

Subdivided Module Catalogue  
for the Subject

# Didactics in Biology (Secondary School)

as Didaktikfach  
with the degree "Erste Staatsprüfung für das Lehramt an  
Hauptschulen"

Examination regulations version: 2009  
Responsible: Faculty of Biology

## Abbreviations used

Course types: **E** = field trip, **K** = colloquium, **O** = conversatorium, **P** = placement/lab course, **R** = project, **S** = seminar, **T** = tutorial, **Ü** = exercise, **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.

## The subject is divided into

Abbreviation	Module title	ECTS credits	Method of grading	page
<b>Compulsory Courses (20 ECTS credits)</b>				
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).				
07-DH-FWBIO1-092-m01	Basics of Biology I - Cytology and Anatomy	5	NUM	8
07-DH-FDBIO1-092-m01	Didactics in Biology I	5	NUM	4
07-DH-FWBIO2-092-m01	Basics of Biology II - Systematics and Ecology	5	NUM	10
07-DH-FDBIO2-092-m01	Didactics in Biology II	5	NUM	6
<b>Freier Bereich (general as well as subject-specific electives)</b>				
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".				
07-LA-ZQN2-092-m01	Additional Qualification MINT 2	2	B/NB	24
07-LA-ZQN3-092-m01	Additional Qualification MINT 3	3	B/NB	25
07-LA-ZQN4-092-m01	Additional Qualification MINT 4	4	B/NB	26
07-GH-FDUBI1B-121-m01	Environmental Education in the Teach'n' LearnGarden	2	B/NB	13
07-LA-FDSTX-092-m01	Special Didactics in Biology: Preparation for the Written Exam	2	B/NB	22
07-LA-FDGES-092-m01	Special Didactics in Biology: Health Education	2	B/NB	20
07-GS-FDSOV-092-m01	Advanced Didactics in Biology	5	B/NB	15
07-GH-FDASL2-092-m01	Special Didactics in Biology: Learning Places outside School 2	2	B/NB	12
07-LA-FDDIS-092-m01	Special Didactics in Biology: Motivation and Discipline in Biology Education	2	B/NB	18
<b>Thesis (10 ECTS credits)</b>				
Preparation of a written Hausarbeit (thesis) in accordance with the provisions of Section 29 LPO I (examination regulations for teaching-degree programmes) is a prerequisite for teaching degree students to be admitted to the Erste Staatsprüfung (First State Examination). In accordance with the provisions of Section 29 LPO I, students studying for a teaching degree Hauptschule may write this thesis in the subject Didaktik einer Fächergruppe der Hauptschule (Didactics of a Group of Subjects of Hauptschule), in the subject they selected as Unterrichtsfach (subject studied with a focus on the scientific discipline) or in the subject Erziehungswissenschaften (Educational Science). Pursuant to Section 29 Subsection 1 Sentence 2 LPO I, students may also choose to write an interdisciplinary thesis.				
07-HS-DF-HA-092-m01	Thesis in Didactics in Biology	10	NUM	17

Module title		Abbreviation
Didactics in Biology I		07-DH-FDBIO1-092-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)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.
<b>Contents</b>		
<p>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 <i>Lehrplan (Curriculum)</i> will equip students with detailed knowledge on how to plan and design classes for <i>Grundschule</i>. 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 (<i>Grundschule</i>).</p>		
<b>Intended learning outcomes</b>		
<p>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.</p>		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
<p>This module comprises 2 module components. Information on courses will be listed separately for each module component.</p> <ul style="list-style-type: none"> <li>• 07-LA-FDGRU-2-092: S (no information on SWS (weekly contact hours) and course language available)</li> <li>• 07-GH-FDBIO1-1-092: V (no information on SWS (weekly contact hours) and course language available)</li> </ul>		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
<p>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.</p>		
<p><b>Assessment in module component 07-LA-FDGRU-2-092: School-Type-Specific Didactics in Biology (Seminar)</b></p> <ul style="list-style-type: none"> <li>• 2 ECTS, Method of grading: numerical grade</li> <li>• written examination (30 to 45 minutes) or term paper (10 to 15 pages)</li> <li>• 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</li> </ul>		
LA Hauptschulen Didactics in Biology (Secondary School) (2009)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Lehramt Hauptschulen (Didaktikfach) Biologie - 2009	page 4 / 26

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 07-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

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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  
§ 41 (1) 6. Biologie Fachdidaktik  
§ 61 (1) 8. Biologie Didaktik

#### Module appears in

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

Module title			Abbreviation
Didactics in Biology II			07-DH-FDBIO2-092-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)	
5	numerical grade	--	
Duration	Module level	Other prerequisites	
1 semester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.	
Contents			
<p>[Version 1: A lecture on the biology-specific contents of the curriculum for <i>Hauptschule</i> 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 <i>Hauptschule</i> 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.]</p>			
Intended learning outcomes			
<p>[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 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.]</p>			
Courses (type, number of weekly contact hours, language — if other than German)			
<p>This module comprises 3 module components. Information on courses will be listed separately for each module component.</p> <ul style="list-style-type: none"><li>• 07-DH-FDUM-1-121: S (no information on SWS (weekly contact hours) and course language available)</li><li>• 07-DH-FDBIO2-2-092: S (no information on SWS (weekly contact hours) and course language available)</li></ul>			
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<ul style="list-style-type: none"> <li>07-DH-FWBIO2-3-092: S (no information on SWS (weekly contact hours) and course language available)</li> </ul>
<p><b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)</p> <p>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.</p> <p><b>Assessment in module component 07-DH-FDUM-1-121:</b> Special Didactics in Biology: Teaching aids (Seminar)</p> <ul style="list-style-type: none"> <li>1 ECTS, Method of grading: (not) successfully completed</li> <li>seminar paper (10 to 15 pages)</li> <li>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).</li> </ul> <p><b>Assessment in module component 07-DH-FDBIO2-2-092:</b> Teaching Techniques and Experiments in Biology (Seminar)</p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: numerical grade</li> <li>written examination (30 to 60 minutes) or colloquium (10 to 30 minutes)</li> <li>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).</li> </ul> <p><b>Assessment in module component 07-DH-FWBIO2-3-092:</b> Learning Places Outside the Classroom (Seminar)</p> <ul style="list-style-type: none"> <li>2 ECTS, Method of grading: (not) successfully completed</li> <li>seminar paper (10 to 15 pages)</li> <li>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).</li> </ul>
<p><b>Allocation of places</b></p> <p>--</p>
<p><b>Additional information</b></p> <p>--</p>
<p><b>Workload</b></p> <p>--</p>
<p><b>Teaching cycle</b></p> <p>--</p>
<p><b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)</p> <p>§ 36 (1) 7. Didaktik der Grundschule Biologie § 38 (1) 1. Didaktik der Hauptschule Biologie § 38 (1) 1. Didaktik der Mittelschule Biologie</p>
<p><b>Module appears in</b></p> <p>First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (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 Didactics in Biology (Middle School) (2013)</p>



Module title		Abbreviation
<b>Basics of Biology I - Cytology and Anatomy</b>		07-DH-FWBIO1-092-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)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.
<b>Contents</b>		
<p>A lecture on the biology-specific contents of the curriculum for <i>Hauptschule</i> 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.</p>		
<b>Intended learning outcomes</b>		
<p>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. Ability to name the most important 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.</p>		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
<p>This module comprises 2 module components. Information on courses will be listed separately for each module component.</p> <ul style="list-style-type: none"> <li>• 07-DH-FWBIO1-1-092: V (no information on SWS (weekly contact hours) and course language available)</li> <li>• 07-DH-FWBIO1-2-092: Ü (no information on SWS (weekly contact hours) and course language available)</li> </ul>		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
<p>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.</p> <p><b>Assessment in module component 07-DH-FWBIO1-1-092: Introduction to Biology I (Lecture)</b></p> <ul style="list-style-type: none"> <li>• 3 ECTS, Method of grading: numerical grade</li> <li>• written examination (60 to 90 minutes)</li> </ul> <p><b>Assessment in module component 07-DH-FWBIO1-2-092: Cytology and Anatomy of Animals and Plants (Practice)</b></p> <ul style="list-style-type: none"> <li>• 2 ECTS, Method of grading: (not) successfully completed</li> <li>• 10 to 15 drawings</li> <li>• 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).</li> </ul>		
<b>Allocation of places</b>		
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<b>Additional information</b>
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<b>Workload</b>
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<b>Teaching cycle</b>
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)
§ 38 (1) 1. Didaktik der Hauptschule Biologie § 38 (1) 1. Didaktik der Mittelschule Biologie
<b>Module appears in</b>
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (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 Didactics in Biology (Middle School) (2013)

Module title			Abbreviation
Basics of Biology II - Systematics and Ecology			07-DH-FWBIO2-092-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)	
5	numerical grade	--	
Duration	Module level	Other prerequisites	
1 semester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.	
Contents			
The lecture on the biology-specific contents of the curriculum for <i>Hauptschule</i> 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. <ul style="list-style-type: none"><li>07-DH-FWBIO2-2-121: Ü (no information on SWS (weekly contact hours) and course language available)</li><li>07-DH-FWBIO2-1-092: V (no information on SWS (weekly contact hours) and course language available)</li></ul>			
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)			
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.			
<b>Assessment in module component 07-DH-FWBIO2-2-121:</b> Introduction into Local Flora and Fauna <ul style="list-style-type: none"><li>2 ECTS, Method of grading: (not) successfully completed</li><li>oral examination in groups (groups of 3 to 5 candidates, 5 to 10 minutes per candidate)</li><li>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).</li></ul>			
<b>Assessment in module component 07-DH-FWBIO2-1-092:</b> Introduction to Biology II (Lecture) <ul style="list-style-type: none"><li>3 ECTS, Method of grading: numerical grade</li><li>written examination (60 to 90 minutes)</li></ul>			

<ul style="list-style-type: none"> <li>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).</li> </ul>
<b>Allocation of places</b>
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<b>Additional information</b>
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<b>Workload</b>
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<b>Teaching cycle</b>
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)
§ 38 (1) 1. Didaktik der Hauptschule Biologie
§ 38 (1) 1. Didaktik der Mittelschule Biologie
<b>Module appears in</b>
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 title		Abbreviation
<b>Special Didactics in Biology: Learning Places outside School 2</b>		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) successfully completed	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
This module will provide students with an overview of biology experiments that are performed in a teach'n'learn lab. Having gained an overview of traditional and modern methods in biology, participants will learn to incorporate these into school-specific experiments. Students will prepare classroom and lab sessions, will be trained in important techniques for measuring how effective a session was and will practise teaching these sessions to pupils in the practice centre.		
Intended learning outcomes		
Knowledge of methods in biology. Ability to forge and maintain links with out-of-classroom learning environments. Ability to prepare sessions in a teach'n'learn lab and perform the respective follow-up work. Insight into how sessions in the teach'n'learn lab may raise the pupils' level of motivation and interest in biology in general and current topics in biology in particular. Knowledge of how out-of-classroom sessions in the teach'n'learn lab may be incorporated into biology lessons in <i>Grundschule</i> . Overview of methods for evaluating the cognitive learning achievement of pupils.		
Courses (type, number of weekly contact hours, language — if other than German)		
S + 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)		
seminar paper (7 to 10 pages)		
Allocation of places		
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Additional information		
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Workload		
--		
Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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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
Environmental Education in the Teach'n' LearnGarden		07-GH-FDUBl1B-121-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) successfully completed	--
Duration	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).
Contents		
<p>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 Botanical 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 "Water" 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 develop 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 experience in their new role as teachers.</p>		
Intended learning outcomes		
<p>Familiarity with the principles of environmental education. Familiarity with different factors that may encourage pupils to act responsibly towards nature. Insight into the fundamental scientific principles behind the respective topics. Overview of the individual contents of the teaching units to be designed. Ability to translate topics from the curriculum for the respective type of school, in a didactically reduced manner, into teaching sequences, 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 conditions.</p>		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü + 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 can be chosen to earn a bonus)		
seminar paper (7 to 10 pages)		
Allocation of places		
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Additional information		
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Workload		
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Teaching cycle		
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LA Hauptschulen Didactics in Biology (Secondary School) (2009)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Lehramt Hauptschulen (Didaktikfach) Biologie - 2009	page 13 / 26

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

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**Module appears in**

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



Module title		Abbreviation
Advanced Didactics in Biology		07-GS-FDSOV-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)
5	(not) successfully completed	--
Duration	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).
<b>Contents</b>		
This module will explore the topic "out-of-classroom learning environments in <i>Grundschule</i> " in more detail, focusing on water and forest habitats during the autumn (and winter) months. It will, for example, discuss how animals and plants adapt to the temperatures experienced during the cold months of the year. Students will identify typical indicator species of a lentic water body, using identification aids that are suitable for pupils in the respective 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 encouraging an awareness of the need for environmental protection in pupils.		
<b>Intended learning outcomes</b>		
Insight into the ability of plants and animals to adapt to different abiotic environmental factors. Overview of the different zones lentic water bodies consist of and familiarity with selected representatives of plants typically found in these zones. Ability to prepare field guides tailored to the needs of the respective group of pupils. Insight into methods for chemical water analysis. Ability to develop activity-based, multisensory lessons on environmental protection to be delivered in the out-of-classroom learning environment "Forest" that are tailored to the target group.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
E + S (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
a) seminar paper (17 to 20 pages), b) portfolio (approx. 90 hours)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
§ 36 (1) 7. Didaktik der Grundschule Biologie		
<b>Module appears in</b>		
First state examination for the teaching degree Grundschule Biology (2009)		
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2009)		
LA Hauptschulen Didactics in Biology (Secondary School) (2009)	JMU Würzburg • generated 26-Aug-2024 • exam. reg. data record Lehramt Hauptschulen (Didaktikfach) Biologie - 2009	page 15 / 26

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
Thesis in Didactics in Biology		07-HS-DF-HA-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)
10	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
<b>Contents</b>		
Students pursuing a teaching degree <i>Hauptschule</i> who have selected biology as their <i>Didaktikfach</i> (subject studied with a focus on teaching methodology) may write their <i>Hausarbeit</i> (thesis) for example in biology didactics. Within a given time frame, students will independently research and write on a topic, applying the necessary methods.		
<b>Intended learning outcomes</b>		
Students will be able to address a defined problem, applying scientific approaches and methods. They will use didactic methods appropriate to the respective topic. They will present their findings in a written thesis. Working on this thesis, students will enhance their scientific writing skills (structuring papers, citing sources etc.).		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
no courses assigned		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
written thesis (30 to 50 pages)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
Additional information on module duration: 1 to 2 semesters.		
<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
First state examination for the teaching degree Hauptschule Didactics in Biology (Secondary School) (2009) 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 Education			07-LA-FDDIS-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) successfully completed	--	
Duration	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).	
Contents			
The main aim of this seminar is to facilitate your transition from the first to the second phase your training. 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 Governing Gymnasien/Volksschulen/Realschulen in Bavaria, GSO/VSO/RSO). The second part of the seminar will acquaint you with a range of methods for designing lessons for the biology classroom of the 21st century. In this context, we will focus on discussing and working on open methods for teaching biology.			
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 can be chosen to earn a bonus)			
seminar paper (7 to 10 pages)			
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)			
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LA Hauptschulen Didactics in Biology (Secondary School) (2009)

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### 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)

Module title		Abbreviation
<b>Special Didactics in Biology: Health Education</b>		07-LA-FDGES-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) successfully completed	--
Duration	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).
<b>Contents</b>		
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 theories. 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 habits. 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 implement these measures and will also take interdisciplinary aspects into account.		
<b>Intended learning outcomes</b>		
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.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
S (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
seminar paper (7 to 10 pages)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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### 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
<b>Special Didactics in Biology: Preparation for the Written Exam</b>		07-LA-FDSTX-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) successfully completed	--
Duration	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).
<b>Contents</b>		
This seminar will provide students preparing for the written state examination with an opportunity to revise key topics in biology didactics. In small teams, students will prepare and deliver presentations on three key areas. The first block will discuss an area of the theory of biology didactics, this will be followed by the discussion of a topic in the biology classroom with respect to aspects of the scientific discipline and a didactic analysis. In the final part of the course, students will solve an exam paper from a previous year.		
<b>Intended learning outcomes</b>		
<ul style="list-style-type: none"> <li>- Knowledge of what types of problems are typically asked in the written state examination in biology didactics.</li> <li>- Ability to solve an exam paper within the specified time frame.</li> <li>- Ability to gauge the appropriate length of answers to questions.</li> </ul>		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
S (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
seminar paper (7 to 10 pages)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
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)		
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First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2013)

<b>Module title</b>		<b>Abbreviation</b>
<b>Additional Qualification MINT 2</b>		07-LA-ZQN2-092-m01
<b>Module coordinator</b>		<b>Module offered by</b>
degree programme coordinator Biologie (Biology)		Faculty of Biology
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
2	(not) successfully completed	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
Courses in the natural sciences that equip students with advanced knowledge in the natural sciences that is related to their discipline. These courses may be offered by the University of Würzburg or by external institutions. Credit transfer subject to approval.		
<b>Intended learning outcomes</b>		
Students have acquired advanced knowledge as well as additional specialist skills in STEM subjects that will help them specialise in a sub-discipline of biology.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
V + S + Ü (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
a) written examination (30 to 120 minutes) or b) log (10 to 30 pages) or c) oral examination of one candidate each (20 to 60 minutes) or d) oral examination in groups of up to 3 candidates or e) presentation (20 to 45 minutes) or f) portfolio (30 to 120 hours)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
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)		

<b>Module title</b>		<b>Abbreviation</b>
<b>Additional Qualification MINT 3</b>		07-LA-ZQN3-092-m01
<b>Module coordinator</b>		<b>Module offered by</b>
degree programme coordinator Biologie (Biology)		Faculty of Biology
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
3	(not) successfully completed	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
Courses in the natural sciences that equip students with advanced knowledge in the natural sciences that is related to their discipline. These courses may be offered by the University of Würzburg or by external institutions. Credit transfer subject to approval.		
<b>Intended learning outcomes</b>		
Students have acquired advanced knowledge as well as additional specialist skills in STEM subjects that will help them specialise in a sub-discipline of biology.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
Ü + S + V (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
a) written examination (30 to 120 minutes) or b) log (10 to 30 pages) or c) oral examination of one candidate each (20 to 60 minutes) or d) oral examination in groups of up to 3 candidates or e) presentation (20 to 45 minutes) or f) portfolio (30 to 120 hours)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
--		
<b>Teaching cycle</b>		
--		
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
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)		

<b>Module title</b>		<b>Abbreviation</b>
<b>Additional Qualification MINT 4</b>		07-LA-ZQN4-092-m01
<b>Module coordinator</b>		<b>Module offered by</b>
degree programme coordinator Biologie (Biology)		Faculty of Biology
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
4	(not) successfully completed	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
Courses in the natural sciences that equip students with advanced knowledge in the natural sciences that is related to their discipline. These courses may be offered by the University of Würzburg or by external institutions. Credit transfer subject to approval.		
<b>Intended learning outcomes</b>		
Students have acquired advanced knowledge as well as additional specialist skills in STEM subjects that will help them specialise in a sub-discipline of biology.		
<b>Courses</b> (type, number of weekly contact hours, language — if other than German)		
V + S + Ü (no information on SWS (weekly contact hours) and course language available)		
<b>Method of assessment</b> (type, scope, language — if other than German, examination offered — if not every semester, information on whether module can be chosen to earn a bonus)		
a) written examination (30 to 120 minutes) or b) log (10 to 30 pages) or c) oral examination of one candidate each (20 to 60 minutes) or d) oral examination in groups of up to 3 candidates or e) presentation (20 to 45 minutes) or f) portfolio (30 to 120 hours)		
<b>Allocation of places</b>		
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<b>Additional information</b>		
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<b>Workload</b>		
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<b>Teaching cycle</b>		
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<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
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<b>Module appears in</b>		
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)		