Subdivided Module Catalogue for the Subject

Didactics in Mathematics (Middle School)
as Didaktikfach
with the degree "Erste Staatsprüfung für das Lehramt für Sonderpädagogik"

Examination regulations version: 2015
Responsible: Institute of Mathematics
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)):

5-Oct-2015 (2015-188)

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

<table>
<thead>
<tr>
<th>Compulsory Courses (20 ECTS credits)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Module title</th>
<th>ECTS credits</th>
<th>Method of grading</th>
<th>page</th>
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</thead>
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<td>10-M-MM1-152-m01</td>
<td>Mathematics in German Mittelschule - Arithmetics</td>
<td>5</td>
<td>NUM</td>
<td>20</td>
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<tr>
<td>10-M-MM2-152-m01</td>
<td>Mathematics in German Mittelschule - Algebra</td>
<td>5</td>
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<tr>
<td>10-M-MM3-152-m01</td>
<td>Mathematics in German Mittelschule - Geometry</td>
<td>5</td>
<td>NUM</td>
<td>22</td>
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<tr>
<td>10-M-MM4-152-m01</td>
<td>Mathematics in German Mittelschule - Application-oriented Teaching and Stochastics</td>
<td>5</td>
<td>NUM</td>
<td>23</td>
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<table>
<thead>
<tr>
<th>Freier Bereich (general as well as subject-specific electives)</th>
</tr>
</thead>
<tbody>
<tr>
<td>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 &quot;Ergänzende Bestimmungen für den &quot;Freien Bereich&quot; im Rahmen des Studiums für ein Lehramt&quot;.</td>
</tr>
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<table>
<thead>
<tr>
<th>Extra Skills Teaching Mathematics at the German Mittelschule (Freier Bereich (general as well as subject-specific electives) – subject specific)</th>
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<tbody>
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<td>10-M-DVHB-152-m01</td>
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<td>10-M-VHBAri-152-m01</td>
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<tr>
<td>10-M-VHBSGeo-152-m01</td>
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<tr>
<td>10-M-VHBSsto-152-m01</td>
</tr>
<tr>
<td>10-M-VHBM10-152-m01</td>
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<tr>
<td>10-M-VHBDG-152-m01</td>
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<td>10-M-VHBDCA-152-m01</td>
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<td>10-M-VHBEx-152-m01</td>
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<td>10-M-VHBMa1-152-m01</td>
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<td>10-M-VHBMa2-152-m01</td>
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<td>10-M-DCMU-152-m01</td>
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<td>10-M-DVMS2-152-m01</td>
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<table>
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<tr>
<th>Paper (10 ECTS credits)</th>
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<tbody>
<tr>
<td>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.</td>
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<table>
<thead>
<tr>
<th>Abbreviation</th>
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<th>Method of grading</th>
<th>page</th>
</tr>
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<tbody>
<tr>
<td>10-M-for-152-m01</td>
<td>E-Learning and Blended Learning in Mathematical Teaching (virtual Course)</td>
<td>3</td>
<td>B/NB</td>
<td>4</td>
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</table>

LA Sonderpädagogik Didactics in Mathematics (Middle School) (2015)
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>E-Learning and Blended Learning in Mathematical Teaching (virtual Course)</td>
<td>10-M-DVHB-152-m01</td>
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<table>
<thead>
<tr>
<th>Module coordinator</th>
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<tbody>
<tr>
<td>Dean of Studies Mathematik (Mathematics)</td>
<td>Institute of Mathematics</td>
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<thead>
<tr>
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<th>Module level</th>
<th>Other prerequisites</th>
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<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</tbody>
</table>

**Contents**

In a course offered by Virtuelle Hochschule Bayern (vhb), the student becomes acquainted with and reflects on techniques in e-learning and blended learning for teaching mathematics.

**Intended learning outcomes**

The student is acquainted with basic methods of e-learning and blended learning in teaching mathematics, as well as their potentials and limitations.

**Courses**

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

**Ü (2)**

Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

**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)

project (web-based, 15 to 20 hours)

Assessment offered: Once a year, winter semester

**Allocation of places**

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**Additional information**

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

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Basics in Arithmetics (virtual course)</td>
<td>10-M-VHBAri-152-m01</td>
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</table>

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</table>

**Contents**

Basic topics on teaching arithmetics in school, e.g. divisibility theory, prime numbers, set theory.

**Intended learning outcomes**

The student learns basic topics in the teaching of arithmetics and the related mathematical backgrounds and proofs. He/She is acquainted with the employment of new technologies for teaching arithmetic in school.

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

Ü (2)
Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

**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)

project (web-based, 15 to 20 hours)
Assessment offered: Once a year, winter semester

**Allocation of places**

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**Additional information**

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

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Basics in School Geometry (virtual course)</td>
<td>10-M-VHBGeo-152-m01</td>
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<table>
<thead>
<tr>
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</table>

### Contents

Revision and consolidation of the fundamental topics in elementary geometry that are prerequisites for the subject-specific and didactic courses (in particular teaching degrees Grundschule, Hauptschule, Realschule) in geometry.

### Intended learning outcomes

The student has basic knowledge of school geometry, as required for the study of mathematics and its didactics. He/She is acquainted with the employment of new technologies for teaching geometry in school.

### Courses

<table>
<thead>
<tr>
<th>Type</th>
<th>Number of weekly contact hours</th>
<th>Language</th>
<th>Course type</th>
<th>Assessment offered</th>
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<tbody>
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<td>Ü (2)</td>
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<td></td>
<td>eLearning, mostly Virtuelle Hochschule Bayern (vhb)</td>
<td>Once a year, summer semester</td>
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### Method of assessment

Project (web-based, 15 to 20 hours)

### Allocation of places

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### Additional information

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### Referred to in LPO I

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
### Module title
Stochastics in Sekundarstufe I (virtual course)

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>10-M-VHSsto-152-m01</th>
</tr>
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</table>

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
2

### Method of grading
Only after succ. compl. of module(s)

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
--

### Contents
Revision and consolidation of the fundamental topics in stochastics that are prerequisites for the subject-specific and didactic courses in stochastics.

### Intended learning outcomes
The student has basic knowledge of stochastics, as required for the study of mathematics and its didactics. He/She is acquainted with the employment of new technologies for teaching stochastics in school.

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

| Ü (2) |
| Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb) |

### 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)

| project (web-based, 15 to 20 hours) |
| Assessment offered: Once a year, winter semester |

### Allocation of places
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### Additional information
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### Referred to in LPO I (examination regulations for teaching-degree programmes)

<p>| § 22 II Nr. 1 h |
| § 22 II Nr. 2 f |
| § 22 II Nr. 3 f |</p>
<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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</thead>
<tbody>
<tr>
<td>Mathematics in grade 10 (virtual course)</td>
<td>10-M-VHBM10-152-m01</td>
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<th>Module coordinator</th>
<th>Module offered by</th>
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<tbody>
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<td>Dean of Studies Mathematik (Mathematics)</td>
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<tr>
<th>Duration</th>
<th>Module level</th>
<th>Other prerequisites</th>
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</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</tr>
</tbody>
</table>

**Contents**

Basic topics on teaching mathematics in tenth grade in Hauptschule, Realschule and Gymnasium.

**Intended learning outcomes**

The student learns basic topics in the teaching of mathematics in tenth form at German Mittelschule and Realschule, as well as the related mathematical backgrounds and proofs. He/She is acquainted with the employment of new technologies for teaching mathematics in tenth form.

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

Ü (2)

Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

**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)

Project (web-based, 15 to 20 hours)

Assessment offered: Once a year, summer semester

**Allocation of places**

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**Additional information**

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

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
Didactics of Geometry (virtual course)  

Abbreviation: 10-M-VHBDG-152-m01

Module coordinator: 

Dean of Studies Mathematik (Mathematics)

Module offered by: 

Institute of Mathematics

ECTS: 2

Method of grading: (not) successfully completed

Duration: 1 semester

Module level: undergraduate

Other prerequisites: --

Contents

Geometry didactics is about learning and teaching geometry. This course focuses on topics which are central and important for all of geometry and mathematics, namely proving and problem solving. It also addresses topics which are usually discussed only briefly or not at all in university lectures and in the literature. Among these are chapters on space geometry, trigonometry and similarity geometry.

Intended learning outcomes

The students are acquainted with the subject-specific contents of school geometry, and are able to structure the notions and methods within a conceptual map. They know strategies of short, middle and long term development of understanding of the central concepts of geometry in teaching mathematics. They are able to develop and justify learning units and learning sequences for the important topics in school geometry independently. They are able to assess and value the importance of digital technology with respect to todays and future design of instruction. They know various fields of application of geometric concepts, and are able to perform modelling (in the sense of modelling cycles) independently.

Courses

(U (2))

Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

Method of assessment

(project (web-based, 15 to 20 hours)
Assessment offered: Once a year, summer semester)

Allocation of places

Additional information

Referred to in LPO I

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
### Module title

**Didactics of Algebra (virtual course)**

### Abbreviation

10-M-VHBDA-152-m01

### Module coordinator

Dean of Studies Mathematik (Mathematics)

### Module offered by

Institute of Mathematics

### ECTS

2

### Method of grading

Only after succ. compl. of module(s)

### (not) successfully completed

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### Duration

1 semester

### Module level

undergraduate

### Other prerequisites

--

### Contents

Algebra didactics is about learning and teaching algebra. This course focuses on the central and important topics in school algebra: extensions of number domains, variables and terms, equations and functions.

### Intended learning outcomes

The students are acquainted with the subject-specific contents of school algebra, and are able to structure the notions and methods within a conceptual map. They know strategies of short, middle and long term development of understanding of the central concepts of algebra in teaching mathematics. They are able to develop and justify learning units and learning sequences for the important topics in school algebra independently. They are able to assess and value the importance of digital technology with respect to today’s and future design of instruction. They know various fields of application of algebraic concepts, and are able to perform modelling (in the sense of modelling cycles) independently.

### Courses

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

| Ü (2) |

| Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb) |

### 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)

| project (web-based, 15 to 20 hours) |

Assessment offered: Once a year, winter semester

### Allocation of places

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### Additional information

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

§ 22 II Nr. 1 h), § 22 II Nr. 2 f)

§ 22 II Nr. 3 f)
Module title
Exam Tutorial Didactics of Mathematics (virtual course)

Abbreviation
10-M-VHBei-152-m01

Module coordinator
Dean of Studies Mathematik (Mathematics)

Module offered by
Institute of Mathematics

ECTS
2

Method of grading
Only after succ. compl. of module(s)

Duration
1 semester

Module level
undergraduate

Other prerequisites
--

Contents
Revision of basics (definitions of mathematical notions, formulation and proving of theorems) in preparation for the Erstes Staatsexamen für Lehramt Gymnasium (first state examination for teaching at a Gymnasium) as well as basic guidelines for answering exam questions (with a special focus on the state examination in Bavaria).

Intended learning outcomes
The student learns about the structure of the state exams and different methods for solving the exam problems.

Courses (type, number of weekly contact hours, language — if other than German)
Ü (2)

Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

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)
project (web-based, 15 to 20 hours)

Assessment offered: Once a year, winter semester

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 22 II Nr. 1 h
§ 22 II Nr. 2 f
§ 22 II Nr. 3 f
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<td>Mathematics 1 (virtual course)</td>
<td>10-M-VHBMa1-152-m01</td>
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**Module coordinator**
Dean of Studies Mathematik (Mathematics)

**Module offered by**
Institute of Mathematics

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</table>

**Contents**
Discussion of basic topics on teaching mathematics in a Gymnasium, in particular verbal and subject-specific fundamentals concerning the organisation of classes.

**Intended learning outcomes**
The student is able to discuss selected topics and questions on teaching mathematics at German Gymnasium, considering both subject-related and methodical aspects.

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

<table>
<thead>
<tr>
<th>Ü (2)</th>
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<tbody>
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**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)

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<td>Assessment offered: Every two years, winter semester</td>
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**Allocation of places**
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**Additional information**
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**Referred to in LPO I** (examination regulations for teaching-degree programmes)

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)
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<th><strong>Other prerequisites</strong></th>
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</thead>
<tbody>
<tr>
<td>1 semester</td>
<td>undergraduate</td>
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</table>

**Contents**

Discussion of central topics on teaching mathematics in a Gymnasium, in particular didactic analyses and possibilities of implementation in the classroom.

**Intended learning outcomes**

The student is able to discuss and analyse selected topics and questions on teaching mathematics at German Gymnasium from a didactical point of view.

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

- Ü (2)
  - Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)

**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)

- project (web-based, 15 to 20 hours)
  - Assessment offered: Every two years, summer semester

**Allocation of places**

--

**Additional information**

--

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

- § 22 II Nr. 1 h)
- § 22 II Nr. 2 f)
- § 22 II Nr. 3 f)
### Module Catalogue for the Subject
Didactics in Mathematics (Middle School)
LA Sonderpädagogik

<table>
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<th>Module title</th>
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<td>Computers in Mathematical Teaching</td>
<td>10-M-DCMU-152-m01</td>
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### Contents
Discussion of possible ways to use computers in teaching mathematics as well as discussion of common computer tools.

### Intended learning outcomes
The student is acquainted with basic possibilities for the employment of computers in the teaching of mathematics, as well as with the potential and limitations of computer tools.

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

- V (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)

- project (10 to 15 pages)
- Assessment offered: Every two years, winter semester

### Allocation of places
--

### Additional information
--

### Referred to in LPO 1 (examination regulations for teaching-degree programmes)

- § 22 II Nr. 2 f
- § 22 II Nr. 1 h
- § 22 II Nr. 3 f
### Module Title
Didactics of Elementary School Mathematics for Teachers at German Mittelschule and Special Education

### Abbreviation
10-M-DGMS-152-m01

### Module Coordinator
Dean of Studies Mathematik (Mathematics)

### Module Offered by
Institute of Mathematics

### ECTS
2

### Method of Grading
Only after successfully completed module(s)

### Duration
1 semester

### Module Level
Undergraduate

### Other Prerequisites
--

### Contents
Discussion of selected methods for teaching mathematics in Mittelschule.

### Intended Learning Outcomes
The student is acquainted with different methods of teaching mathematics at German Mittelschule, can assess their respective advantages and disadvantages, and can select and employ an appropriate method depending on the situation and the subject.

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

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<th>Type</th>
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<th>Language</th>
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### 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) talk (approx. 45 minutes) or
- b) term paper (5 to 10 pages) or
- c) project (10 to 15 pages)

Assessment offered: Every two years, winter semester

### Allocation of Places
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### Additional Information
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### Referred to in LPO I (examination regulations for teaching-degree programmes)

- § 22 II Nr. 2 f
- § 22 II Nr. 1 h
<table>
<thead>
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**Contents**
Discussion of selected methods for teaching mathematics in Mittelschule.

**Intended learning outcomes**
The student is acquainted with different methods of teaching mathematics at German Mittelschule, can assess their respective advantages and disadvantages, and can select and employ an appropriate method depending on the situation and the subject.

**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) talk (approx. 45 minutes) or b) term paper (5 to 10 pages) or c) project (10 to 15 pages)
Assessment offered: Every two years, winter semester

**Allocation of places**
--

**Additional information**
--

**Referred to in LPO I** (examination regulations for teaching-degree programmes)
§ 22 II Nr. 1 h)
Module title
Methodology of Teaching in Mathematics 2 (German Mittelschule)

Abbreviation
10-M-DMMS2-152-m01

Module coordinator
Dean of Studies Mathematik (Mathematics)

Module offered by
Institute of Mathematics

ECTS
3

Method of grading
Only after succ. compl. of module(s)

Duration
1 semester

Module level
undergraduate

Other prerequisites
--

Contents
Discussion of selected methods for teaching mathematics in Mittelschule.

Intended learning outcomes
The student is acquainted with different methods of teaching mathematics at German Mittelschule, can assess their respective advantages and disadvantages, and can select and employ an appropriate method depending on the situation and the subject.

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) talk (approx. 45 minutes) or b) term paper (5 to 10 pages) or c) project (10 to 15 pages)
Assessment offered: Every two years, summer semester

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
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**Contents**

Discussion of topics in teaching mathematics in Mittelschule taking into account different aspects, in particular mathematical foundations, didactic analyses, contemporary discussions in mathematics didactics as well as possible approaches in the classroom.

**Intended learning outcomes**

The student is able to discuss central topics and issues on teaching mathematics in German Mittelschule, considering subject-specific, didactical and methodical aspects.

**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) talk (approx. 45 minutes) or b) term paper (5 to 10 pages) or c) project (10 to 15 pages)

Assessment offered: Every two years, winter semester

**Allocation of places**

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**Additional information**

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

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### Contents

Discussion of topics in teaching mathematics in Mittelschule taking into account different aspects, in particular mathematical foundations, didactic analyses, contemporary discussions in mathematics didactics as well as possible approaches in the classroom.

### Intended learning outcomes

The student is able to discuss central topics and issues on teaching mathematics in German Mittelschule, considering subject-specific, didactical and methodical aspects.

### 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) talk (approx. 45 minutes) or b) term paper (5 to 10 pages) or c) project (10 to 15 pages)

Assessment offered: Every two years, summer semester

### Allocation of places

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### Additional information

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

§ 22 II Nr. 1 h)
Module title
Mathematics in German Mittelschule - Arithmetics

Abbreviation
10-M-MM1-152-m01

Module coordinator
Dean of Studies Mathematik (Mathematics)

Module offered by
Institute of Mathematics

ECTS
5

Method of grading
numerical grade

Only after succ. compl. of module(s)
--

Duration
1 semester

Module level
undergraduate

Other prerequisites
--

Contents
Discussion of basic topics in teaching arithmetics in Mittelschule taking into account didactic aspects as well as possibilities of implementation in the classroom, also including modern technologies.

Intended learning outcomes
The student is acquainted with basic mathematical ways of thinking and working techniques in the fields of arithmetic. He/She knows about criteria to assess media and their employment in teaching mathematics, detects common difficulties and typical misconceptions of pupils and knows about adequate countermeasures and support. He/She knows teaching and learning strategies and can assess them.

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 to 90 minutes).

If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).

Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)

Allocation of places
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Additional information
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Referred to in LPO I (examination regulations for teaching-degree programmes)
§ 38 I Nr. 1
### Module title
Mathematics in German Mittelschule - Algebra

### Abbreviation
10-M-MM2-152-m01

### Module coordinator
Dean of Studies Mathematik (Mathematics)

### Module offered by
Institute of Mathematics

### ECTS
5

### Method of grading
Numerical grade

### Only after succ. compl. of module(s)
--

### Duration
1 semester

### Module level
Undergraduate

### Other prerequisites
--

### Contents
Discussion of basic topics in teaching algebra in Mittelschule taking into account didactic aspects as well as possibilities of implementation in the classroom, also including modern technologies.

### Intended learning outcomes
The student is acquainted with basic mathematical ways of thinking and working techniques in algebra. He/She knows about criteria to assess media and their employment in teaching mathematics, detects common difficulties and typical misconceptions of pupils and knows about adequate countermeasures and support. He/She knows teaching and learning strategies and can assess them.

### 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 to 90 minutes).

If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).

Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)

### Allocation of places
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### Additional information
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### Referred to in LPO I (examination regulations for teaching-degree programmes)
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</table>

**Contents**

Discussion of basic topics in teaching geometry in Mittelschule taking into account didactic aspects as well as possibilities of implementation in the classroom, also including modern technologies.

**Intended learning outcomes**

The student is acquainted with basic mathematical ways of thinking and working techniques in the fields of geometry. He/She knows about criteria to assess media and their employment in teaching mathematics, detects common difficulties and typical misconceptions of pupils and knows about adequate countermeasures and support. He/She knows teaching and learning strategies and can assess them.

**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 to 90 minutes).
- If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).

Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)

**Allocation of places**

--

**Additional information**

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

§ 38 I Nr. 1
## Module Catalogue for the Subject

**Didactics in Mathematics (Middle School)**

### LA Sonderpädagogik

#### Module title
- Mathematics in German Mittelschule - Application-oriented Teaching and Stochastics

#### Abbreviation
- 10-M-MM4-152-m01

#### Module coordinator
- Dean of Studies Mathematik (Mathematics)

#### Module offered by
- Institute of Mathematics

#### ECTS
- 5

##### Method of grading
- Only after succ. compl. of module(s)
- numerical grade
- --

#### Duration
- 1 semester

##### Module level
- undergraduate
- --

##### Other prerequisites
- --

### Contents

Discussion of basic topics in teaching stochastics and application-oriented mathematics in Mittelschule taking into account didactic aspects as well as possibilities of implementation in the classroom, also including modern technologies.

### Intended learning outcomes

The student is acquainted with basic mathematical ways of thinking and working techniques in the fields of application-oriented mathematics and stochastics. He/She knows about criteria to assess media and their employment in teaching mathematics, detects common difficulties and typical misconceptions of pupils and knows about adequate countermeasures and support. He/She knows teaching and learning strategies and can assess them.

### Courses

**Course 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 to 90 minutes).
- If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).
- Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)

### Allocation of places
- --

### Additional information
- --

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

- § 38 I Nr. 1