

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Mathematics as Unterrichtsfach with the Degree

Responsible: Institute of Mathematics

Examination regulations version: 2015

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:

LASPO2015

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

5-Oct-2015 (2015-189)

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 (60 ECTS credits)							
Cumpulsory Courses (60 ECTS credits)							
10-M-ELZT-152-m01	Elementary Number Theory						
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (4) + Ü (2)					
	Method of assessment	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) and written exercises (approx. 12 exercise sheets, approx. 3 exercises per sheet).					
	Referred to in LPO I	§ 51 I Nr. 3					
10-M-ELST-152-m01	Elementary Stochastics						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (3) + Ü (1)					
	Method of assessment	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) and written exercises (approx. 12 exercise sheets, approx. 3 exercises per sheet).					
	Referred to in LPO I	§ 51 I Nr. 3					
10-M-GRLA-152-m01	Basic Linear Analysis						
	ECTS	9	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (4) + Ü (2)					
	Method of assessment	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). creditable for bonus					
	Referred to in LPO I	§ 51 I Nr. 2					
10-M-GRAN-152-m01	Basic Analysis						
	ECTS	12	Duration	2 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (4) + Ü (2) + V (2) + Ü (2)					
	Method of assessment	Written examination (approx. 60 to 120 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). creditable for bonus					
	Referred to in LPO I	§ 51 I Nr. 1					

10-M-EL-GE-152-m01	Elementary Geometry							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2)						
	Method of assessment	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) and written exercises (approx. 12 exercise sheets, approx. 3 exercises per sheet).						
	Referred to in LPO I	§ 51 I Nr. 3						
10-M-AN-GE-152-m01	Analytic Geometry							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (4) + Ü (2)						
	Method of assessment	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). creditable for bonus						
	Referred to in LPO I	§ 51 I Nr. 2						
10-M-GRDG-152-m01	Basic Differential Equations							
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	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). creditable for bonus						
	Referred to in LPO I	§ 51 I Nr. 1						
10-M-M3GM-R-152-m01	Review Course Mathematics (German Grundschule/Mittelschule/Realschule)							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (4)						
	Method of assessment	a) talk (approx. 45 minutes) or b) project (10 to 15 pages)						
	Referred to in LPO I	§ 51 special branch of science without assignment						
10-M-M4R-152-m01	Consolidation of Mathematics (German Realschule)							
	ECTS	6	Duration	1 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	V (3) + Ü (2)						
	Method of assessment	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). creditable for bonus						
	Referred to in LPO I	§ 51 special branch of science without assignment						

Teaching (12 ECTS credits)							
Compulsory Courses (12 ECTS credits)							
10-M-DGMR1-152-m01	Didactics of Mathematics - Geometry (German Mittelschule/Realschule)						
	ECTS	5	Duration	1 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (2) + Ü (2)					
	Method of assessment	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). creditable for bonus					
Referred to in LPO I	§ 51 I Nr. 4						
10-M-DGMR2-152-m01	Didactics of Mathematics - Stochastics and Algebra (German Mittelschule/Realschule)						
	ECTS	7	Duration	2 semester	Method of grading	numerical grade	Modul level undergraduate
	Courses	V (2) + Ü (1) + V (2) + Ü (2)					
	Method of assessment	a) oral examination of one candidate each (approx. 30 minutes) or b) oral examination in groups (groups of 2, approx. 15 minutes per candidate) or c) written examination (60 to 120 minutes)					
Referred to in LPO I	§ 51 I Nr. 4						
Extra Skills (0-15 ECTS credits)							
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 -- for teaching degree students of all subjects: For additional courses that are open to all teaching degree students irrespective of their subject combinations (fächerübergreifendes Zusatzangebot), please refer to the respective Annex of the "Ergänzende Bestimmungen für den "Freien Bereich" im Rahmen des Studiums für ein Lehramt" (Supplementary Provisions on the Area "Freier Bereich" in Teaching-degree Programmes).							
Mathematics (Freier Bereich (general as well as subject-specific electives) -- subject specific)							
10-M-DV-HB-152-m01	E-Learning and Blended Learning in Mathematical Teaching (virtual Course)						
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)					
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester					
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						

10-M-VHBA-ri-152-m01	Basics in Arithmetics (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
10-M-VHBGeo-152-m01	Basics in School Geometry (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
10-M-VH-BSto-152-m01	Stochastics in Sekundarstufe I (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							
10-M-VHBM10-152-m01	Mathematics in grade 10 (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (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						
Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)							

10-M-GBM-152-m01	Basic Notions and Methods of Mathematical Reasoning							
	ECTS	2	Duration		Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (1) + Ü (1)						
	Method of assessment	Project (10 to 15 pages) Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f)						
10-M-VHBDG-152-m01	Didactics of Geometry (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (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						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-M-VHBDA-152-m01	Didactics of Algebra (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
	Referred to in LPO I	§ 22 II Nr. 1 h), § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-M-VH-BEx-152-m01	Exam Tutorial Didactics of Mathematics (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Once a year, winter semester						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						

10-M-VHBMa1-152-m01	Mathematics 1 (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Every two years, winter semester						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-M-VHBMa2-152-m01	Mathematics 2 (virtual course)							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	Ü (2) Course type: eLearning, mostly Virtuelle Hochschule Bayern (vhb)						
	Method of assessment	Project (web-based, 15 to 20 hours) Assessment offered: Every two years, summer semester						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-M-SCH-152-m01	School Mathematics from a Higher Perspective							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (2) + Ü (2)						
	Method of assessment	a) talk (approx. 45 minutes) or b) term paper (10 to 15 pages) or c) project (15 to 25 hours) Assessment offered: In the semester in which the course is offered and in the subsequent semester Language of assessment: German and/or English						
	Referred to in LPO I	§ 22 II Nr. 1 h) § 22 II Nr. 2 f) § 22 II Nr. 3 f)						
10-M-DCMU-152-m01	Computers in Mathematical Teaching							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (2)						
	Method of assessment	Project (10 to 15 pages) Assessment offered: Every two years, winter semester						
	Referred to in LPO I	§ 22 II Nr. 2 f) § 22 II Nr. 1 h) § 22 II Nr. 3 f)						

10-M-DMRS-152-m01	Methodology of Teaching in Mathematics (German Realschule)							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 2 f							
10-M-DGMS-152-m01	Didactics of Elementary School Mathematics for Teachers at German Mittelschule and Special Education							
	ECTS	2	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	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						
Referred to in LPO I	§ 22 II Nr. 2 f § 22 II Nr. 1 h							
10-M-PRM1-152-m01	Introduction to Hands-on Mathematics							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	S (2)						
	Method of assessment	Project (10 to 15 pages) Assessment offered: Every two years, winter semester						
Referred to in LPO I	§ 22 II Nr. 2 f § 22 II Nr. 3 f)							
10-M-PRM2-152-m01	Practical Course Hands-on Mathematics							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	P (2)						
	Method of assessment	Project: drawing up a project plan (5 to 10 pages) and practical implementation with pupils Assessment offered: Every two years, summer semester						
Referred to in LPO I	§ 22 II Nr. 2 f § 22 II Nr. 3 f)							
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.

10-M-HMRS-152-m01	Thesis in Mathematics (German Realschule)							
	ECTS	10	Duration		Method of grading	numerical grade	Modul level	undergraduate
	Courses	No courses assigned to module						
	Method of assessment	Hausarbeit (thesis) pursuant to Section 29 LPO I (examination regulations for teaching-degree programmes) (250 to 300 hours) Language of assessment: German; exceptions pursuant to Section 29 Subsection 4 LPO I (examination regulations for teaching-degree programmes)						
	Referred to in LPO I	§ 29						