Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Subdivided Module Catalogue

for the Subject

Didactics in Biology (Middle School)

as Didaktikfach

with the degree "Erste Staatsprüfung für das Lehramt an Mittelschulen"

Examination regulations version: 2015
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:

LASPO2015

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

20-Oct-2015 (2015-195)

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
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 Mittelschule (Didactics of a Group of Subjects of Mittelschule).				
07-DM-FWBIO-1-152-m01	Basics of Biology I	5	NUM	8
07-DM-FWBIO-2-152-m01	Basics of Biology II	5	B/NB	10
07-DGDM-FD-BIO-1-152-m01	Didactics in Biology I: Basics DG/DM	5	NUM	4
07-DGDM-FD-BIO-2-152-m01	Didactics Biology II: Special Didactics DG/DM	5	B/NB	6
Freier Bereich (general as well as subject-specific electives) 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".				
Extra Skills Teaching Biology at the German Mittelschule (Freier Bereich (general as well as subject-specific electives) -- subject specific)				
07-LA-ZQN2-152-m01	Additional Qualification MINT 2	2	B/NB	21
07-LA-ZQN3-152-m01	Additional Qualification MINT 3	3	B/NB	22
07-LA-ZQN4-152-m01	Additional Qualification MINT 4	4	B/NB	23
07-LA-ZQN5-152-m01	Additional Qualification MINT 5	5	B/NB	24
07-LA-ZQN6-152-m01	Additional Qualification MINT 6	5	B/NB	25
07-LA-EXKURS1-152-m01	Excursion on Zoology or Botany I	2	B/NB	12
07-LA-EXKURS2-152-m01	Excursion on Zoology or Botany II	4	B/NB	13
07-LA-FB-ASL-152-m01	Extracurricular Places of Learning in Biology	5	B/NB	14
07-LA-FB-KO-152-m01	Skills Orientated Learning in Biology	5	B/NB	18
07-LA-FB-EL-152-m01	Habitats of Germany	5	B/NB	16
07-LA-FB-VFD-152-m01	Advanced Didactics in Biology	4	B/NB	20
Paper (10 ECTS credits) 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 Mittelschule may write this thesis in the subject Didaktik einer Fächergruppe der Mittelschule (Didactics of a Group of Subjects of Mittelschule), 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-MS-DF-HA-152-m01	Thesis in Biology (Mittelschulen)	10	NUM	26

Module title			Abbreviation
Didactics in Biology I: Basics DG/DM			07-DGDM-FDBIO-1-152-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	--	

Contents

The lecture *Einführung in die Fachdidaktik Biologie* (*Introduction to Biology Didactics*) will discuss 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 course will discuss topics such as modes of interaction in the classroom, teaching methods and approaches, the definition of learning outcomes, out-of-classroom learning environments, topics and theories in biology didactics etc. The seminar *Biologieunterricht* (*The Biology Classroom*) will equip students with detailed knowledge on how to plan and design classes for the respective type of school. 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 (as well as teaching aids) into their lessons, keeping in mind what is and what is not possible in the respective type of school, and will deliver their lessons or parts of these in the seminar. Didactic aspects will be evaluated and discussed in class. 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. Using examples from the classroom, the seminar *Unterrichtsmittel* (*Teaching Aids*) will acquaint students with specific teaching aids (originals, preparations and media) for use in the biology classroom and will assess these with regard to the media literacy skills to be developed. The seminar will discuss both traditional aids used in the biology classroom (models, blackboard, OHP, transparencies, textbook and worksheets etc.) and modern aids (computer simulations, ppt presentations etc.). After having received a theoretical introduction to teaching aids, students will be arranged into small teams that will deliver lessons or individual phases of lessons on specific topics from the curriculum. They will focus on a teaching aid of their choice which will subsequently be assessed with regard to aspects of media didactics.

Intended learning outcomes

Familiarity with relevant aspects of biology didactics

- Ability to design lively biology lessons, using original objects and teaching aids.
- Ability to use methods in biology in a way that promotes the learning processes of pupils.
- Familiarity with both biology-specific and interdisciplinary topics from the curriculum for the respective type of school.
- Ability to prepare scientific analyses on selected topics from the curriculum for the respective type of school and to subsequently present these topics in a manner that is tailored to the target group.
- Ability to prepare didactic analyses on topics from the curriculum for the respective type of school.
- Ability to translate, with the help of didactic analyses, selected topics from the curriculum into teaching sequences and lessons as well as to deliver these teaching sequences and lessons, applying problem-based and/or open teaching methods.
- 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 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 teaching aids.
- 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)

V (2) + S (3)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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

§ 36 I Nr. 7
§ 38 I Nr. 1

Module appears in

First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Didactics Biology II: Special Didactics DG/DM			07-DGDM-FDBIO-2-152-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	--	

Contents

In the seminar *Arbeitstechniken und Schulversuche* (*Methods and Experiments in the Classroom*), students will be arranged into small teams and will perform a variety of experiments on classic topics in biology. The experiments, which will be tailored to the requirements of the respective type of school, will subsequently be assessed in class with regard to didactic aspects and/or will be integrated into concrete classroom situations. Students will thus acquire techniques and background knowledge that will enable them to deliver lively and motivating lessons to different age groups. The seminar *Freilandbiologie* (*Outdoor Biology*) will explore general aspects on how students may incorporate field trips to out-of-classroom learning environments into their teaching. In addition to the scientific identification and characterisation of plant and/or animal communities in their natural habitats, the seminar will discuss didactic and pedagogical criteria for the selection of out-of-classroom learning environments that are relevant for the respective type of school. In this context, the course will also discuss the opportunities and limitations of out-of-classroom learning. Designing practice-oriented teaching units, students will practise teaching the identification of indigenous animals and plants to fellow students and/or groups of pupils in selected out-of-classroom learning environments.

Intended learning outcomes

- Ability to implement experiments typically performed in the biology classroom and to integrate them into activity and problem-based lessons.
- Ability to define research methods in the natural sciences and to match these up with selected classroom experiments.
- Ability to analyse and evaluate the practical implementation with experiments in the classroom as well as research methods in the natural sciences, taking didactic aspects into account.
- Ability to evaluate the significance of original encounters with nature in out-of-classroom learning environments as key elements of biology lessons.
- Ability to prepare and deliver a session in an out-of-classroom learning environment and to perform the respective follow-up work.
- Ability to impart a knowledge of species and form in a didactically reduced manner that is tailored to the needs of the respective group of pupils.

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

S (4)

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)

portfolio (approx. 30 hours)
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 36 I Nr. 7 § 38 I Nr. 1
Module appears in
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Basics of Biology I			07-DM-FWBIO-1-152-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	--	

Contents

A lecture on the biology-specific contents of the curriculum for *Grundschule* or *Mittelschule* will equip students with essential 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.

Intended learning outcomes

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.

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

V (2) + Ü (2)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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

§ 38 I Nr. 1

Module appears in

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Basics of Biology II			07-DM-FWBIO-2-152-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	--	

Contents

The lecture on the biology-specific contents of the curriculum for *Mittelschule* 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)

V (2) + Ü (2)

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)

oral examination in groups (approx. 15 minutes per candidate)
Assessment offered: Once a year, summer semester
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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

§ 38 I Nr. 1

Module appears in

First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Excursion on Zoology or Botany I			07-LA-EXKURS1-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (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

During this multi-day botanical or zoological teaching hike, students will explore selected habitats and communities of plants and animals in Germany and abroad.

Intended learning outcomes

Students are familiar with terrestrial plant and animal communities, their habitat requirements as well as the factors that influence the composition of these communities.

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

Ü (2)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

60 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Excursion on Zoology or Botany II			07-LA-EXKURS2-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
4	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

During this multi-day botanical or zoological teaching hike, students will explore selected habitats and communities of plants and animals in Germany and abroad.

Intended learning outcomes

Students are familiar with terrestrial plant and animal communities, their habitat requirements as well as the factors that influence the composition of these communities.

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

Ü (4)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

120 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Extracurricular Places of Learning in Biology			07-LA-FB-ASL-152-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	--	

Contents

The seminar *Umweltbildung* (*Environmental Education*) will discuss approaches to environmental education as well as didactic components and will highlight the significance of out-of-classroom learning environments for biology lessons. In the Botanical Garden and indigenous habitats, students will try out practical methods for environmental education and will develop short teaching sequences to be delivered in out-of-classroom learning environments. In the seminar *PraxisPlus im LLL* (*Teach'n'Learn Lab: Intensive Practice*), students will be arranged into teams that will independently deliver existing lessons in a teach'n'learn lab. Applying a range of didactic methods, students will develop an understanding of research in biology didactics. Supervising groups of pupils of different ages, they will enhance their teaching skills. In the seminar *Biologiedidaktische Forschung* (*Research in Biology Didactics*), students will gain an overview of topics in current research on biology didactics and will become proficient in techniques for measuring the progress of pupils in acquiring knowledge and skills.

Intended learning outcomes

- Familiarity with current as well as older approaches to environmental education and ability to identify the factors that may encourage pupils to act responsibly towards nature.
- Ability to explore the scientific principles behind the respective topics.
- 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.
- Ability to didactically adapt selected research methods for the age group students are teaching and the type of school at which they are teaching.
- Ability to describe current topics in didactics.
- Ability to assess and evaluate the cognitive learning achievement of pupils.

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

S (2) + S (2)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Habitats of Germany			07-LA-FB-EL-152-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**	
2 semester	undergraduate	--	

Contents

The exercise *Einheimische Lebensräume im Biologieunterricht* (*Indigenous Habitats in the Biology Classroom*) will provide students with an opportunity to explore the topic "teaching biology in out-of-classroom learning environments" in more detail. The course will focus on the methodological aspect of environmental education. Students will adapt existing teaching units on water, forest, grassland, farmland and/or hedgerow habitats, will deliver the respective units to groups of pupils, preferably during a project day at an environmental education centre, and will subsequently evaluate the sessions. Students will develop an activity and problem-based lesson on a concrete topic related to the respective habitat, a lesson that is tailored to their target group and develops their pupils' affective, methodological and cognitive skills.

Intended learning outcomes

- Ability to develop activity-based and multisensory lessons in out-of-classroom learning environments that are tailored to the target group as well as ability to adapt and evaluate lessons.
- Ability to independently organise and run project days.
- Ability to critically reflect on the respective lessons, taking aspects of environmental education into consideration.

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

Ü (3)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

Teaching cycle

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

§ 36 I Nr. 7

Module appears in

First state examination for the teaching degree Grundschule Biology (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)

First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Skills Orientated Learning in Biology			07-LA-FB-KO-152-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	--	

Contents

In the seminar *Gesundheitserziehung* (*Health Education*), 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 focus on the following topics: drugs and substance abuse, sex education, unhealthy eating habits and lack of exercise. We will develop lessons to promote a healthy lifestyle that are tailored to the requirements of the respective type of school and will discuss general measures as well as measures related to specific topics. In the seminar *Motivierte und disziplinierte Schüler im Biologieunterricht* (*Motivation and Discipline in the Biology Classroom*), 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 as well as ways to effectively fulfil these. We will analyse typical causes of disruption and will discuss ways to deal with disruptive pupils and prevent disruption. The seminar *Kompetenzorientierte Unterrichtsmodelle am Beispiel HOBOS* (*Skill-Oriented Instructional Models: the HOBOS Learning Platform*) will provide you with an introduction to the HOBOS learning platform and will acquaint you with the concepts of skill-oriented learning and educational standards. Discussing concrete examples, we will find out what effects output orientation may have on teaching. In addition, you will learn to plan and implement lessons, observing the principle of individualisation. You will acquire broad range of methods that will allow you to do so.

Intended learning outcomes

- Ability to explain both selected explanatory approaches to understanding health-impairing behaviours and historical as well as current approaches to the prevention of these behaviours.
- Ability to translate topics in the area of health education and disease prevention from the curriculum for the respective type of school, in a didactically reduced manner, into lessons.
- Ability to name the duties and responsibilities of teachers as well as fundamental principles set out in the following acts and regulations: Bayerisches Gesetz über das Erziehungs- und Unterrichtswesen (Bavarian Education Act, BayEUG), Dienstordnung für Lehrkräfte an staatlichen Schulen in Bayern (Regulations for Teachers at State Schools in Bavaria, LDO) as well as Schulordnung für die Gymnasien/Volksschulen/Realschulen in Bayern (Regulations Governing Gymnasien/Volksschulen/Realschulen in Bavaria, GSO/VSO/RSO).
- Ability to recognise causes of disruption

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

S (2) + S (2)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

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 (2015) First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015) First state examination for the teaching degree Realschule Biology (2015) First state examination for the teaching degree Gymnasium Biology (2015) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Biology (2015) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015) First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015)) First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Advanced Didactics in Biology			07-LA-FB-VFD-152-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)**	
4	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

This module will provide students with in-depth insights into the theory and practice of biology didactics.

Intended learning outcomes

Students will be able to apply the fundamental knowledge they have acquired to a range of aspects of biology didactics.

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

S (2)

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)

a) written examination (approx. 45 to 90 minutes) or b) oral examination of one candidate each (30 to 60 minutes) or c) term paper (approx. 10 to 30 pages) or d) portfolio.
Students will be informed about the method and length of the assessment prior to the course.
creditable for bonus

Allocation of places

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Additional information

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Workload

120 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Additional Qualification MINT 2			07-LA-ZQN2-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (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

Courses in areas other than the natural sciences that are not offered as part of the pool of general transferable skills (ASQ) and that provide students with an opportunity to strengthen their general background in the natural sciences. These courses may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee. Will include one week of all-day courses.

Intended learning outcomes

Students have expanded their interdisciplinary knowledge and have thus enhanced their general scientific skills. They have acquired additional expertise and have developed additional skills in areas other than biology.

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

S (2)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

60 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Additional Qualification MINT 3			07-LA-ZQN3-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
3	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Courses in areas other than the natural sciences that are not offered as part of the pool of general transferable skills (ASQ) and that provide students with an opportunity to strengthen their general background in the natural sciences. These courses may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee. Will include courses with 1 weekly contact hour.

Intended learning outcomes

Students have expanded their interdisciplinary knowledge and have thus enhanced their general scientific skills. They have acquired additional expertise and have developed additional skills in areas other than biology.

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

S (3)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

90 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Additional Qualification MINT 4			07-LA-ZQN4-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (Biology)		Faculty of Biology	
ECTS	**Method of grading**	**Only after succ. compl. of module(s)**	
4	(not) successfully completed	--	
Duration	**Module level**	**Other prerequisites**	
1 semester	undergraduate	--	

Contents

Courses in areas other than the natural sciences that are not offered as part of the pool of general transferable skills (ASQ) and that provide students with an opportunity to strengthen their general background in the natural sciences. These courses may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee. Will include one week of all-day courses.

Intended learning outcomes

Students have expanded their interdisciplinary knowledge and have thus enhanced their general scientific skills. They have acquired additional expertise and have developed additional skills in areas other than biology.

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

S (4)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

120 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Additional Qualification MINT 5			07-LA-ZQN5-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (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	--	

Contents

Courses in areas other than the natural sciences that are not offered as part of the pool of general transferable skills (ASQ) and that provide students with an opportunity to strengthen their general background in the natural sciences. These courses may be offered by the University of Würzburg or by external institutions. Decision on credit transfer to be made by examination committee. Will include one week of all-day courses.

Intended learning outcomes

Students have expanded their interdisciplinary knowledge and have thus enhanced their general scientific skills. They have acquired additional expertise and have developed additional skills in areas other than biology.

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

S (4)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Additional Qualification MINT 6			07-LA-ZQN6-152-m01
Module coordinator		**Module offered by**	
degree programme coordinator Biologie (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	--	

Contents

Courses in the natural sciences not offered as part of the pool of general transferable skills (ASQ) 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. Decision on credit transfer to be made by examination committee.

Intended learning outcomes

Students have developed an improved scientific knowledge and have thus enhanced their specific qualifications. They have acquired additional expertise that will help them specialise in their field.

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

S (4)

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)

written examination (approx. 60 minutes)
creditable for bonus

Allocation of places

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Additional information

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Workload

150 h

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 (2015)
First state examination for the teaching degree Grundschule Didactics in Biology (Primary School) (2015)
First state examination for the teaching degree Realschule Biology (2015)
First state examination for the teaching degree Gymnasium Biology (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Biology (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Sonderpädagogik Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))

Module title			Abbreviation
Thesis in Biology (Mittelschulen)			07-MS-DF-HA-152-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**	
	undergraduate	--	

Contents

Students pursuing a teaching degree *Mittelschule* who have selected biology as their *Didaktikfach* (subject studied with a focus on teaching methodology) may write their *Hausarbeit* (thesis) for example in biology didactics. Within a given time frame, students will independently research and write on a research topic applying the necessary methods.

Intended learning outcomes

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.).

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

No courses assigned to module

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)

written thesis (30 to 50 pages)

Allocation of places

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Additional information

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Workload

300 h

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 Mittelschule Didactics in Biology (Middle School) (2015)
First state examination for the teaching degree Mittelschule Didactics in Biology (Middle School) (2020 (Prüfungsordnungsversion 2015))