

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

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

Method of assessment (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

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

Assessment in module component 07-DH-FDUM-1-121: Special Didactics in Biology: Teaching aids (Seminar)

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

Assessment in module component 07-DH-FDBIO2-2-092: Teaching Techniques and Experiments in Biology (Seminar)

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

Assessment in module component 07-DH-FWBIO2-3-092: Learning Places Outside the Classroom (Seminar)

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

Allocation of places

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Additional information

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Workload

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Teaching cycle

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

§ 36 (1) 7. Didaktik der Grundschule Biologie

§ 38 (1) 1. Didaktik der Hauptschule Biologie

§ 38 (1) 1. Didaktik der Mittelschule Biologie

Module appears in

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)