM	23
Mathematics/Quantitative	Biology (4 ECTS credits)	•		
07-2BM-072-m01	Mathematical Biology and Biostatistics	4	NUM	18
General Biology IV (7 ECTS	credits)	•		
07-4A4FA-072-m01	Local Fauna	7	NUM	9
Compulsory Electives (14 EC	TS credits)	•	•	<b>.</b>
General Biology III (4 ECTS	S credits)			
07-3A3BT-072-m01	Biotechnology	2	NUM	6
07-3A3BI-072-m01	Bioinformatics	2	NUM	5
07-3A3PB-072-m01	Pharmaceutical Biology	2	NUM	29
General Biology II/IV and	Special Biosciences I (10 ECTS credits)	·		P
07-4A4FL-072-m01	Local Flora	7	NUM	10
03-4S1HG-092-m01	Human Genetics	5	NUM	16
07-4S1MZ1-092-m01	Advanced Light- and Electron-Microscopy	3	NUM	19
07-4S1MZ2-092-m01	Analysis of Chromosomes	3	NUM	7
07-4S1MZ3-092-m01	Ecology and Developmental Biology of marine organisms	5	NUM	25
07-4S1MZ6-092-m01	Special Bioinformatics I	5	NUM	32
07-4S1NVO1-092-m01	Neurobiology I	5	NUM	21
07-4S1NVO2-092-m01	Aspects of Integrative Behavioural Biology	5	NUM	17
07-4S1NVO3-092-m01	Fuctional Morphology of arthropods	5	NUM	12
07-4S1NVO4-092-m01	Ecology of insects	5	NUM	22
07-4S1NV05-092-m01	Ecology of populations	5	NUM	31
07-4S1PS1-092-m01	Molecular modelling - From DNA to protein	5	NUM	20
07-4S1PS2-092-m01	Introduction Methods in Plant Ecophysiology	5	NUM	8
07-4S1PS3-092-m01	Pharmaceutical Drugs	5	NUM	28
07-4S1PS4-092-m01	Methods Pharmaceutical Biology - practical course	5	NUM	15
07-2A2PPR-NF-082-m01	Basic Physiology of Prokaryotes for minor field of study	3	NUM	30
07-2A2PPF-NF-082-m01	Basic Physiology of Plants for minor field of study	3	NUM	27

Module title			Abbreviation		
Bioinformatics 07-3A3BI-			07-3A3BI-072-m01		
Module	e coord	inator		Module offered by	
holder	of the (	Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Fundan	nental	principles of bioinformat	ics.		
Intende	ed lear	ning outcomes			
Studen	ts are p	proficient in methods for	the analysis of DNA a	nd protein database	25.
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
This mo compor	odule c nent. 7-3A3E 7-2A2F	omprises 2 module comp 81-1B-072: V (no informati 81-2B-072: S (no informati	oonents. Information on on SWS (weekly c	on courses will be lis ontact hours) and co	sted separately for each module ourse language available)
Method ster, inf	<b>i of ass</b> formati	<b>Sessment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Assessment in this module comprises the assessments in the individual module components as specified be- low. Unless stated otherwise, successful completion of the module will require successful completion of all indi- vidual assessments.					
<ul> <li>Assessment in module component o7-3A3BI-1B-072: Bioinformatics (Lecture)         <ul> <li>1 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 20 minutes)</li> </ul> </li> <li>Assessment in module component o7-3A3BI-2B-072: Bioinformatics (Seminar)         <ul> <li>1 ECTS, Method of grading: (not) successfully completed</li> <li>term paper (approx. 5 to 10 pages)</li> </ul> </li> </ul>					
Allocation of places					
Only as part of Biochemistry Master's: 5 places. Places will be allocated by lot.					
Additional information					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					

Module title					Abbreviation
Biotechnology					07-3A3BT-072-m01
Module	e coord	inator		Module offered by	·
holder	of the (	Chair of Biotechnology ar	d Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
2	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This mo biotech neering	odule w nnology g and m	vill provide students with v, microbiotechnology an nicrobial biotechnology.	an overview of topic d nanobiotechnology	s in biotechnology: k , biomaterials, cryok	piosensors and environmental piotechnology, bioprocess engi-
Intende	ed lear	ning outcomes			
Studen	its have	e become familiar with th	e fundamental princi	ples of biotechnolog	<u>zy.</u>
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	ın)
V + S (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho ster, in	<b>d of ass</b> formati	<b>sessment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (30 minutes)			
Allocation of places					
Additional information					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
			U	,	

Module title					Abbreviation
Analysi	Analysis of Chromosomes				07-4S1MZ2-092-m01
Module	e 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	pl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Overvie	w of th	e structure of chromosor	nes of somatic and m	neiotic cells.	
Intende	ed lear	ning outcomes			
Studen	ts are a	able to analyse chromoso	omal structures.		
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infoi	rmation on SWS (weekly	contact hours) and co	ourse language avail	able)
Methoo ster, in	<b>l of ass</b> formati	sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (45 minutes)			
Allocation of places					
Additional information					
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					

Module title				Abbreviation	
Introduction Methods in Plant Ecophysiology				07-4S1PS2-092-m01	
Module	e coord	inator		Module offered by	
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Comple cussior	ex expe 1 of exp	riments to introduce stud perimental findings in a c	lents to the current s omprehensive scient	tate of research in pl ific context.	ant ecophysiology as well as dis-
Intende	ed learr	ning outcomes	,		
Studen and pu	ts are a t these	able to use current metho in a scientific context.	ods in plant ecophysio	ology as well as to d	ocument experimental findings
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language –	· if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
Method ster, in	<b>d of ass</b> formati	e <b>ssment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
log (ap	prox. 10	o to 20 pages)			
Allocation of places					
Additio	nal info	ormation			
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)				
			<u> </u>		

Module title			Abbreviation		
Local F	Local Fauna 07-4A4FA-072-m01				
Module coordinator				Module offered by	
holder	of the (	Chair of Animal Ecology a	nd Tropical Biology	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
7	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
In this They w cording will be provide tifving	In this module, students will acquire an overview of selected groups of animals to be found in Central Europe. They will acquire a fundamental knowledge of the systematics and taxonomy as well as on the quantitative re- cording of biodiversity and will practise identifying species, using specimens of animals. Selection of specimens will be taxon-specific and will represent specific habitats or lifestyles. Field exercises in a variety of habitats will provide students with an opportunity to consolidate the knowledge and skills they acquired in the lab by iden-				
Intend	ed lear	ning outcomes			
Students know how to taxonomically classify selected representatives of the indigenous fauna (vertebrates, in- vertebrates) and use identification keys. They are familiar with selected Central European habitats as well as their faunas and phenology. On the basis of the morphology and habitats of species, students are able to predict the biology and ecology of these species as well as, where applicable, to predict whether they function as indica- tors and are of conservation concern.					
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
This mo compo • c	odule c nent. 97-4A4F 97-4A4F	omprises 2 module comp A-1FA-072: V + Ü (no info A-2FA-072: E (no informa	oonents. Information rmation on SWS (wee tion on SWS (weekly	on courses will be lis ekly contact hours) a contact hours) and c	sted separately for each module nd course language available) course language available)
Metho ster, in	<b>d of ass</b> formati	sessment (type, scope, la ion on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Assess low. Ur vidual	ment ir Iless st assessi	n this module comprises ated otherwise, successf ments.	the assessments in t ul completion of the	he individual module module will require s	e components as specified be- successful completion of all indi-
<ul> <li>Assessment in module component o7-4A4FA-1FA-072: Fauna (Lecture, Practice on Systematic) Fauna (Lecture, Practice on Systematic)</li> <li>4 ECTS, Method of grading: numerical grade</li> <li>written examination (45 minutes) and practical identification assignment (45 minutes); weighted 1:1</li> <li>Assessment in module component o7-4A4FA-2FA-072: Fauna Field Excursions</li> <li>3 ECTS, Method of grading: (not) successfully completed</li> <li>log (approx 1 to 2 pages) and presentation (approx 10 minutes)</li> </ul>					
Allocat	ion of r	olaces			
Additio	nal inf	ormation			
Auultio					
Referre	ed to in	LPUI (examination regu	lations for teaching-o	legree programmes)	

Module	title	Abbreviation			
Local F	lora			07-4A4FL-072-m01	
Module	coordinator		Module offered by		
holder gy	of the Chair of Ecophysiology a	and Vegetation Ecolo-	Faculty of Biology		
ECTS Method of grading Only after succ. cor			pl. of module(s)		
7	numerical grade				
Duratio	n Module level	Other prerequisites			
1 seme	ster undergraduate				
Conten	ts				
The module will discuss the fundamental principles of the systematics and ecology of flowering plants. Students will acquire an overview of the major flowering plants to be found in the temperate zone as well as their ecological and economic importance. Using the field guide <i>Flora von Deutschland</i> by Schmeil-Fitschen, 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.					
Studen	ts have acquired knowledge a	nd skills related to the	ecology, systematic	s and taxonomy of i	ndigenous
flowerii up scie	ng plants. They are familiar wit ntific herbaria.	h the terminology of p	lant morphology and	l know how to use Fl	oras and set
Course	<b>s</b> (type, number of weekly cont	tact hours, language —	· if other than Germa	n)	
This mo	odule comprises 2 module com	nponents. Information	on courses will be li	sted separately for e	each module
compoi	nent.				
	7-4A4FL-1FL-072: V + U (no info 7-4A4FL-2FL-072: F (no inform)	ormation on SWS (wee ation on SWS (weekly)	kly contact hours) ar	nd course language avai	available) ilable)
Method	of assessment (type, scope,	language — if other that	an German, examina	tion offered — if not	every seme-
ster, in	formation on whether module	can be chosen to earn	a bonus)		
Assess low. Un vidual a	ment in this module comprises less stated otherwise, success assessments.	s the assessments in t sful completion of the	he individual module module will require s	e components as sp successful completio	ecified be- on of all indi-
<ul> <li>Assessment in module component o7-4A4FL-1FL-072: Flora (Lecture, Practice on Systematic) Flora (Lecture, Practice on Systematic)</li> <li>4 ECTS, Method of grading: numerical grade</li> <li>written examination (45 minutes) and practical identification assignment (60 minutes); weighted 1:1</li> <li>Assessment in module component o7-4A4FL-2FL-072: Flora Field Excursions</li> <li>3 ECTS, Method of grading: (not) successfully completed</li> <li>log (approx. 1 to 2 pages) and presentation (approx. 10 minutes)</li> <li>Allocation of places</li> </ul>					
Additional information					
<b>Referred to in IPO I</b> (examination regulations for teaching-degree programmes)					
minor in a E	Bachelor's degree programme Biology	JMU Würzbu	rg • generated 23-Aug-2021 • rd Bachelor (60 FCTS) Biolog	• exam. ie - 2008	page 10 / 35
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Module	title				Abbreviation
Developmental Biology of Plants and Animals			07-3A3EBIO-072-m01		
Module	coord	inator		Module offered by	
Dean of	fStudie	es Biologie (Biology)		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
10	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Conten	ts				
In this r plant de	nodule evelop	e, students will acquire ar mental biology.	n overview of the theo	pretical and practical	l fundamentals of animal and
Intende	ed learn	ning outcomes			
1. Funda Selecte embryo ontoger	amenta d mole nic axe ny and	al concepts in developme cular mechanisms that re es. 5. Examples of mecha evolution. 7. Physiologic	ental biology. 2. Deve egulate determination nisms of morphogene al aspects of the deve	lopmental biology of n and differentiation esis and organogene elopmental processe	f selected model organisms. 3. processes. 4. Establishment of esis. 6. Interrelations between es discussed.
Courses	<b>s</b> (type,	, number of weekly conta	ct hours, language —	if other than Germa	n)
This mo compor • o • o	<ul> <li>This module comprises 2 module components. Information on courses will be listed separately for each module component.</li> <li>o7-3A3EBIO-1T-072: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o7-3A3EBIO-2P-072: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> </ul>				
Method ster, inf	<b>l of ass</b> formati	<b>essment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
Assessi low. Un vidual a	ment ir less st assessi	n this module comprises t ated otherwise, successf ments.	the assessments in the ul completion of the u	ne individual module module will require s	e components as specified be- successful completion of all indi-
<ul> <li>Assessment in module component o7-3A3EBIO-1T-072: Developmental Biology of Animals (Lecture and Experimental Course) Developmental Biology of Animals (Lecture and Experimental Course)</li> <li>5 ECTS, Method of grading: numerical grade</li> <li>written examination (60 minutes)</li> <li>Assessment in module component o7-3A3EBIO-2P-072: Developmental Biology of Plants (Lecture and experimental course) (Lecture and Experimental Course) Developmental Biology of Plants (Lecture and experimental course) (Lecture and Experimental Course) Developmental Biology of Plants (Lecture and experimental course) (Lecture and Experimental Course)</li> <li>5 ECTS, Method of grading: numerical grade</li> <li>written examination (60 minutes)</li> </ul>					
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	
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Module	e title				Abbreviation	
Fuctior	nal Mor	phology of arthropods			07-4S1NVO3-092-m01	
Module	e coord	linator		Module offered by		
holder of the Chair of Zoology III		Faculty of Biology				
ECTS	Meth	od of grading	Iding Only after succ. compl. of mo			
5	nume	rical grade		-		
Duratio	on	Module level	Other prerequisites	i		
1 seme	ster	undergraduate	Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.			
Conten	Its		•			

Morphology, anatomy, phylogeny and ecology of arthropods.

#### Intended learning outcomes

Students are able to explain arthropod radiations in a functional context as well as to explain the importance of arthropods to ecosystems.

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 can be chosen to earn a bonus)

term paper (approx. 5 to 10 pages)

#### 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 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.

minor in a Bachelor's degree programme Biology	JMU Würzburg • generated 23-Aug-2021 • exam.	page 12 / 35
(2008)	reg. data record Bachelor (60 ECTS) Biologie - 2008	



#### Additional information

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

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Module title			Abbreviation			
Genetics	Genetics, Neurobiology, Behaviour 07-2A2GNV-072-m01					
Module coordinator		Module offered by				
Dean of	Studies Biologie (Biology)		Faculty of Biology			
ECTS I	Method of grading	Only after succ. con	pl. of module(s)			
6 r	numerical grade					
Duration	Module level	Other prerequisites				
1 semest	ter undergraduate	By way of exception	, additional prerequi	sites are listed in the section on		
		assessments.				
Contents	5					
Fundame	ental principles of genetics, n	eurobiology and beha	vioural biology.			
Intended	l learning outcomes					
[Version processe bases of cal mech molecula	1: Students will understand these involved in animal behaviou inheritance.] [Version 2: Stud nanisms and processes involv ar and formal bases of inherita	nat there are molecula ur and will be able to ents will understand ed in animal behavior ance.]	ar, cellular and syste relate animal behavi that there are molec ur and will be able to	m biological mechanisms and our to the molecular and formal ular, cellular and system biologi- relate animal behaviour to the		
Courses	(type, number of weekly conta	act hours, language –	- if other than Germa	n)		
This mod	dule comprises 3 module com	ponents. Information	on courses will be li	sted separately for each module		
<ul> <li>o7-2A2GNV-1G-072: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o7-2A2GNV-2N-072: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o7-2A2GNV-3V-072: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)</li> </ul>						
<ul> <li>low. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.</li> <li>Assessment in module component o7-2A2GNV-1G-072: Basic Genetics Basic Genetics <ul> <li>2 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 30 minutes)</li> <li>Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.</li> </ul> </li> <li>Assessment in module component o7-2A2GNV-2N-072: Basic Neurobiology Basic Neurobiology <ul> <li>2 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 30 minutes)</li> </ul> </li> <li>Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.</li> <li>Assessment in module component o7-2A2GNV-2N-072: Basic Neurobiology Basic Neurobiology</li> <li>2 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 30 minutes)</li> <li>Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.</li> <li>Assessment in module component o7-2A2GNV-3V-072: Behavioural Biology Behavioural Biology</li> <li>2 ECTS, Method of grading: numerical grade</li> <li>written examination (approx. 30 minutes, word problems and/or multiple choice questions)</li> <li>Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises and successful completion of the respective exercises as specified at the beginning of the course.</li> </ul> <li>Allocation of places</li>						
Addition	al information	ebol : 10 places.				
Referred	to in LPO I (examination regu	llations for teaching-	degree programmes)			

minor in a Bachelor's degree programme Biology	
(2008)	

#### JMU Würzburg • generated 23-Aug-2021 • exam. reg. data record Bachelor (60 ECTS) Biologie - 2008

Module title			Abbreviation				
Methods Pharmaceutical Biology - practical course				07-4S1PS4-092-m01			
Module o	coordi	nator		Module offered by			
holder of	f the C	hair of Pharmaceutical B	iology	Faculty of Biology			
ECTS N	Metho	d of grading	Only after succ. com	pl. of module(s)			
5 n	numeri	cal grade					
Duration	ı .	Module level	Other prerequisites				
1 semest	er	undergraduate					
Contents	5						
This mod in molecu	dule wi ular bi	ll provide students with ology and drug analysis.	a theoretical and me	thodological introdu	iction to fundamental techniques		
Intended	l learn	ing outcomes					
Students	s are a	ole to analyse groups of	drugs, using a variet	v of methods.			
Courses	(type.	number of weekly conta	ct hours. language —	· if other than Germa	n)		
This mod compone • 07- • 07-	This module comprises 2 module components. Information on courses will be listed separately for each module component. • 07-451PS4-1PB-092: P (no information on SWS (weekly contact hours) and course language available)						
Method of ster, info	of asse ormatio	essment (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
Assessm low. Unle vidual as	ient in ess sta ssessm	this module comprises t ted otherwise, successf nents.	the assessments in t ul completion of the	he individual module module will require s	e components as specified be- successful completion of all indi-		
Assessm Drugs (La • 4 E • wri Assessm ceutical I • 1 E • pre • Ass	aborat aborat ECTS, N itten e <b>nent in</b> Drugs ECTS, N esenta sessm	<b>module component o7-</b> ory Course) Method of grading: nume xamination (45 minutes) <b>module component o7-</b> Method of grading: (not) st tion (approx. 20 to 30 m ent offered: once a year,	4 <b>S1PS4-1PB-092:</b> Ana erical grade 4 <b>S1PS4-2PB-092:</b> Se successfully complet inutes) , winter semester	alytics and Molecula minar on Analytics a ed	r Biology of Pharmaceutical nd Molecular Biology of Pharma-		
Allocatio	on of p	aces					
Addition	al info	rmation					
Referred	to in I	<b>POI</b> (examination regul	lations for teaching-c	legree programmes)			

Module	e title				Abbreviation	
Human	Genet	ics			03-4S1HG-092-m01	
Module coordinator Module offered by						
holder	of the (	Chair of of Human Geneti	cs	Faculty of Medicine		
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	By way of exception assessments.	, additional prerequi	isites are listed in the section on	
Conten	ts					
Fundar human	nentals karyot	s of and analytical metho ype and chromosome ab	ds in human and vert errations. Introductio	ebrate cytogenetics. n to chromosome ev	Characterisation of the normal volution.	
Intende	ed lear	ning outcomes				
Studen genetic dings.	its who s. They	complete this module w will learn how to prepar	ill acquire the theoret e and identify human	ical basis of and pra chromosomes and	actical experience in human cyto- critically interpret cytogenetic fin-	
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)	
compo • c • c Methor ster, in	nent. 93-4S1F 93-4S1F 93-4S1F d of ass	IG-1HZ-092: V + Ü (no info IG-2HZ-092: S (no inform sessment (type, scope, la ion on whether module ca	ormation on SWS (wee ation on SWS (weekly nguage — if other tha an be chosen to earn	ekly contact hours) a y contact hours) and an German, examina a bonus)	nd course language available) course language available) tion offered — if not every seme-	
Assess low. Ur vidual	ment ii iless st assess	a this module comprises ated otherwise, successf ments.	the assessments in the ful completion of the	ne individual module module will require s	e components as specified be- successful completion of all indi-	
Assess man Ge • 3 • 2 a • 0 Assess • 2 • p • 0	ment in enetics ECTS, writte mination Other pro- ment in ECTS, oresent Other pro-	n module component o3- (Lecture and Laboratory Method of grading: nume n examinations (multiple on (20 minutes) rerequisites: A basic know n module component o3- Method of grading: (not) ation (approx. 20 to 30 m rerequisites: A basic know	<b>4S1HG-1HZ-092:</b> Hun Practice) erical grade e choice): mid-semest wledge of genetics is <b>4S1HG-2HZ-092:</b> Hur successfully complet inutes) wledge of genetics is	nan Genetics (Lectur ter examination (15 recommended. nan Genetics (Semir ted recommended.	e and Laboratory Practice) Hu- minutes), end-of-semester ex- nar)	
Allocat	Allocation of places					
Additio	onal inf	ormation				
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)		
	<u></u>	(channation legu		earce programmes)		

Module title     A			Abbreviation		
Aspect	s of Int	egrative Behavioural Bio	logy		07-4S1NVO2-092-m01
Module coordinator Module offered by					
holder	of the (	Chair of Zoology II		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	By way of exception	, additional prerequi	isites are listed in the section on
			assessments.		
Conten	ts				
Commu sing of viour, s	unicatio olfacto social b	on in the animal kingdom ry signals, temporal orga ehaviour, orientation me	, neuroethology and nisation of behaviou chanisms.	behavioural develop Ir, adaptive feeding b	oment, perception and proces- behaviour, reproductive beha-
Intend	ed lear	ning outcomes			
Studer sentati	its have ons on	e acquired an advanced k current studies on releva	nowledge in the area ant topics.	a of behavioural biol	ogy and are able to deliver pre-
Course	<b>s</b> (type	, number of weekly conta	ct hours, language –	- if other than Germa	ın)
This mo compo • c	odule c nent. 97-4S1N	omprises 2 module comp VO2-1IV-092: V (no infor	ponents. Information mation on SWS (wee mation on SWS (wee	on courses will be li kly contact hours) ar kly contact hours) ar	sted separately for each module nd course language available) nd course language available)
Motho	d of acc	accment (type scope la	induotion on SWS (wee	an Corman, ovamina	tion offered if not even come
ster. in	formati	on on whether module ca	an be chosen to earn	a bonus)	tion onered — If not every seme-
Assess low. Ur vidual Assess and Pra	ment in aless st assess ment in actice) ECTS, written o	n this module comprises ated otherwise, successf ments. <b>n module component 07-</b> Method of grading: nume examination (20 minutes)	the assessments in t ful completion of the <b>4S1NVO2-1IV-092:</b> As prical grade	he individual module module will require s spects of Integrative	e components as specified be- successful completion of all indi- Behavioural Biology 1 (Lecture
<ul> <li>written examination (30 minutes)</li> <li>Language of assessment: German or English</li> <li>Other prerequisites: A good command of the English language is recommended.</li> <li>Assessment in module component 07-4S1NVO2-2IV-092: Current Topics in Behavioural Biology</li> <li>3 ECTS, Method of grading: (not) successfully completed</li> <li>presentation (approx. 20 to 30 minutes)</li> <li>Assessment offered: once a year, summer semester</li> <li>Language of assessment: German or English</li> <li>Other prorequisites: A good command of the English language is recommended</li> </ul>					
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Doform	d to in	IDOL (overside the second	lations for tasshing	dograa programme -	
Kererre	a to in	LPUT (examination regu	lations for teaching-	uegree programmes)	

Module title				Abbreviation	
Mathematical Biology and Biostatistics			5		07-2BM-072-m01
Module	e coord	inator		Module offered by	
holder	of the (	Chair of Bioinformatics		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	Admission prerequi	site to assessment: I	regular attendance of exercises
			and successful com	pletion of the respec	tive exercises as specified at the
			beginning of the cou	urse.	
Conten	ts				
Fundan	nental	principles of the most im	portant mathematica	l and statistical met	hods in biology.
Intende	ed learı	ning outcomes			
Studen and nu	ts will I mbers	have acquired fundamen as well as the mathemati	tal skills in the evalu cal description of bic	ation of experiments blogical processes.	, the interpretation of readings
Course	<b>s</b> (type	, number of weekly conta	ict hours, language —	- if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
Methoo ster, in	<b>d of ass</b> formati	<b>sessment</b> (type, scope, la on on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (approx. 45 minut	es) including multiple	e choice questions	
Allocat	ion of p	olaces			
Only as	s part o	f "spezielles Studienange	ebot": 30 places.		
Additio	nal inf	ormation			
Referre	d to in	LPOI (examination regu	lations for teaching-o	degree programmes)	
written examination (approx. 45 minutes) including multiple choice questions Allocation of places Only as part of "spezielles Studienangebot": 30 places. Additional information Referred to in LPO I (examination regulations for teaching-degree programmes)					

Module title				Abbreviation	
Advanced Light- and Electron-Microscopy					07-4S1MZ1-092-m01
Module	e 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	pl. of module(s)	
3	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	light and electron microscopy.
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Method ster, in	<b>l of ass</b> formati	<b>essment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (45 minutes)			
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Referre	d to in	LPO I (examination regu	lations for teaching-o	legree programmes)	

Module title					Abbreviation
Molecular modelling - From DNA to protein					07-4S1PS1-092-m01
Module	e coord	inator		Module offered by	
holder	of the C	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
This mo protein specifio	odule w s as we c softwa	vill equip students with a ell as on the search for ar are.	dvanced knowledge on analysis and mode	on the structure and Illing of plant macro	function of nucleic acids and molecules using databases and
Intende	ed learr	ning outcomes			
Studen are abl	ts have e to wo	e acquired a specialist kn rk with relevant database	owledge of the struct es and software.	ure-function relation	nships of macromolecules and
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language —	if other than Germa	in)
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Methoo ster, in	<b>d of ass</b> formati	e <b>ssment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
comput	terised	practical examination (4	hours)		
Allocat	ion of p	olaces			
Additional information					
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	

Module title			Abbreviation		
Neurobiology I					07-4S1NV01-092-m01
Modul	e coord	inator		Module offered by	
holder	of the (	Chair of Neurobiology an	d Genetics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	npl. of module(s)	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conter	Its				
Neurot	oiology	and methods in neurobi	ology, using Drosoph	ila as a neurogenetic	: model system.
Intend	ed lear	ning outcomes			
Studer the rele	nts have evant m	e acquired an advanced nethods in neurobiology.	knowledge of the neu	robiology of a mode	organism and are able to apply
Course	<b>s</b> (type	, number of weekly cont	act hours, language –	- if other than Germa	n)
P (no ii	nformat	tion on SWS (weekly con	tact hours) and cours	e language available	4)
Metho ster, in	<b>d of ass</b> formati	sessment (type, scope, la ion on whether module o	anguage — if other th an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
log (ap	prox. 1	o to 20 pages)			
Allocat	ion of <sub>l</sub>	olaces			
Additio	onal inf	ormation			
Referre	ed to in	LPOI (examination reg	ulations for teaching-	degree programmes)	

Module title Abbreviation					Abbreviation
Ecology of insects					07-4S1NVO4-092-m01
Module	e coord	inator		Module offered by	
holder	of the (	Chair of Zoology III		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			
Conten	ts				
Taxonc and lat	omy, eco o work.	ology (synecology in part	icular) and behaviou	ral biology of insects	s, including experimental field
Intend	ed learı	ning outcomes			
Studer sect ec	its are p ology a	proficient in insect diagno nd behavioural biology.	ostics and are able to	apply appropriate n	nethods for experiments on in-
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	· if other than Germa	n)
V + Ü (I	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho ster, in	<b>d of ass</b> formati	s <b>essment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (60 minutes)			
Allocat	ion of p	olaces			
Additio	onal info	ormation			
Referre	ed to in	LPOI (examination regu	lations for teaching-o	legree programmes)	

Module title					Abbreviation
Ecology	/ of pla	nts for minor field of stu		07-3A30EP-NF-082-m01	
Module	coord	inator		Module offered by	
holder o	of the Q	Chair of Plant Physiology	and Biophysics	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	nume	rical grade			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate			
Content	ts				
environ the stru concept knowled	ments. ments. Icture a ts of ec dge ne	The module students with The module will focus o and dynamics of populati cology, will become famil cessary to develop an un	an overview of the in n the functional adap ons and ecosystems. iar with examples of derstanding of currer	teractions of plants tation to environme Students will be int research findings an nt ecological probler	with their abiotic and biotic ntal conditions as well as on roduced to fundamental model d will acquire the fundamental ns.
Intende	ed learr	ning outcomes			
Student portant their en ronmen adaptat well as	ts are f abiotio vironm tal isso tions o interac	amiliar with the fundame c and biotic factors that in nent. In addition, they un ues. They are familiar wit f plants to their habitats, tions with other organisr	ental principles of res nfluence the distribut derstand the scientifi h the fundamental pr the development of ns.	earch in the field of tion and frequency o c relevance ecology inciples of plant eco plant societies, the r	ecology and with the most im- of occurrence of organisms in has to the assessment of envi- ophysiology and, in particular, the role of plants in ecosystems as
Courses	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)
V + Ü (n	io infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
<b>Method</b> ster, inf	<b>l of ass</b> formati	e <b>ssment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	examir	nation (60 minutes)			
Allocati	ion of p	olaces			
Additio	nal info	ormation			
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)	

Module title			Abbreviation		
Ecology of animals for minor field of study					07-3A3OET-NF-082-m01
Module	e coord	inator		Module offered by	
holder	of the (	Chair of Zoology III		Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)	
3	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
enviror the stru concep knowle	nments ucture a ots of eo edge ne	. The module will focus o and dynamics of populati cology, will become famil cessary to develop an un	n the functional adap ons and ecosystems iar with examples of derstanding of curre	otation to environme . Students will be int research findings an nt ecological probler	ntal conditions as well as on croduced to fundamental model id will acquire the fundamental ns.
Intende	ed lear	ning outcomes			
Studen portant their er ronmer adapta well as	its are f t abiotion nvironm ntal isso tions o interac	amiliar with the fundame c and biotic factors that in nent. In addition, they un ues. They are familiar wit f plants to their habitats, ctions with other organisr	ental principles of res nfluence the distribu derstand the scientif h the fundamental pr the development of ns.	earch in the field of tion and frequency o ic relevance ecology rinciples of plant eco plant societies, the r	ecology and with the most im- of occurrence of organisms in has to the assessment of envi- ophysiology and, in particular, the role of plants in ecosystems as
Course	<b>s</b> (type	, number of weekly conta	ct hours, language –	- if other than Germa	n)
V + Ü (r	no infoi	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)
Metho ster, in	<b>d of ass</b> formati	<b>sessment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-
written	exami	nation (45 minutes)			
Allocat	ion of p	olaces			
Additio	onal inf	ormation			
Referre	ed to in	LPOI (examination regu	lations for teaching-	degree programmes)	
				_ , _ ,	
L					

Modul	e title				Abbreviation
Ecolog	y and D	evelopmental Biology of	f marine organisms		07-4S1MZ3-092-m01
Modulo coordinator					
hood	f the D	inator	racconu	Faculty of Piology	
FCTS	Meth	od of grading		raculty of Biology	
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites		
1 seme	ster	undergraduate	By way of exception,	, additional prerequi	isites are listed in the section on
			assessments.		
Conter	Its				
A com	oinatior	n of lab work and field tri	ps, this module will p	rovide students with	n an insight both into the organis-
mal div	ersity (	of a marine ecosystem ar	nd into the biocenosis	of the littoral of the	e island of Helgoland in the North
Sea.					
Intend	ed lear	ning outcomes			
Studer marine	its are f ecosys	amiliar with the morphol stem.	ogy, developmental b	oiology, physiology a	and ecology of organisms in a
Course	<b>s</b> (type	, number of weekly conta	act hours, language —	if other than Germa	an)
This m	odule c	omprises 2 module com	ponents. Information	on courses will be li	sted separately for each module
compo	nent.	17- 110 Ü ( info	mation on CMC (mail		
	)7-451N )7-451N	123-1110-092: U (no info 173-2MO-092: S (no info	mation on SWS (week rmation on SWS (week	kly contact hours) ar kly contact hours) ai	nd course language available)
Metho	d of ass	sessment (type, scope, la	anguage — if other tha	an German, examina	ation offered — if not every seme-
ster, in	formati	ion on whether module c	an be chosen to earn	a bonus)	
Assess low. Ur	ment in nless st	n this module comprises ated otherwise, successi	the assessments in the ful completion of the read	ne individual modul module will require s	e components as specified be- successful completion of all indi-
vidual	assess	ments.			
Assess	ment i	n module component 07-	4 <b>S1MZ3-1MO-092:</b> Ed	cology and Developr	nental Biology of Marine Orga-
nisms					
	ECTS,	Method of grading: num	erical grade		
• 4	lssessr	nent offered: once a vear	. summer semester		
• (	Other p	rerequisites: Admission	prerequisite to asses	sment: regular atte	endance of exercises and suc-
0	essful	completion of the respec	tive exercises as spec	cified at the beginning	ng of the course.
Assess	FCTS	n module component 07- Method of grading: (not)	451MZ3-2MU-092: 5	eminar on Marine Bi ed	lology
• p	present	ation (approx. 20 to 30 m	ninutes)	cu	
• /	Assessr	nent offered: once a year	, summer semester		
Allocat	ion of <sub>l</sub>	olaces			
Inform	ation o	n the allocation of places	will be listed separat	tely for each module	e component.
• (	07-4S1N	NZ3-1MO-092: Number o	f places: 18. Should t	he number of appli	cations exceed the number of
t d	he Bac	helor's degree subject B	iologie (Biology) with	180 FCTS credits. S	Should the module be used in
	other su	ibjects, there will be two	quotas: 95% of plac	es will be allocated	to students of the Bachelor's
0	legree	subject Biologie (Biology	) with 180 ECTS credit	s and 5% of places	(a minimum of one participant
	n total) rodite i	will be allocated to students of the Br	dents of the Bachelor	's degree subject Bi	Iologie (Biology) with 60 ECIS
	Mather	natics), each with 180 E	CTS credits, as part of	f the application-ori	ented subject Biology (as well
a	is pote	ntially to students of oth	er 'importing' subject	ts). Should the num	ber of places available in one
c	uota e	xceed the number of app	lications, the remain	ing places will be al	located to applicants from the
0	other qu	iota. Should there be, wit	inin one module comp	oonent, several cours	ses with a restricted number of

minor in a Bachelor's degree programme Biology	JMU Würzburg • generated 23-Aug-2021 • exam.	page 25 / 35
(2008)	reg. data record Bachelor (60 ECTS) Biologie - 2008	



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.

• 07-4S1MZ3-2MO-092: --

#### Additional information

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

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Module	Module title Abbreviation					
Basic P	Basic Physiology of Plants for minor field of study   07-2A2PPF-NF-082-m01					
Module	e coord	inator		Module offered by		
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	pl. of module(s)		
3	nume	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate	Admission prerequi	site to assessment:	regular attendance of exercises	
			and successful com beginning of the cou	nd successful completion of the respective exercises as specified at the eginning of the course.		
Conten	ts					
vide the module	em with e will di	n an opportunity to devel scuss the physiological p	op the fundamental s orocesses that regula	skills for working in a te the internal enviro	a physiological laboratory. The onment of plants.	
Studen ve acqu	ts have uired fu	e developed an understa Indamental knowledge o	nding of the physiolo n planning, setup, int	gical functions and r erpretation and pres	regulation of organisms. They ha- sentation of scientific results.	
Course	<b>s</b> (type	, number of weekly conta	ict hours, language –	· if other than Germa	ın)	
V + Ü (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
Method ster, in	<b>l of ass</b> formati	<b>essment</b> (type, scope, la on on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written	exami	nation (approx. 45 minute	es)			
Allocat	ion of <b>p</b>	olaces				
Additional information						
Referre	d to in	LPOI (examination regu	lations for teaching-o	legree programmes)		
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Module title					Abbreviation	
Pharma	aceutica	al Drugs			07-4S1PS3-092-m01	
Module	Module coordinator			Module offered by		
holder	of the C	Chair of Pharmaceutical B	iology	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
5	numei	rical grade				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
This mo cals as the req	odule w well as uireme	ill introduce students to to their application in pl nts and analytical metho	the major active agen narmacy. Microscopio ds of the pharmacop	nt groups in medicin c and phytochemical oeia will be explaine	al plants and phytopharmaceuti- analyses will be performed and ed.	
Intende	ed learr	ning outcomes				
Studen cals as	ts have well as	acquired a specialist kn on the requirements and	owledge on active ag d analytical methods	ents from medicinal of the pharmacopoe	plants and phytopharmaceuti- sia.	
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language —	· if other than Germa	n)	
compoi	nent. 7-4S1P <u>7-4S1P</u> 1 of ass	S3-1PD-092: Ü (no inform S3-2PD-092: S (no inform essment (type, scope, la	nation on SWS (week nation on SWS (week nguage — if other tha	ly contact hours) and ly contact hours) and an German, examina	d course language available) d course language available) tion offered — if not every seme-	
ster, in	formati	on on whether module ca	an be chosen to earn	a bonus)	,	
Assess low. Un vidual a	ment ir Iless sta assessr	this module comprises ated otherwise, successf nents.	the assessments in t ul completion of the	he individual module module will require s	e components as specified be- successful completion of all indi-	
<ul> <li>Assessment in module component o7-4S1PS3-1PD-092: Pharmaceutical Drugs (Laboratory Course)</li> <li>3 ECTS, Method of grading: numerical grade</li> <li>written examination (45 minutes)</li> </ul>						
• 2 • p	<ul> <li>2 ECTS, Method of grading: (not) successfully completed</li> <li>presentation (approx. 20 to 30 minutes)</li> </ul>					
Allocation of places						
Additio	nal info	ormation				
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
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L						

Module	e title			Abbreviation			
Pharma	aceutic	al Biology			07-3A3PB-072-m01		
Module	e coord	inator		Module offered by			
holder	of the (	Chair of Pharmaceutical E	Biology	Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
2	nume	rical grade					
Duratio	n	Module level	Other prerequisites				
1 seme	ster	undergraduate					
Conten	ts						
In this troduct organis	module ion to o sm.	e, students will acquire an one branch: pharmacokir	n overview of the stud netics, the discipline	dy of biogenic drugs. that describes the fa	The module will include an in- te of a drug or xenobiotic in an		
Intende	ed leari	ning outcomes					
Studen	ts have	e become familiar with th	e fundamental princi	ples of pharmacokin	etics.		
Course	<b>s</b> (type	, number of weekly conta	ct hours, language —	if other than Germa	n)		
V + S (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language availa	able)		
Metho ster, in	<b>l of ass</b> formati	s <b>essment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
written	exami	nation (30 minutes)					
Allocat	ion of p	olaces					
Additional information							
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)						
ster, in written Allocat  Additio  Referre 	formati examin ion of p nal info	on on whether module canation (30 minutes) olaces prmation LPO I (examination regu	lations for teaching-o	a bonus) degree programmes)			

Module title					Abbreviation	
Basic Physiology of Prokaryotes for minor field of study					07-2A2PPR-NF-082-m01	
Module	e coord	inator		Module offered by	· · · · · · · · · · · · · · · · · · ·	
Dean o	f Studi	es Biologie (Biology)		Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. con	ipl. of module(s)		
3	nume	rical grade				
Duratio	on	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	Its					
This m bolic d	odule w iversity	vill acquaint students wit	h the principles of pr	okaryotic physiology	. It will discuss prokaryotic meta-	
Intend	ed lear	ning outcomes				
Studer ve acq	nts have uired fu	e developed an understa Indamental knowledge o	nding of the physiolo n planning, setup, int	gical functions and r erpretation and pres	egulation of organisms. They ha- sentation of scientific results.	
Course	<b>s</b> (type	, number of weekly conta	ict hours, language –	- if other than Germa	n)	
V + Ü (I	no infoi	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
Metho ster, in	<b>d of ass</b> formati	sessment (type, scope, la on on whether module ca	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written	exami	nation (approx. 60 minut	es) including multiple	e choice questions		
Allocat	tion of p	olaces				
Additional information						
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					

Module title					Abbreviation		
Ecology	y of poj	pulations		07-4S1NVO5-092-m01			
Module	e coord	inator		Module offered by			
holder	of the (	Chair of Zoology III		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						
More in tion de	n-depth nsity; n	discussion of the structuna agement.	ure and dynamics of h	numan and animal p	opulations; regulation of popula-		
Intende	ed leari	ning outcomes					
Studen model	ts are a concep	able to interpret the struc ts in population ecology	ture and dynamics of and to apply more ac	populations and me lvanced methods of	etapopulations on the basis of quantitative analysis to these.		
Course	s (type	, number of weekly conta	ct hours, language —	if other than Germa	n)		
This model           comport           •           0           •           •           •           •	<ul> <li>This module comprises 2 module components. Information on courses will be listed separately for each module component.</li> <li>o7-4S1NV05-1PO-092: V + Ü (no information on SWS (weekly contact hours) and course language available)</li> <li>o7-4S1NV05-2PO-092: S (no information on SWS (weekly contact hours) and course language available)</li> </ul>						
Method ster, in	<b>l of ass</b> formati	<b>sessment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
Assess low. Un vidual a	ment ir Iless st assessi	n this module comprises ated otherwise, successf ments.	the assessments in t al completion of the	he individual module module will require s	e components as specified be- successful completion of all indi-		
<ul> <li>Assessment in module component o7-4S1NV05-1PO-092: Basic Ecology of Populations (Lecture, Practice) Basic Ecology of Populations (Lecture, Practice)</li> <li>4 ECTS, Method of grading: numerical grade</li> <li>written examination (45 minutes)</li> <li>Assessment in module component o7-4S1NV05-2PO-092: Ecology of Populations (Seminar)</li> <li>1 ECTS, Method of grading: (not) successfully completed</li> <li>presentation (approx. 20 to 30 minutes)</li> </ul>							
Allocation of places							
Additio	Additional information						
Referre	d to in	LPOI (examination regu	lations for teaching-c	legree programmes)			
		、 ·					
L							

Module title					Abbreviation		
Special	l Bioinf	ormatics I			07-4S1MZ6-092-m01		
Module	e coord	inator		Module offered by			
holder	of the C	Chair of Bioinformatics		Faculty of Biology			
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)			
5	nume	rical grade					
Duratio	n	Module level	Other prerequisites	Other prerequisites			
1 seme	ster	undergraduate					
Conten	ts						
Fundan damen tic reco	nental   tal prin nstruct	principles of the tree of li ciples of evolutionary bic ion.	fe, fundamental princ llogy (concepts), seq	ciples of phylogeneti uence analysis, RNA	ics (methods and markers), fun- structure prediction, phylogene-		
Intende	ed learr	ning outcomes					
Studen netic re	ts are a constru	able to use software and a	databases for sequer	nce analysis, RNA str	ructure prediction and phyloge-		
Course	<b>s</b> (type,	, number of weekly conta	ct hours, language —	· if other than Germa	n)		
V + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)		
Methoo ster, in	<b>l of ass</b> formati	s <b>essment</b> (type, scope, la on on whether module ca	nguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-		
log (ap	prox. 10	o to 20 pages)					
Allocat	ion of p	olaces					
Additional information							
Referre	Referred to in LPO I (examination regulations for teaching-degree programmes)						

Module title Abbreviation						
Basic P	Basic Physiology of Animals for minor field of study   07-2A2TP-NF-082-m01					
Module	coord	inator		Module offered by		
Dean of	fStudi	es Biologie (Biology)	,	Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
3	nume	rical grade				
Duratio	n	Module level	Other prerequisites	ites		
1 seme	ster	undergraduate	Admission prerequi	site to assessment:	regular attendance of exercises	
			and successful com	pletion of the respec	ctive exercises as specified at the	
			beginning of the cou	ırse.		
Conten	ts					
This mo vide the module	odule w em witl e will di	vill acquaint students wit n an opportunity to devel scuss the physiological p	h the principles of ge op the fundamental s processes that regula	neral and comparati skills for working in a te the internal envir	ive plant physiology and will pro- a physiological laboratory. The onment of animals.	
Intende	ed lear	ning outcomes				
Studen ve acqu	ts have iired fu	e developed an understa Indamental knowledge o	nding of the physiolo n planning, setup, int	gical functions and r erpretation and pres	egulation of organisms. They ha- sentation of scientific results.	
Courses	<b>s</b> (type	, number of weekly conta	ict hours, language –	· if other than Germa	in)	
V + Ü (r	no infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)	
Methoo ster, inf	<b>l of ass</b> formati	<b>essment</b> (type, scope, la on on whether module c	inguage — if other tha an be chosen to earn	an German, examina a bonus)	tion offered — if not every seme-	
written	exami	nation (approx. 60 minut	es, word problems ar	nd/or multiple choic	e questions)	
Allocat	ion of p	olaces				
Additional information						
Referre	<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)					
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Module title Abbreviation						
From Cells to Organisms for minor field of study 07-1A1ZO-NF-082-m01						
Module coordinator Module offered by						
Dean of Studi	es Biologie (Biology)		Faculty of Biology			
ECTS Meth	od of grading	Only after succ. compl. of module(s)				
10 nume	rical grade		•			
Duration	Module level	Other prerequisites				
1 semester	undergraduate	By way of exception	, additional prerequi	isites are listed in th	e section on	
		assessments.				
Contents						
The first part of cal categories ting with its m ferences and plants). The s and hypothes thods. Using to to the phyloge will acquire th organisms, wit tents of the m <b>Intended lear</b> - Knowledge of ledge of the s mal and plant liarity with the hing characte se plant and a nents and fun	of the course will acqua be by the course will acqua be acroscopic structure by similarities between pre- econd part will address es will be discussed and the examples of plants enetic diversity of euka the fundamental knowle of the structures of pro- pecific characteristics concepts of phylogen ristics and major repre- animal organisms that actioning of microscope	aint students with the e vledge, the course will t refore moving on to its r rokaryotic cells (bacteria s one of the central issund and animals, the subse ryotes. At the level of g edge necessary to under biological disciplines at caryotic and eukaryotic of the intracellular and mise evolution as the d etic relationships betw sentatives of groups in are most suitable for pa	lementary building b hen discuss the cell, nicroscopic structure a, archaebacteria) ar ues of biology: evolut oduced to major phyl equent module comp roups in the plant an rstand the forms and in an evolutionary ar t all levels of biologic cells and their (biolo extracellular structur riving force behind th een plants/animals. the plant and anima articular scientific iss	blocks of life as well the smallest unit of the smallest unit of the course will point and eukaryotic cells (a tion. Fundamental m logenetic reconstruct bonents will introduct the animal kingdoms, if functions of animal and ecological contex cal organisation. bgical) macromolecut res of prokaryotes as the phylogeny of spec- - Familiarity with the l kingdoms Ability sues Familiarity with	as biologi- int out dif- animals, echanisms tion me- ce students students and plant t. The con- les Know- s well as ani- cies Fami- e distinguis- to select tho- h the compo-	
Courses (type	number of weekly cor	ntact hours Janguage –	- if other than Germa	n)		
This module h • 07-1A1Z • 07-1A1Z hours a • 07-1A1Z Method of ass	nas 4 components; info O-2E-072: Ü (no inform O-3P-072, and 07-1A1Z vailable) O-NF-1Z-082: V (no info sessment (type, scope,	ormation on courses list nation on language and O-4T-072: V + Ü (no info ormation on language a , language — if other the	ed separately for eac number of weekly co rmation on language nd number of weekly an German, examina	ch component. ontact hours availab and number of weel y contact hours avai tion offered — if not	le) kly contact lable) every seme-	
ster, informat	ion on whether module	e can be chosen to earn	a bonus)			
This module h these assessr	nas the following 4 assument components to pa	essment components. l ass the module as a wh	Jnless stated otherw ole.	ise, students must p	bass all of	
Assessment i 1 ECTS of written Assessment i component of 4 ECTS of written Addition in exerce of the co Assessment i	n module component of credit, numerical gradin examination (30 minut n module component of 7-1A1ZO-4T-072: Das Ti credits, numerical grad examination (approx. 6 nal prerequisites: admi ises as well as succes ourse. n module component of	97-1A1ZO-2E-072: Evolu ng es) 97-1A1ZO-3P-072: Das P ferreich (The Animal Kin ling 50 minutes) ission prerequisite to as sful completion of the 97-1A1ZO-NF-1Z-082: Di	tion flanzenreich (The Pla gdom) <b>:</b> ssessment: regular a respective exercises e Zelle für das Neber	ant Kingdom), and <b>ir</b> ttendance of and pa as specified at the nfach Biologie (The C	<b>n module</b> rticipation beginning Cell for Biolo-	
gy Williofs)		18411 VA/25	ing a generated as Aug as a	0.Y2m		
(2008) (2008)	s degree programme Biology	JMU Wurzbu reg. data reco	ord Bachelor (60 ECTS) Biolog	exam. ie - 2008	page 34 / 35	

• 1 ECTS credit, numerical grading

• written examination (approx. 60 minutes) including multiple choice questions

#### Allocation of places

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#### Additional information

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