

Module Catalogue for the Subject

Didactics in Biology (Secondary School)

as Didaktikfach with the degree "Erste Staatsprüfung für das Lehramt für Sonderpädagogik"

> Examination regulations version: 2009 Responsible: Faculty of Biology

JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record L6|832|-|-|H|2009



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The subject is divided into

section / sub-section	ECTS credits	starting page
Compulsory Courses	20	5
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Abbreviations used

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

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

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

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

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

Conventions

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

Notes

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

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

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

In accordance with

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

LASPO2009

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

07-Aug-2012 (2012-87)

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

(20 ECTS credits)

Successful completion of modules worth 20 ECTS credits in each subject selected as Didaktikfach (subject studied with a focus on teaching methodology) is a prerequisite for admission to the Erste Staatsprüfung (First State Examination) in the subject Didaktiken einer Fächergruppe der Hauptschule (Didactics of a Group of Subjects of Hauptschule).

Module	title				Abbreviation
Basics	of Biol	ogy I - Cytology and Anat	omy		07-DH-FWBIO1-092-m01
Module	e coord	inator		Module offered by	
head of	fgroup	Didactics of 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	By way of exception assessments.	, additional prerequi	isites are listed in the section on
Conten	ts				
ledge in gical m specific mance, cation, logy (fo cellular nal ana section	n the ar acromo functi nervor substa cus: pl structi tomy o s. They	reas of cytology, histolog olecules, plant and anima ons, fundamental princip us systems, human senso ince abuse prevention, vi notosynthesis), organs of ures. The exercises on cy if selected animals and p will work with microscop	y, anatomy and physical cells, distinctive fea oles of genetics, orgatory organs and how to ruses and bacteria as vascular plants and tology and anatomy v lants. Students will epose and binoculars ar	iology. The following atures of plant cells, ns of the human boc b keep them healthy s pathogens, fundan their variations, tiss vill provide students xamine plant organs ad will develop expe	topics will be discussed: biolo- organelles of the cell and their dy and their functions and perfor- t, human ontogeny, health edu- nental principles of plant physio- ues of vascular plants and their with an insight into the inter- s, cutting cross and longitudinal rience with typical techniques in s of the preparations
Intende					
The cel control ship be selecte croscop to make	l: the s and re tween d anim bes/bir e scien	mallest building block of gulation. Recognising the the structure and the fun als. Ability to mount orga noculars, the most import tific drawings.	living organisms. Known DNA as the carrier o ction of organs. Abili misms and prepare n cant tools for the inve	owledge of organism f genetic information ty to name the most nicroscopic preparat stigation of fundame	ns as living systems that need n. Familiarity with the relation- important internal anatomy of ions. Practical skills using mi- ental problems in biology. Ability
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
This mo compor o o	odule c nent. 7-DH-F 7-DH-F	omprises 2 module comp WBIO1-1-092: V (no infor WBIO1-2-092: Ü (no infor	oonents. Information mation on SWS (weel mation on SWS (wee	on courses will be li kly contact hours) an kly contact hours) ar	sted separately for each module nd course language available) nd course language available)
Methoo module is	d of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
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.					
 Assessment in module component o7-DH-FWBIO1-1-092: Introduction to Biology I (Lecture) 3 ECTS, Method of grading: numerical grade written examination (60 to 90 minutes) Assessment in module component o7-DH-FWBIO1-2-092: Cytology and Anatomy of Animals and Plants (Practice) 2 ECTS, Method of grading: (not) successfully completed 10 to 15 drawings Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course). 					

Allocation of places

Additional information

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Workload

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Teaching cycle

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

§ 38 (1) 1. Didaktik der Hauptschule Biologie

§ 38 (1) 1. Didaktik der Mittelschule Biologie

Module appears in

Module	e title				Abbreviation	
Didactics in Biology I			07-DH-FDBIO1-092-m01			
Module	Module coordinator Module offered by			Module offered by		
head o	head of group Didactics of Biology Faculty of Biology			Faculty of Biology		
ECTS	Methe	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 prerequisites are listed in the section on assessments.			

Contents

In this module, students will acquire fundamental knowledge and skills in the area of biology didactics. The lecture will first discuss general theories in the area of didactics as well as the nature of scientific research. It will then explore central concepts and principles of biology lessons as well as methods in biology and teaching aids. Building on this knowledge, students will learn how to outline problem-based biology lessons. The lecture will also discuss, in the context of a didactic analysis, topics such as modes of interaction in the classroom, teaching methods and approaches or the definition of learning outcomes. Out-of-classroom learning environments as well as topics in biology didactics will also be discussed. The seminar Lehrplan (Curriculum) will equip students with detailed knowledge on how to plan and design classes for *Grundschule*. Students will prepare didactic analyses on topics from the curriculum. They will discuss general aspects of curriculum theory and, working in small teams, will translate the material to be taught, in a didactically reduced manner, into teaching sequences and lessons. At the same time, students will integrate different teaching methods and modes of interaction in the classroom into their lessons, keeping in mind what is and what is not possible in the respective type of school, will deliver their lessons or parts of these to their fellow students and will assess these with regard to didactic aspects. The module will also provide students both with deeper insights into topics that are relevant for the respective type of school and with an outlook on phase II and III of their training. There will be separate seminars for each type of school; please select the seminar for the school type for which you are pursuing a teaching degree (Grundschule).

Intended learning outcomes

Knowledge of the fact that the term "teaching aids in the biology classroom" refers to originals, preparations and media. Familiarity with a biology-specific, didactic definition of the term "media". Overview of different aspects of biology-specific media (encoding, hardware, software, message, sensory modalities). Overview of classifications of media, factors that influence the choice of media as well as the function of media. Familiarity with the limitations and problems associated with the use of media in the classroom. Practical skills using media of all kinds (hardware side). Ability to independently prepare media or preparations. Ability to use teaching aids in classroom situations in a way that is appropriate for pupils and the material taught. Advantages and disadvantages of specific teaching aids; limitations associated with the use of media in the classroom.

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

This module comprises 2 module components. Information on courses will be listed separately for each module component.

• 07-LA-FDGRU-2-092: S (no information on SWS (weekly contact hours) and course language available)

• 07-GH-FDBIO1-1-092: 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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component o7-LA-FDGRU-2-092: School-Type-Specific Didactics in Biology (Seminar)

- 2 ECTS, Method of grading: numerical grade
- written examination (30 to 45 minutes) or term paper (10 to 15 pages)

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 Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course). The preparation of logs (10 to 15 pages) is an admission prerequisite to assessment.

Assessment in module component o7-GH-FDBIO1-1-092: Introduction to Didactics in Biology (Lecture)

- 3 ECTS, Method of grading: numerical grade
- written examination (60 to 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)

- § 36 (1) 7. Didaktik der Grundschule Biologie
 § 38 (1) 1. Didaktik der Hauptschule Biologie
 § 38 (1) 1. Didaktik der Mittelschule Biologie
 § 41 (1) 6. Biologie Fachdidaktik
- § 61 (1) 8. Biologie Didaktik

Module appears in

Module title				Abbreviation	
Basics	Basics of Biology II - Systematics and Ecology				07-DH-FWBIO2-092-m01
Module	e coord	inator		Module offered by	
head o	f group	Didactics of Biology		Faculty of Biology	
ECTS	Meth	od of grading	Only after succ. compl. of module(s)		
5	nume	rical grade			
Duratio	on	Module level	Other prerequisites	i	
1 seme	ster	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.		
Conten	ts				

The lecture on the biology-specific contents of the curriculum for *Hauptschule* will equip students with advanced knowledge in the areas of ecology, systematics and evolutionary theory. The following topics will be discussed: human phylogeny, evolutionary factors, speciation, origins of life, fundamental principles of animal and plant ecology, interactions between organisms, ecosystems and their nutrient cycles, systematics of selected classes of vertebrates (birds, mammals) and plant families, pollination and distribution of plants. With the help of selected examples of species, the exercise will provide students with an insight into the diversity of the indigenous flora and fauna. The course will discuss major families of flowering plants, their characteristics (floral formula, phyllotaxis, leaf shape) as well as criteria for their identification. The section on animal identification will focus on indigenous vertebrates but will also include the identification of several invertebrates. The module will also include field trips to biotopes, zoos/wildlife parks and ecosystems in the vicinity of Würzburg. On these field trips, students will identify animals and plants encountered in the field that are typical for the respective habitats. In addition, they will investigate important aspects on ecosystems as well as the cohabitation of organisms.

Intended learning outcomes

Familiarity with criteria for the identification and classification of animals and plants. Identification of important representatives of the indigenous flora and fauna. Familiarity with the nomenclature and systematics of animals and plants as well as with criteria for classification in the diversity of the flora and fauna. Awareness of the fact that biotopes are elements of the landscape that should be conserved. Ability to classify animals and plants unknown to students in the nested system of animals and plants. Familiarity with ecosystems as places of cohabitation of different organisms. Ability to understand the fact that evolution is a key tool for the creation of biological diversity. Ability to use dichotomous keys and computer-based identification aids.

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

This module comprises 2 module components. Information on courses will be listed separately for each module component.

- 07-DH-FWBIO2-2-121: Ü (no information on SWS (weekly contact hours) and course language available)
- 07-DH-FWBIO2-1-092: 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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component o7-DH-FWBIO2-2-121: Introduction into Local Flora and Fauna

- 2 ECTS, Method of grading: (not) successfully completed
- oral examination in groups (groups of 3 to 5 candidates, 5 to 10 minutes per candidate)
- Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).

Assessment in module component o7-DH-FWBIO2-1-092: Introduction to Biology II (Lecture)

- 3 ECTS, Method of grading: numerical grade
- written examination (60 to 90 minutes)

LA Sonderpädagogik Didactics in Biology (Seconda-	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Lehr-	page 10 / 28
ry School) (2009)	amt Sonderpädagogik (Hauptschule-Didaktikfach) Biologie - 2009	

• Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).

Allocation of places

Additional information

Workload

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Teaching cycle

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

§ 38 (1) 1. Didaktik der Hauptschule Biologie

§ 38 (1) 1. Didaktik der Mittelschule Biologie

Module appears in

First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2013) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)

Module	e title				Abbreviation
Didactics in Biology II			07-DH-FDBIO2-092-m01		
Module	e coord	inator		Module offered by	
head of group Didactics of Biology Faculty of Biolog			Faculty of Biology	ulty 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 prerequisites are listed in the section on assessments.		

Contents

[Version 1: A lecture on the biology-specific contents of the curriculum for Hauptschule will equip students with basic knowledge in the areas of cytology, histology, anatomy and physiology. The following topics will be discussed: biological macromolecules, plant and animal cells, distinctive features of plant cells, organelles of the cell and their specific functions, fundamental principles of genetics, organs of the human body and their functions and performance, nervous systems, human sensory organs and how to keep them healthy, human ontogeny, health education, substance abuse prevention, viruses and bacteria as pathogens, fundamental principles of plant physiology (focus: photosynthesis), organs of vascular plants and their variations, tissues of vascular plants and their cellular structures. The exercises on cytology and anatomy will provide students with an insight into the internal anatomy of selected animals and plants. Students will examine plant organs, cutting cross and longitudinal sections. They will work with microscopes and binoculars and will develop experience with typical techniques in biology such as observation and examination. Students will also make drawings of the preparations.] [Version 2: The lecture on the biology-specific contents of the curriculum for Hauptschule will equip students with advanced knowledge in the areas of ecology, systematics and evolutionary theory. The following topics will be discussed: human phylogeny, evolutionary factors, speciation, origins of life, fundamental principles of animal and plant ecology, interactions between organisms, ecosystems and their nutrient cycles, systematics of selected classes of vertebrates (birds, mammals) and plant families, pollination and distribution of plants. With the help of selected examples of species, the exercise will provide students with an insight into the diversity of the indigenous flora and fauna. The course will discuss major families of flowering plants, their characteristics (floral formula, phyllotaxis, leaf shape) as well as criteria for their identification. The section on animal identification will focus on indigenous vertebrates but will also include the identification of several invertebrates. The module will also include field trips to biotopes, zoos/wildlife parks and ecosystems in the vicinity of Würzburg. On these field trips, students will identify animals and plants encountered in the field that are typical for the respective habitats. In addition, they will investigate important aspects on ecosystems as well as the cohabitation of organisms.]

Intended learning outcomes

[Version 1: - The cell: the smallest building block of living organisms. - Knowledge of organisms as living systems that need control and regulation. - Recognising the DNA as the carrier of genetic information. - Familiarity with the relationship between the structure and the function of organs. - The most important parts of plants and their functions: terminology. - Knowledge of the internal anatomy of selected animals. - Ability to mount organisms and prepare microscopic preparations. - Practical skills using microscopes/binoculars, the most important tools for the investigation of fundamental problems in biology. - Ability to make scientific drawings.] [Version 2: - Familiarity with criteria for the identification and classification of animals and plants. - Identification of important representatives of the indigenous flora and fauna. - Familiarity with the nomenclature and systematics of animals and plants as well as with criteria for classification in the diversity of the flora and fauna. - Awareness of the fact that biotopes are elements of the landscape that should be conserved. - Ability to classify animals and plants unknown to students in the nested system of animals and plants. - Familiarity with ecosystems as places of co-habitation of different organisms. - Ability to understand the fact that evolution is a key tool for the creation of biological diversity. - Ability to use dichotomous keys and computer-based identification aids.]

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

This module comprises 3 module components. Information on courses will be listed separately for each module component.

• 07-DH-FDUM-1-121: S (no information on SWS (weekly contact hours) and course language available)

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ry School) (2009)	amt Sonderpädagogik (Hauptschule-Didaktikfach) Biologie - 2009	

o7-DH-FDBIO2-2-092: S (no information on SWS (weekly contact hours) and course language available)
o7-DH-FWBIO2-3-092: 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)

Assessment in this module comprises the assessments in the individual module components as specified below. Unless stated otherwise, successful completion of the module will require successful completion of all individual assessments.

Assessment in module component o7-DH-FDUM-1-121: Special Didactics in Biology: Teaching aids (Seminar)

- 1 ECTS, Method of grading: (not) successfully completed
- seminar paper (10 to 15 pages)

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• Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).

Assessment in module component o7-DH-FDBIO2-2-092: Teaching Techniques and Experiments in Biology (Seminar)

- 2 ECTS, Method of grading: numerical grade
- written examination (30 to 60 minutes) or colloquium (10 to 30 minutes)
- Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars
 and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused
 absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful
 completion of the respective exercises (required percentage as specified at the beginning of the course).

Assessment in module component o7-DH-FWBIO2-3-092: Learning Places Outside the Classroom (Seminar)

- 2 ECTS, Method of grading: (not) successfully completed
 - seminar paper (10 to 15 pages)
- Other prerequisites: Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).

Allocation of places

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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)

§ 36 (1) 7. Didaktik der Grundschule Biologie

§ 38 (1) 1. Didaktik der Hauptschule Biologie § 38 (1) 1. Didaktik der Mittelschule Biologie

Module appears in



Freier Bereich (general as well as subject-specific electives)

(ECTS credits)

Teaching degree students must take modules worth a total of 15 ECTS credits in the area Freier Bereich (general as well as subject-specific electives) (Section 9 LASPO (general academic and examination regulations for teaching-degree programmes)). To achieve the required number of ECTS credits, students may take any modules from the areas below.

Freier Bereich -- interdisciplinary: The interdisciplinary additional offer for a teaching degree can be found in the respective Annex "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt".

Module title			Abbreviation		
Additional Qualification MINT 2			07-LA-ZQN2-092-m01		
Module coordinator				Module offered by	
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Courses lated to Credit t	s in the their o ransfer	natural sciences that eq discipline. These courses subject to approval.	uip students with ad may be offered by th	vanced knowledge i e University of Würz	n the natural sciences that is re- burg or by external institutions.
Intende	ed leari	ning outcomes			
Studen help th	ts have em spe	e acquired advanced know ecialise in a sub-disciplin	wledge as well as ado e of biology.	ditional specialist sk	ills in STEM subjects that will
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + S +	Ü (no i	nformation on SWS (weel	kly contact hours) an	d course language a	vailable)
Methoo module is	of ass creditab	s essment (type, scope, langua ₎ le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) writte each (2 tes) or f	en exar o to 6c f) portfe	nination (30 to 120 minu minutes) or d) oral exan olio (30 to 120 hours)	tes) or b) log (10 to 30 nination in groups of	o pages) or c) oral ex up to 3 candidates o	xamination of one candidate or e) presentation (20 to 45 minu-
Allocat	ion of p	olaces			
Additio	nal inf	ormation			
Worklo	ad				
Teachir	ng cycl	e			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	ars in			
First sta	ate exa	mination for the teaching	g degree Grundschule	Biology (2009)	
First sta	ate exa	mination for the teaching	g degree Grundschule	Didactics in Biology	r (Primary School) (2009)
First Sta	ate exa	mination for the teaching	, uegree Hauptschule r degree Hauptschule	Didactics in Riology	(Secondary School) (2000)
First sta	ate exa	mination for the teaching	degree Realschule B	Biology (2009)	
First sta	ate exa	mination for the teaching	degree Gymnasium	Biology (2009)	
First sta	ate exa	mination for the teaching	degree Sonderpäda	gogik Didactics in Bi	ology (Secondary School) (2009)
First sta	ate exa	mination for the teaching	g degree Sonderpädag	gogik Didactics in Bi	ology (Middle School) (2013)
First sta	ate exa	mination for the teaching	degree Mittelschule	Didactics in Riology	(Middle School) (2013)
			active millesenuic	Diauctics in Diotogy	

Module title			Abbreviation		
Additional Qualification MINT 3			07-LA-ZQN3-092-m01		
Module coordinator		Module offered by			
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
3	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Courses lated to Credit t	s in the their c ransfer	natural sciences that eq liscipline. These courses subject to approval.	uip students with ad may be offered by th	vanced knowledge i e University of Würz	n the natural sciences that is re- burg or by external institutions.
Intende	ed learn	ning outcomes			
Studen help the	ts have em spe	acquired advanced know cialise in a sub-disciplin	wledge as well as add e of biology.	ditional specialist sk	ills in STEM subjects that will
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
Ü + S +	V (no i	nformation on SWS (wee	kly contact hours) an	d course language a	vailable)
Methoo module is	l of ass creditab	essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) writte each (2 tes) or f	en exar o to 6c) portfo	nination (30 to 120 minu minutes) or d) oral exan plio (30 to 120 hours)	tes) or b) log (10 to 30 nination in groups of	o pages) or c) oral ex up to 3 candidates o	xamination of one candidate or e) presentation (20 to 45 minu-
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPOI (examination regulations	s for teaching-degree progra	mmes)	
Module	appea	rs in			
First sta	ate exa	mination for the teaching	degree Grundschule	Biology (2009)	
First sta	ate exa	mination for the teaching	g degree Grundschule g degree Hauptschule	Didactics in Biology	/ (Primary School) (2009)
First sta	ate exa	mination for the teaching	, degree Hauptschule	Didactics in Riology	(Secondary School) (2000)
First sta	First state examination for the teaching degree Realschule Biology (2009)				
First sta	First state examination for the teaching degree Gymnasium Biology (2009)				
First sta	ate exa	mination for the teaching	degree Sonderpäda	gogik Didactics in Bi	ology (Secondary School) (2009)
First sta	ate exa	mination for the teaching	g degree Sonderpädag	gogik Didactics in Bi	ology (Middle School) (2013)
First sta	ite exa	mination for the teaching	degree Mittelschule	Didactics in Biology	(Middle School) (2013)

Module title			Abbreviation		
Additional Qualification MINT 4			07-LA-ZQN4-092-m01		
Module coordinator		Module offered by			
degree	progra	mme coordinator Biologi	e (Biology)	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)	
4	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 seme	ster	undergraduate			
Conten	ts				
Courses lated to Credit t	s in the their c ransfer	natural sciences that eq liscipline. These courses subject to approval.	uip students with ad may be offered by th	vanced knowledge in e University of Würz	n the natural sciences that is re- burg or by external institutions.
Intende	ed learr	ning outcomes			
Studen help th	ts have em spe	e acquired advanced know cialise in a sub-disciplin	wledge as well as ado e of biology.	ditional specialist sk	ills in STEM subjects that will
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)	
V + S +	Ü (no i	nformation on SWS (weel	kly contact hours) an	d course language a	vailable)
Methoo module is	l of ass creditab	e essment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, information on whether
a) writte each (2 tes) or f	en exar o to 6c f) portfo	nination (30 to 120 minu 9 minutes) or d) oral exan 9 plio (30 to 120 hours)	tes) or b) log (10 to 30 nination in groups of	o pages) or c) oral ex up to 3 candidates o	xamination of one candidate or e) presentation (20 to 45 minu-
Allocat	ion of p	olaces			
Additio	nal info	ormation			
Worklo	ad				
Teachir	ng cycl	9			
Referre	d to in	LPO I (examination regulations	s for teaching-degree progra	mmes)	
Module	e appea	irs in			
First sta	ate exa	mination for the teaching	degree Grundschule	Biology (2009)	
First sta	ate exa	mination for the teaching	aegree Grundschule degree Hauptschule	Biology (2000)	(Primary School) (2009)
First sta	ate exa	mination for the teaching	degree Hauptschule	Didactics in Biology	(Secondary School) (2000)
First sta	First state examination for the teaching degree Realschule Biology (2009)				
First sta	ate exa	mination for the teaching	degree Gymnasium	Biology (2009)	
First sta	ate exa	mination for the teaching	degree Sonderpäda	gogik Didactics in Bi	ology (Secondary School) (2009)
First sta	ate exa	mination for the teaching	degree Sonderpäda	gogik Didactics in Bi	ology (Middle School) (2013)
First sta	ate exa	mination for the teaching	degree Mittelschule	Didactics in Biology	(Middle School) (2013)
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Module title			Abbreviation		
Environmental Education in the Teach'n' LearnGarden			n' LearnGarden		07-GH-FDUBI1B-121-m01
Module	coord	inator		Module offered by	
head of	group	Didactics of Biology	-	Faculty of Biology	
ECTS	Metho	od of grading	Only after succ. com	npl. of module(s)	
2	(not) s	successfully completed			
Duratio	n	Module level	Other prerequisites		
1 semes	ster	undergraduate	Admission prerequis seminars and lab co of unexcused absen fortnightly courses: completion of the re at the beginning of t	site to assessment: fourses (weekly cours ce and one excused one incident of unex spective exercises (the course).	regular attendance of exercises, es: a maximum of one incident absence for a legitimate reason; ccused absence) and successful required percentage as specified
Conten	ts				
Contents This module has a practical focus and will teach participants how to systematically encourage a sense of nature in children and adolescents and thus make a contribution to environmental education. The course will explore how out-of-classroom activities may enhance the learning experience of pupils and will discuss what methods are appropriate. In the practical phase, participants will deliver teaching units to real groups of pupils. In the Bo- tanical Garden of the University (or, optionally, at a school camp), participants will learn how to impart to pupils, in a didactically reduced manner, a knowledge of species and form in the context of the topics "Forest" or "Wa- ter" and will practise their skills. Large parts of the course will also be devoted to the discussion and application of a variety of (open) teaching methods that are supposed to encourage pupils, in a playful atmosphere, to deve- lop a positive attitude and act responsibly towards nature. In this context, participants will systematically try to engage pupils on the emotional level. In the final phase of the course, participants will implement their projects with groups of pupils that come to the teach'n'learn garden (or school camp). This will encourage participants to plan their teaching in a practice-oriented manner and will provide them with an opportunity to acquire experi-				ally encourage a sense of nature location. The course will explore and will discuss what methods o real groups of pupils. In the Bo- vill learn how to impart to pupils, xt of the topics "Forest" or "Wa- o the discussion and application in a playful atmosphere, to deve- cipants will systematically try to nts will implement their projects nis will encourage participants an opportunity to acquire experi-	
Intende	ed learı	ning outcomes			
Familiarity with the principles of environmental education. Familiarity with different factors that may encoura- ge pupils to act responsibly towards nature. Insight into the fundamental scientific principles behind the re- spective topics. Overview of the individual contents of the teaching units to be designed. Ability to translate to- pics from the curriculum for the respective type of school, in a didactically reduced manner, into teaching se- quences, teaching units and lessons on habitats. Knowledge of how out-of-classroom activities (in particular in a teach'n'learn garden) may enhance the learning experience of pupils. Ability to design experience-based lessons on these topics that are tailored to the age of pupils as well as to the respective type of school and local conditi- ons.					
Courses	5 (type, n	number of weekly contact hours, l	anguage — if other than Ger	man)	
Ü + S (n	io infor	mation on SWS (weekly	contact hours) and co	ourse language avail	able)
Method module is	l of ass creditab	sessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	ot every semester, information on whether
semina	r pape	r (7 to 10 pages)			
Allocation of places					
Additional information					
Worklo	ad				

Teaching cycle

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

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Module appears in

Module title					Abbreviation	
Special Didactics in Biology: Preparation for the Written Exam 07-LA-FDSTX-092-m01					01	
Module coordinator				Module offered by		
head of group Didactics of Biology			Faculty of Biology			
ECTS Method of grading		Only after succ. com	Only after succ. compl. of module(s)			
2	(not) s	successfully completed	1			
Duratio	n	Module level	Other prerequisites			
1 semester undergraduate		Admission prerequis seminars and lab co of unexcused absen fortnightly courses: completion of the re at the beginning of t	Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).			
Conten	ts					
This se topics i The firs topic in final pa	minar v n biolo t block 1 the bi art of th	vill provide students p gy didactics. In small t will discuss an area o ology classroom with r e course, students will	reparing for the written eams, students will pre f the theory of biology d espect to aspects of the solve an exam paper fi	state examination w pare and deliver pre idactics, this will be scientific discipline om a previous year.	ith an opportunity to sentations on three followed by the disc and a didactic analy	revise key key areas. ussion of a ysis. In the
Intende	ed learı	ning outcomes				
 Knowledge of what types of problems are typically asked in the written state examination in biology didactics. Ability to solve an exam paper within the specified time frame. Ability to gauge the appropriate length of answers to questions. 						
Course	S (type, n	umber of weekly contact hour	s, language — if other than Ger	man)		
S (no information on SWS (weekly contact hours) and course language available)						
Methoo module is	d of ass creditab	essment (type, scope, lang le for bonus)	guage — if other than German, e	examination offered — if no	t every semester, informatio	on on whether
semina	r pape	r (7 to 10 pages)				
Allocat	ion of p	olaces				
Additional information						
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
First state examination for the teaching degree Grundschule Biology (2009)						
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2009)						
First state examination for the teaching degree Hauptschule Biology (2009)						
First state examination for the teaching degree Realschule Biology (2000)						
First state examination for the teaching degree Gymnasium Biology (2009)						
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2000)						
First sta	ate exa	mination for the teachi	ng degree Sonderpäda	gogik Didactics in Bi	ology (Middle Schoo	l) (2013)
LA Sonderp	ädagogik	Didactics in Biology (Seconda-	JMU Würzburg • genera	ted 26-Aug-2024 • exam. reg	. data record Lehr-	page 20 / 28
ry School) (2009)		amt Sonderpädagogi	к (Hauptschule-Didaktikfach)	BIOIOGIE - 2009	



First state examination for the teaching degree Mittelschule Biology (2013) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)

Module	title				Abbreviation	
Special Didactics in Biology: Health Education					07-LA-FDGES-092-m01	
Module coordinator				Module offered by		
head of group Didactics of Biology				Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. com	pl. of module(s)		
2	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites	tes		
1 semester		undergraduate	Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).			
Conten	ts					
In this s and add ries. We exercise to deve bits. Th and ong or self-e plemen	In this seminar, we will explore the causes and reasons of a broad range of health issues faced by many children and adolescents in Germany today; we will discuss different types of these health issues as well as related theo- ries. We will discuss the topics drugs and substance abuse, sex education, unhealthy eating habits and lack of exercise and will focus on different contents and skills each semester. Large parts of the course will be devoted to developing teaching units tailored to the respective type of school that encourage pupils to adopt healthy ha- bits. These units will be aimed at changing and preventing unhealthy habits as well as promoting comprehensive and ongoing health education. At the same time, we will explore general measures (e. g. raising the self-esteem or self-efficacy of pupils) as well as measures related to specific topics in both theory and practice. We will im-					
Intende	d lear	ning outcomes		•		
Knowledge on the emergence and types of typical health-impairing conditions. Insight into selected theories that may help explain why children and adolescents adopt typical health-impairing behaviours. Overview of older and current approaches to the prevention of specific behaviours. Subject-specific and didactic knowledge necessary to teach topics in health education. Insight into the scientific principles behind these topics. Ability to translate topics in the area of health education from the curriculum for the respective type of school, in a didactically reduced manner, into teaching sequences, teaching units and lessons. Ability to design an interdisciplinary prevention programme, to be taught over the course of one school year, that is tailored to the type of school and the respective group of pupils. Ability to implement measures to support the personal development of pupils.						
Courses (type, number of weekly contact hours, language — if other than German)						
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)						
seminar paper (7 to 10 pages)						
Allocation of places						
Additional information						
Workload						
Teachir	ig cycl	e				
Referre	d to in	LPU I (examination regulation	s for teaching-degree progra	mmes)		

LA Sonderpädagogik Didactics in Biology (Secondary School) (2009)

Module appears in

First state examination for the teaching degree Grundschule Biology (2009)

First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2009) First state examination for the teaching degree Hauptschule Biology (2009)

First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Realschule Biology (2009)

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2013) First state examination for the teaching degree Mittelschule Biology (2013)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)

Module title					Abbreviation	
Advand	ced Did	actics in Biology			07-GS-FDSOV-092-m	101
Module coordinator				Module offered by	y	
head of group Didactics of Biology				Faculty of Biology		
ECTS	Metho	od of grading	Only after succ. compl. of module(s)			
5	(not) s	successfully completed				
Duratio	on	Module level	Other prerequisites			
1 semester		undergraduate	Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).			
Conten	Its					
sing or mals a tify typ spectiv to deve develo raging	sing on water and forest habitats during the autumn (and winter) months. It will, for example, discuss how ani- mals and plants adapt to the temperatures experienced during the cold months of the year. Students will iden- tify typical indicator species of a lentic water body, using identification aids that are suitable for pupils in the re- spective type of school. They will also perform a chemical water analysis. In a forest habitat, students will learn to develop activity and problem-based lessons on this topic, lessons that are tailored to their target group and develop their pupils' affective, methodological and cognitive skills. Particular emphasis will be placed on encou- raging an awareness of the need for environmental protection in pupils.					
Intend	ed lear	ning outcomes				
Insight differen found i sight ir ronmen the tag	into th nt zone in these nto met ntal pro get grou	e ability of plants and an s lentic water bodies con e zones. Ability to prepare hods for chemical water tection to be delivered ir	imals to adapt to diff isist of and familiarity e field guides tailored analysis. Ability to de n the out-of-classroon	erent abiotic enviror with selected repre to the needs of the velop activity-based n learning environme	nmental factors. Over sentatives of plants t respective group of p I, multisensory lessor ent "Forest" that are t	view of the typically oupils. In- ns on envi- tailored to
Course	S (type, r	' number of weekly contact hours, I	language — if other than Ger	man)		
E + S (r	no infor	mation on SWS (weekly o	contact hours) and co	urse language availa	able)	
Metho module is	d of ass s creditab	eessment (type, scope, langua le for bonus)	ge — if other than German, e	examination offered — if no	t every semester, informatio	on on whether
a) sem	inar pa	per (17 to 20 pages), b) p	ortfolio (approx. 90 h	iours)		
Allocat	ion of p	olaces	-			
Additio	onal inf	ormation				
Workload						
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
§ 36 (1) 7. Didaktik der Grundschule Biologie						
Module	e appea	ars in				
First st First st	ate exa ate exa	mination for the teachinន mination for the teachinន	g degree Grundschule g degree Grundschule	Biology (2009) Didactics in Biology	ı (Primary School) (20	009)
LA Sonderr ry School)	oädagogik (2009)	Didactics in Biology (Seconda-	JMU Würzburg ● genera amt Sonderpädagogi	ted 26-Aug-2024 ● exam. reg k (Hauptschule-Didaktikfach	g. data record Lehr-) Biologie - 2009	page 24 / 28

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First state examination for the teaching degree Hauptschule Biology (2009) First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Realschule Biology (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009)

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Mittelschule Biology (2013)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)

Module title					Abbreviation	
Special	Didact	tics in Biology: Learning	Places outside Schoo	ol 2	07-GH-FDASL2-092-m01	
Module coordinator				Module offered by		
head of group Didactics of Biology				Faculty of Biology		
ECTS Method of grading			Only after succ. compl. of module(s)			
2	(not) s	successfully completed				
Duratio	n	Module level	Other prerequisites			
1 seme	ster	undergraduate				
Conten	ts					
This mo lab. Hay rate the importa pils in t	odule w ving ga ese into ant tech he prae	vill provide students with ined an overview of tradi o school-specific experim aniques for measuring ho ctice centre.	an overview of biolog tional and modern m ents. Students will pr w effective a session	gy experiments that ethods in biology, p repare classroom an was and will practis	are performed in a teach'n'learn articipants will learn to incorpo- d lab sessions, will be trained in se teaching these sessions to pu-	
Intende	ed learr	ning outcomes				
Knowle ments. how set and cur may be ning ac	dge of Ability ssions rent to incorp hievem	methods in biology. Abili to prepare sessions in a in the teach'n'learn lab n pics in biology in particu orated into biology lesso nent of pupils.	ity to forge and maint teach'n'learn lab and nay raise the pupils' l lar. Knowledge of how ns in <i>Grundschule</i> . O	ain links with out-of l perform the respec evel of motivation a v out-of-classroom s verview of methods	-classroom learning environ- tive follow-up work. Insight into nd interest in biology in general essions in the teach'n'learn lab for evaluating the cognitive lear-	
Course	S (type, n	umber of weekly contact hours, l	anguage — if other than Ger	man)		
S + Ü (r	no infor	mation on SWS (weekly o	contact hours) and co	ourse language avail	able)	
Method	l of ass	essment (type, scope, langua	ge — if other than German, e	examination offered — if no	t every semester, information on whether	
module is	creditab	le for bonus)				
Allocati	ion of r					
Allocal		naces				
Additio	nal inf	ormation				
	natini					
Worklo	ad					
Teaching cycle						
Referred to in LPO I (examination regulations for teaching-degree programmes)						
Module appears in						
First state examination for the teaching degree Grundschule Biology (2009) First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2009) First state examination for the teaching degree Hauptschule Biology (2009) First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2013) First state examination for the teaching degree Mittelschule Biology (2013) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)						

Module title					Abbreviation			
Special Didactics in Biology: Motivation and Discipline in Biology				iology Education	07-LA-FDDIS-092-m	101		
Module coordinator			Module offered by					
head of group Didactics of Biology				Faculty of Biology				
ECTS Method of grading Only after suc			Only after succ. com	pl. of module(s)				
2	(not) s	successfully completed						
Duratio	n	Module level	Other prerequisites	Other prerequisites				
1 semester l		undergraduate	Admission prerequis seminars and lab co of unexcused absen fortnightly courses: completion of the re at the beginning of t	Admission prerequisite to assessment: regular attendance of exercises, seminars and lab courses (weekly courses: a maximum of one incident of unexcused absence and one excused absence for a legitimate reason; fortnightly courses: one incident of unexcused absence) and successful completion of the respective exercises (required percentage as specified at the beginning of the course).				
Content	ts							
You will learn how to handle difficult situations in class and will develop methodological skills for the biology classroom. We will discuss the duties and responsibilities of teachers and you will learn how to effectively fulfil these in your first year as a teacher. We will then analyse typical causes of disruption that junior teachers tend to face during their first year at school and will discuss ways to deal with disruptive pupils and prevent disruption. In this context, you will find out what you have to do before the school year starts and what you can do to prevent classroom disruptions before they occur. We will also reflect on how the way we act affects the way pupils act. We will discuss the use of reinforcements and reprimands, disciplinary measures and the involvement of external authorities, head teachers and parents. You will also acquire an insight into the following acts and regulations: <i>Bayerisches Gesetz über das Erziehungs- und Unterrichtswesen</i> (Bavarian Education Act, BayEUG), <i>Dienstordnung für Lehrkräfte an staatlichen Schulen in Bayern</i> (Regulations for Teachers at State Schools in Bavaria, LDO) as well as <i>Schulordnung für die Gymnasien/Volksschulen/Realschulen in Bayern</i> (Regulations for the seminar will acquaint you with a range of methods for designing lessons for the biology classroom of the 21st century. In this context,								
Intended learning outcomes								
Overview of the duties and responsibilities of teachers Insight into the following acts and regulations: BayEUG, LDO, GSO, VSO and RSO Insight into causes of disruption as well as ways to deal with disruptive pupils and prevent disruption Overview of disciplinary measures.								
Courses (type, number of weekly contact hours, language — if other than German)								
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)								
Allocation of places								
Allocation of places								
Workload								
Teaching cycle								
-								
Referre	d to in	LPOI (examination regulati	ons for teaching-degree progra	mmes)				
	<u> </u>	commuton regulati						
LA Sonderpä ry School) (2	ädagogik 2009)	Didactics in Biology (Seconda-	JMU Würzburg • genera amt Sonderpädagogi	ted 26-Aug-2024 • exam. reg k (Hauptschule-Didaktikfach)	g. data record Lehr-) Biologie - 2009	page 27 / 28		

Module appears in

First state examination for the teaching degree Grundschule Biology (2009)

First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2009) First state examination for the teaching degree Hauptschule Biology (2009)

First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Realschule Biology (2009)

First state examination for the teaching degree Gymnasium Biology (2009)

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Secondary School) (2009) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2013) First state examination for the teaching degree Mittelschule Biology (2013)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)