Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject
Mathematics as Unterrichtsfach
with the degree "Erste Staatsprüfung für das Lehramt an Grundschulen"

Responsible: Institute of Mathematics   Examination regulations version: 2009

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 for the modules in this SFB:	Unless otherwise stated, courses and assessments will be held in German, assessments will be offered every semester and modules are not creditable for bonus.
Information on assessment procedures:	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 a module comprise more than one graded assessment, all assessments will be equally weighted, unless otherwise stated below.
	Should the assessment comprise several individual assessments, successful completion of the module will require successful completion of all individual assessments.

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

LASPO2009

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

23-May-2012 (2012-82)

25-Sep-2014 (2014-65)

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.

Every module will be described using the following form:

Abbreviation	**Module title**						
	ECTS		Duration	(in semesters)	Method of grading		Module level	
	Courses		To be specified in the form X (y) with course type X abbreviated as specified above and number of weekly contact hours y				
	Method of assessment						
	Only after successful completion of	if applicable					
	Other prerequisites	if applicable					
	Participants and allocation of places	if applicable					
	Additional information	if applicable					
	Referred to in LPO I	if applicable (examination regulations for teaching-degree programmes)					

Scientific Discipline (54 ECTS credits)							

Compulsory Courses (54 ECTS credits)							

10-M-EL1-092-m01	**Elementary Mathematics 1 (German Grundschule/Hauptschule/Realschule)**						
	ECTS	7	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment	written examination (approx. 120 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 15 minutes) or an oral examination in groups (groups of 2: approx. 20 minutes, groups of 3: approx. 30 minutes) or by a written and/or multi-media portfolio (as announced)					
	other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.					
	Referred to in LPO I	§ 51 (1) 3. Mathematik Elementare Zahlentheorie, Elementare Stochastik, Elementargeometrie					

10-M-EL2-092-m01	**Elementary Mathematics 2 (German Grundschule/Hauptschule/Realschule)**					
	ECTS	11	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

	Courses	This module comprises 3 module components. Information on courses will be listed separately for each module component. • 10-M-EL2-P-092: M (no information on SWS (weekly contact hours) and course language available) • 10-M-EL2-1-092: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-EL2-2-092: V + Ü (no information on SWS (weekly contact hours) and course language available)
	Method of assessment	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 10-M-EL2-P-092:** Elementary Mathematics 2 (German Grundschule/Hauptschule/Real-schule) • 1 ECTS, Method of grading: numerical grade • written examination (approx. 90 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2: approx. 30 minutes, groups of 3: approx. 45 minutes) or by a written and/or multi-media portfolio (as announced) • Only after successful completion of module components: Successful completion of the two module components 10-M-EL2-1 and 10-M-EL2-2 is a prerequisite for participation in module component 10-M-EL2-P. **Assessment in module component 10-M-EL2-1-092:** Elementary Mathematics 2: Geometry (German Grundschule/Hauptschu-le/Realschule) Elementary Mathematics 2: Geometry (German Grundschule/Hauptschule/Realschule) • 6 ECTS, Method of grading: (not) successfully completed • exercises: At the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed. **Assessment in module component 10-M-EL2-2-092:** Elementary Mathematics 2: Stochastics (German Grundschule/Haupt-schule/Realschule) Elementary Mathematics 2: Stochastics (German Grundschule/Hauptschule/Realschule) • 4 ECTS, Method of grading: (not) successfully completed • exercises: At the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed.
	Referred to in LPO I	§ 51 (1) 3. Mathematik Elementare Zahlentheorie, Elementare Stochastik, Elementargeometrie

10-M-M1GHR-092-m01	**Basics in Mathematics (German Grundschule/Hauptschule/Gymnasium)**						
	ECTS	15	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module comprises 3 module components. Information on courses will be listed separately for each module component. • 10-M-M1GHR-P-092: M (no information on SWS (weekly contact hours) and course language available) • 10-M-M1GHR-1-092: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-M1GHR-2-092: V + Ü (no information on SWS (weekly contact hours) and course language available)
Method of assessment	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 10-M-M1GHR-P-092:** Basics in Mathematics (German Grundschule/Hauptschule/Gymnasium) • 1 ECTS, Method of grading: numerical grade • written examination (approx. 120 minutes); if announced by the lecturer, the written examination can be replaced by an oral examination of one candidate each (approx. 30 minutes) or an oral examination in groups (groups of 2: approx. 45 minutes, groups of 3: approx. 60 minutes) or by a written and/or multi-media portfolio (as announced) • Only after successful completion of module components: Successful completion of the two module components 10-M-M1GHR-1 and 10-M-M1GHR-2 is a prerequisite for participation in module component 10-M-M1GHR-P. **Assessment in module component 10-M-M1GHR-1-092:** Basics in Mathematics - Linear Algebra (German Grundschule/Hauptschule/Gymnasium) Basics in Mathematics - Linear Algebra (German Grundschule/Hauptschule/Gymnasium) • 8 ECTS, Method of grading: (not) successfully completed • exercises: At the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed. **Assessment in module component 10-M-M1GHR-2-092:** Basics in Mathematics - Analysis in one Variable (German Grundschule/Hauptschule/Gymnasium) Basics in Mathematics - Analysis in one Variable (German Grundschule/Hauptschule/Gymnasium) • 6 ECTS, Method of grading: (not) successfully completed • exercises: At the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed.
Referred to in LPO I	§ 51 (1) 1. Mathematik Differential- und Integralrechnung, Gewöhnliche Differentialgleichungen § 51 (1) 2. Mathematik Lineare Algebra und Analytische Geometrie

10-M-M2GHR-092-m01	**Advances in Mathematics (German Grundschule/Hauptschule/Realschule)**						
	ECTS	18	Duration	3 semester	Method of grading	numerical grade	Modul level	undergraduate

Courses	This module has 4 components; information on courses listed separately for each component. • 10-M-M2GHR-P-092: M (no information on language and number of weekly contact hours available) • 10-M-M2GHR-1-092, 10-M-M2GHR-2-092, and 10-M-M2GHR-3-092: V + Ü (no information on number of weekly contact hours available)
Method of assessment	This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole. **Assessment in module component 10-M-M2GHR-P-092:** Aufbau Mathematik - Prüfung (Grund-, Haupt- und Realschule) (Assessment Advanced Mathematics, Grundschule, Hauptschule and Realschule) • 1 ECTS credit, numerical grading • written examination (approx. 120 minutes); if announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 30 minutes) or an oral examination in groups (groups of 2: approx. 45 minutes, groups of 3: approx. 60 minutes) or by a written and/or multi-media portfolio (as announced). • Only after successful completion of module components: Module component 10-M-M2GHR-P can only be taken by students who successfully completed the three module components 10-M-M2GHR-1, 10-M-M2GHR-2 and 10-M-M2GHR-3. **Assessment in module component 10-M-M2GHR-1-092:** Aufbau Mathematik - Analysis in mehreren Variablen (Grund- , Haupt- und Realschule) (Advanced Mathematics - Analysis in Several Variables, Grundschule, Hauptschule and Realschule), **in module component 10-M-M2GHR-3-092:** Aufbau Mathematik - Differentialgleichungen (Grund-, Haupt- und Realschule) (Advanced Mathematics - Differential Equations, Grundschule, Hauptschule and Realschule), and **in module component 10-M-M2GHR-3-092:** Aufbau Mathematik - Differentialgleichungen (Grund-, Haupt- und Realschule) (Advanced Mathematics - Differential Equations, Grundschule, Hauptschule and Realschule) **:** • 5 ECTS credits (10-M-M2GHR-2-092: 7 ECTS credits), pass / fail • exercises: at the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed.
Referred to in LPO I	§ 51 (1) 1. Mathematik Differential- und Integralrechnung, Gewöhnliche Differentialgleichungen § 51 (1) 2. Mathematik Lineare Algebra und Analytische Geometrie

10-M-M3GHR-092-m01	**Revision Course in Mathematics (German Grundschule/Hauptschule/Gymnasium)**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate

Courses	Ü (no information on SWS (weekly contact hours) and course language available)
Method of assessment	talk (approx. 45 minutes)
other prerequisites	Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew.

Teaching (12 ECTS credits)							
10-M-DGGS-092-m01	**Didactics of Mathematics (German Grundschule)**						
	ECTS	10	Duration	3 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	This module has 4 components; information on courses listed separately for each component. • 10-M-DGGS-P-092: M (no information on language and number of weekly contact hours available) • 10-M-DGGS-1-092, and 10-M-DGGS-2-092: V + Ü (no information on language and number of weekly contact hours available) • 10-M-DGGS-3-092: V (no information on language and number of weekly contact hours available)					
	Method of assessment	This module has the following 4 assessment components. Unless stated otherwise, students must pass all of these assessment components to pass the module as a whole. **Assessment in module component 10-M-DGGS-P-092:** Didaktik der Mathematik - Prüfung (Grundschule) (Assessment Mathematics Didactics, Grundschule) • 1 ECTS credit, numerical grading • written examination (approx. 120 minutes); if announced by the lecturer, the written examination may be replaced by an oral examination of one candidate each (approx. 30 minutes) or an oral examination in groups (groups of 2: approx. 45 minutes, groups of 3: approx. 60 minutes) or by a written and/or multi-media portfolio (as announced). • Only after successful completion of module components: Module component 10-M-DGGS-P can only be taken by students who successfully completed the three module components 10-M-DGGS-1, 10-M-DGGS-2 and 10-M-DGGS-3. **Assessment in module component 10-M-DGGS-1-092:** Didaktik der Mathematik - Arithmetik (Grundschule) (Mathematics Didactics - Arithmetic, Grundschule), **in module component 10-M-DGGS-2-092:** Didaktik der Mathematik - Geometrie (Grundschule) (Mathematics Didactics - Geometry, Grundschule) • 4 ECTS credits, pass / fail • exercises: at the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed. **Assessment in module component 10-M-DGGS-3-092:** Didaktik der Mathematik - Sachbezogener Mathematikuntericht (Grundschule) (Mathematics Didactics - Application of Mathematics, Grundschule) • 1 ECTS credit, pass / fail • exercises: at the beginning of the course, the lecturer will specify the type and scope of exercises to be successfully completed over the course of the semester for the module component to be considered successfully completed.					
	Referred to in LPO I	§ 51 (1) 4. Mathematik Fachdidaktik					
10-M-DVGS-092-m01	**Advanced Didactics of Mathematics (German Grundschule)**						
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment	a) talk (approx. 60 minutes) or b) assignment to be completed at home (approx. 50 to 60 hours)					
	Referred to in LPO I	§ 51 (1) 4. Mathematik Fachdidaktik					

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".

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

10-M-DAGS-092-m01	**Selected Topics in Didactics of Mathematics (German Grundschule)**						
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) talk (approx. 60 minutes) or b) project (approx. 5 to 15 pages) or c) portfolio (approx. 5 to 15 pages) Assessment offered: once a year, winter semester				
	Referred to in LPO I		§ 36 (1) 7. Didaktik der Grundschule Mathematik				
10-M-DMGS-092-m01	**Methodology of Teaching in Mathematics (German Grundschule)**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		S (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		a) talk (approx. 45 minutes) or b) project (approx. 5 to 15 pages) or c) portfolio (approx. 5 to 15 pages) Assessment offered: once a year, summer semester				
	Referred to in LPO I		§ 36 (1) 7. Didaktik der Grundschule Mathematik				
10-M-DV-HB-092-m01	**E-Learning and Blended Learning in Mathematics at school**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		web-based project assignments and tests (length/expenditure of time to be announced at the beginning of the course)				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. Courses offered online by Virtuelle Hochschule Bayern (vhb) in the field of mathematics are always incorporated into a module with an exercise. The respective modules can be identified by the word virtuell (online) added in brackets. Registration for the exercise must always be made via SB@Home at the beginning of the course. This registration for the exercise will be considered a declaration of will to seek admission to assessment. If the exercise was successfully completed, the lecturer will put the registration for assessment into effect at the end of the course.				

10-M-VHBA-ri-092-m01	**Basics in Arithmetics (virtual course)**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		web-based project assignments and tests (length/expenditure of time to be announced at the beginning of the course)				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. Courses offered online by Virtuelle Hochschule Bayern (vhb) in the field of mathematics are always incorporated into a module with an exercise. The respective modules can be identified by the word virtuell (online) added in brackets. Registration for the exercise must always be made via SB@Home at the beginning of the course. This registration for the exercise will be considered a declaration of will to seek admission to assessment. If the exercise was successfully completed, the lecturer will put the registration for assessment into effect at the end of the course.				
10-M-VHBGeo-092-m01	**Basics in School Geometry (virtual course)**						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ü (no information on SWS (weekly contact hours) and course language available)				
	Method of assessment		web-based project assignments and tests (length/expenditure of time to be announced at the beginning of the course)				
	other prerequisites		Certain prerequisites must be met to qualify for admission to assessment. The lecturer will inform students about the respective details at the beginning of the course. Registration for the course will be considered a declaration of will to seek admission to assessment. If students have obtained the qualification for admission to assessment over the course of the semester, the lecturer will put their registration for assessment into effect. Students who meet all prerequisites will be admitted to assessment in the current or in the subsequent semester. For assessment at a later date, students will have to obtain the qualification for admission to assessment anew. Courses offered online by Virtuelle Hochschule Bayern (vhb) in the field of mathematics are always incorporated into a module with an exercise. The respective modules can be identified by the word virtuell (online) added in brackets. Registration for the exercise must always be made via SB@Home at the beginning of the course. This registration for the exercise will be considered a declaration of will to seek admission to assessment. If the exercise was successfully completed, the lecturer will put the registration for assessment into effect at the end of the course.				

Thesis (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 Grundschule may write this thesis in the subject Didaktik der Grundschule (Didactics of Grundschule), in the subject they selected as Unterrichts-

fach (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.

10-M-HMGS-092-m01	**Thesis in Mathematics (teaching degree at German Grundschule)**						
	ECTS	10	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		no courses assigned				
	Method of assessment		written thesis (approx. 250 to 300 hours total) Language of assessment: German, exceptions in accordance with Section 29 Subsection 4 LPO I (examination regulations for teaching degree programmes)				
	Modules successfully completed		Where applicable, specific modules/module components as specified by supervisor.				
	Additional Information		Additional information on module duration: 1 to 2 semesters.				