Julius-Maximilians-
UNIVERSITÄT
WÜRZBURG

Annex SFB

Studienfachbeschreibung (subject description, SFB) for the subject Mathematics as vertieft studiertes Fach (studied with a focus on the scientific discipline)

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

Responsible: Institute of Mathematics

Examination regulations version: 2012

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)):

13-Mar-2013 (2012-172)

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 (92 ECTS credits)								
10-M-AGL-122-m01	**Algebra and Geometry for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	15	Duration	2 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-ALG-L-122, 10-M-DGE-L-122, and 10-M-PGE-L-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-AGL-P-122: M (no information on language and number of weekly contact hours available)					
	Method of assessment		This module has the following 4 assessment components. To pass the module as a whole students must pass the assessment components 10-M-ALG-L and 10-M-ALG-P and one of the remaining two assessment components. **Assessment in module component 10-M-ALG-L-122:** Einführung in die Algebra für Lehramt Gymnasium (Introduction to Algebra for Students Pursuing a Teaching Degree Gymnasium), **in module component 10-M-DGE-L-122:** Einführung in die Differentialgeometrie für Lehramt Gymnasium (Introduction to Differential Geometry for Students Pursuing a Teaching Degree Gymnasium), and **in module component 10-M-PGE-L-122:** Einführung in die Projektive Geometrie für Lehramt Gymnasium (Introduction to Projective Geometry for Students Pursuing a Teaching Degree Gymnasium)**:** • 6 ECTS credits, pass / fail • written examination (approx. 90 to 180 minutes). If announced by the lecturer, 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. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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. **Assessment in module component 10-M-AGL-P-122:** Prüfung Algebra und Geometrie für Lehramt Gymnasium (Assessment Algebra and Geometry for Students Pursuing a Teaching Degree Gymnasium) • 3 ECTS credits, numerical grading • oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in module 10-M-ALG-L and in the module component selected by students. • Language of assessment: German; English if agreed upon with examiner(s) • Only after successful completion of module components: Module component 10-M-AGL-P can only be taken by students who passed the written examination in one of the other three module components.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					
	Referred to in LPO I		§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie § 73 (1) 4. Mathematik Geometrie					

10-M-ANL-122-m01	**Analysis for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	18	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-ANA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-ANA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-ANL-P-122: M (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-ANA-1-122:** Analysis 1 Analysis 1 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-ANA-2-122:** Analysis 2 Analysis 2 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-ANL-P-122:** Examination in Analysis for Teaching Degree Mathematics (German Gymnasium) • 2 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-ANA-1 and 10-M-ANA-2 • Language of assessment: German, English if agreed upon with the examiner						
	other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.						
	Referred to in LPO I	§ 73 (1) 1. Mathematik Analysis						

10-M-ASL-122-m01	**Applied Mathematics and Stochastics for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	16	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses		This module has 5 components; information on courses listed separately for each component. • 10-M-DIM-L-122, 10-M-NUM1-L-122, 10-M-NUM2-L-122, and 10-M-STO-L-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-ASL-P-122: M (no information on language and number of weekly contact hours available)					
	Method of assessment		This module has the following 5 assessment components. To pass this module, students must pass the two assessment components 10-M-ASL-P and 10-M-STO-L- and one of the remaining three assessment components. **Assessment in module component 10-M-DIM-L-122:** Einführung in die Diskrete Mathematik für Lehramt Gymnasium (Introduction to Discrete Mathematics for Students Pursuing a Teaching Degree Gymnasium), **in module component 10-M-NUM1-L-122:** Numerische Mathematik 1 (Numerical Mathematics 1), **in module component 10-M-NUM2-L-122:** Numerische Mathematik 2 (Numerical Mathematics 2), **in module component 10-M-STO-L-122:** Stochastik für Lehramt Gymnasium (Stochastics for Students Pursuing a Teaching Degree Gymnasium) • 7 ECTS credits (10-M-STO-L-122: 6 ECTS credits), pass / fail • written examination (approx. 90 to 180 minutes). If announced by the lecturer, 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. 30 minutes). The module component will also be considered successfully completed if it is selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination is passed. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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. **Assessment in module component 10-M-ASL-P-122:** Prüfung Angewandte Mathematik und Stochastik für Lehramt Gymnasium (Assessment Applied Mathematics and Stochastics for Students Pursuing a Teaching Degree Gymnasium) • 3 ECTS credits, numerical grading • oral examination of one candidate each (approx. 30 minutes). Assessment will have reference to the topics covered in module 10-M-STO-L and in the module component selected by students. • Language of assessment: German; English if agreed upon with examiner(s) • Only after successful completion of module components: Module component 10-M-ASL-P can only be taken by students who passed the written examination in one of the other four module components.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					
	Referred to in LPO I		§ 73 (1) 3. Mathematik Stochastik § 73 (1) 5. Mathematik Angewandte Mathematik					

10-M-DFL-122-m01	**Differential Equations and Complex Analysis for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	14	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-DGL-L-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-FTH-L-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-DFL-P-122: M (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-DGL-L-122:** Ordinary Differential Equations for Teaching Degree Mathematics (German Gymnasium) Ordinary Differential Equations for Teaching Degree Mathematics (German Gymnasium) • 6 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-FTH-L-122:** Introduction to Complex Analysis for Teaching Degree Mathematics (German Gymnasium) Introduction to Complex Analysis for Teaching Degree Mathematics (German Gymnasium) • 6 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-DFL-P-122:** Examination in Differential Equa-tions and Complex Analysis for Teaching Degree Mathematics (German Gymnasium) • 2 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-DGL-L and 10-M-FTH-L • Language of assessment: German, English if agreed upon with the examiner • Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-DFL-P.						
	other prerequisites	By way of exception, additional prerequisites are listed in the section on assessments.						
	Referred to in LPO I	§ 73 (1) 1. Mathematik Analysis						

10-M-LNL-122-m01	**Linear Algebra for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	18	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-LNA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-LNA-2-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-LNL-P-122: M (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-LNA-1-122:** Linear Algebra 1 Linear Algebra 1 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-LNA-2-122:** Linear Algebra 2 Linear Algebra 2 • 8 ECTS, Method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-LNL-P-122:** Examination in Linear Algebra for Teaching Degree Mathematics (German Gymnasium) • 2 ECTS, Method of grading: numerical grade • oral examination of one candidate each (approx. 30 minutes); assessment will have reference to the contents of modules 10-M-LNA-1 and 10-M-LNA-2 • Language of assessment: German, English if agreed upon with the examiner • Only after successful completion of module components: Successful completion of the written examination in any one of the other two module components is a prerequisite for participation in module component 10-M-LNL-P.						

	Referred to in LPO I	§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie

10-M-MDA-122-mo1	**Introduction into mathematical thinking and working**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		This module comprises 2 module components. Information on courses will be listed separately for each module component. • 10-M-MDA-1-122: V + Ü (no information on SWS (weekly contact hours) and course language available) • 10-M-MDA-2-122: 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-MDA-1-122:** Basic Notions and Methods of Mathematical Reasoning Basic Notions and Methods of Mathematical Reasoning • 2 ECTS, Method of grading: (not) successfully completed • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • 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. **Assessment in module component 10-M-MDA-2-122:** Reasoning and Writing in Mathematics Reasoning and Writing in Mathematics • 2 ECTS, Method of grading: (not) successfully completed • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Language of assessment: German, English if agreed upon with the examiner • 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.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					
	Referred to in LPO I		§ 73 (1) 5. Mathematik Angewandte Mathematik					

10-M-VAL-122-m01	**Advanced Analysis for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if agreed upon with the examiner					
	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		§ 73 (1) 1. Mathematik Analysis					
10-M-ZTL-122-m01	**Introduction into Number Theory for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if agreed upon with the examiner					
	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		§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie					
Teaching (10 ECTS credits)								
10-M-D1GY-122-m01	**Didactics of Mathematics: Algebra (German Gymnasium)**							
	ECTS	3	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		a) written examination (approx. 60 to 180 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of up to 3 candidates (groups of 2: approx. 30 minutes, groups of 3: approx. 45 minutes) or d) written elaboration (approx. 5 to 10 pages) or e) project assignments (type and expenditure of time to be specified by the lecturer 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.					
	Referred to in LPO I		§ 73 (1) 6. Mathematik Didaktik					

10-M-DGYG-122-m01	**Didactics of Mathematics: Geometry (German Gymnasium)**							
	ECTS	3	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		a) written examination (approx. 60 to 180 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of up to 3 candidates (groups of 2: approx. 30 minutes, groups of 3: approx. 45 minutes) or d) written elaboration (approx. 5 to 10 pages) or e) project assignments (type and expenditure of time to be specified by the lecturer 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.					
	Referred to in LPO I		§ 73 (1) 6. Mathematik Didaktik					
10-M-DG-YA-122-m01	**Didactics of Mathematics: Analysis (German Gymnasium)**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		a) written examination (approx. 60 to 180 minutes) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups of up to 3 candidates (groups of 2: approx. 30 minutes, groups of 3: approx. 45 minutes) or d) written elaboration (approx. 5 to 10 pages) or e) project assignments (type and expenditure of time to be specified by the lecturer 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.					
	Referred to in LPO I		§ 73 (1) 6. Mathematik Didaktik					

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-D3GY-092-m01	**Didactics of Mathematics: Analytic Geometry/Stochastics (German Gymnasium)**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	a) written examination (approx. 60 minutes) or b) oral examination of one candidate each (approx. 15 minutes) or c) oral examination in groups (groups of 3, approx. 30 minutes) or d) written elaboration (approx. 5 to 10 pages) or e) project (as specified at the beginning of the course) Assessment offered: every two years, summer semester						
10-M-DCMU-092-m01	**Computers in Mathematical Teaching**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	V (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	project (type and expenditure of time to be specified by the lecturer at the beginning of the course) Assessment offered: every two years, summer semester						
10-M-DV-GY-092-m01	**Advanced Didactics of Mathematics (German Gymnasium)**							
	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	talk (approx. 60 minutes) Assessment offered: once a year, summer semester						
10-M-PRM-122-m01	**Hands-on Mathematics**							
	ECTS	6	Duration	2 semester	Method of grading	numerical grade	Modul level	undergraduate
	Courses	P + S (no information on SWS (weekly contact hours) and course language available)						
	Method of assessment	project and implementation thereof: drawing up a project plan (approx. 10 pages) and practical implementation with pupils (type and expenditure of time to be specified by the lecturer at the beginning of the course)						
10-M-PRA-122-m01	**Hands-on Seminar Mathematics**							
	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	project: drawing up a project plan (approx. 10 pages)						

10-M-MKG-122-mo1	**Mathematics in Culture and Society**							
	ECTS	8	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		This module has 4 components; information on courses listed separately for each component. • 10-M-GES-1-122, 10-M-MSC-1-122, and 10-M-SCH-1-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-PRO-1-122: S (no information on language and number of weekly contact hours available)					
	Method of assessment		This module has the following 4 assessment components. To pass the module as a whole students must pass two of the four assessment components. **Assessment in module component 10-M-GES-1-122:** Ausgewählte Kapitel aus der Geschichte der Mathematik (Selected Topics from the History of Mathematics), **in module component 10-M-MSC-1-122:** Mathematisches Schreiben (Mathematical Writing), and **in module component 10-M-SCH-1-122:** Schulmathematik vom höheren Standpunkt (School Mathematics from a Higher Perspective) **:** • 4 ECTS credits, pass / fail • project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) • Assessment will be offered in the semester in which the course is offered and in the subsequent semester. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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. **Assessment in module component 10-M-PRO-1-122:** Proseminar Mathematik (Proseminar Mathematics) • 4 ECTS credits, pass / fail • talk (approx. 60 to 180 minutes) • Assessment will be offered in the semester in which the course is offered and in the subsequent semester. • Language of assessment: German; English if agreed upon with examiner(s) • Additional prerequisites: To qualify for admission to assessment, students must meet certain prerequisites. 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.					
	other prerequisites		By way of exception, additional prerequisites are listed in the section on assessments.					
	Additional Information		Additional information on module duration: 1 to 2 semesters.					

10-M-SCH-122-m01	**School Mathematics from a Higher Perspective**							
	ECTS	4	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		project assignments (type and expenditure of time to be specified by the lecturer at the beginning of the course) Assessment offered: in the semester in which the course is offered and in the subsequent semester Language of assessment: German, English if agreed upon with the examiner					
	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.					
	Additional Information		Additional information on module duration: 1 to 2 semesters.					
10-M-SEM-122-m01	**Seminar Mathematics**							
	ECTS	5	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		talk (approx. 60 to 180 minutes) Language of assessment: German, English if agreed upon with the examiner					
	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.					
10-M-COM-122-m01	**Computational Mathematics**							
	ECTS	4	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		V + Ü (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if agreed upon with the examiner					
	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.					

10-M-PRG-122-m01	**Programming course for students of Mathematics and other subjects**							
	ECTS	3	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		P (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		project in the form of programming exercises (type and expenditure of time to be specified by the lecturer at the beginning of the course) Language of assessment: German, English if agreed upon with the examiner					
	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.					

10-M-ELG-122-m01	**Selected Topics from Mathematics for Teaching Degree Mathematics (German Gymnasium)**							
	ECTS	8	Duration	2 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses	This module has 3 components; information on courses listed separately for each component. • 10-M-GAN-1-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-FAN-1-122: V + Ü (no information on language and number of weekly contact hours available) • 10-M-ORS-1-122: V + Ü (no information on language and number of weekly contact hours available)						
	Method of assessment	This module has the following 3 assessment components. To pass the module as a whole students must pass one of the three assessment components. **Assessment component to module component 10-M-GAN-1-122:** Geometrische Analysis • 8 ECTS credits, method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: English, German if agreed upon with the examiner • Other prerequisites: Admission prerequisite to assessment: successful completion of approx. 50% of exercises. 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. **Assessment component to module component 10-M-FAN-1-122:** Einführung in die Funktionalanalysis • 8 ECTS credits, method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: English, German if agreed upon with the examiner • Other prerequisites: Admission prerequisite to assessment: successful completion of approx. 50% of exercises. 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. **Assessment component to module component 10-M-ORS-1-122:** Operations Research • 8 ECTS credits, method of grading: (not) successfully completed • written examination (approx. 90 to 180 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). Module will also be considered successfully completed if the module component was selected as subject of the oral examination covering several modules (separate module component for assessment purposes (Prüfungsteilmodul)) and this examination was passed. • Language of assessment: English, German if agreed upon with the examiner • Other prerequisites: Admission prerequisite to assessment: successful completion of approx. 50% of exercises. 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							

10-M-Tu-Ko-092-m01	**Exercise tutor or proof-reading in Mathematics**							
	ECTS	5	Duration	1 semester	Method of grading	(not) successfully completed	Modul level	undergraduate
	Courses		Ä (no information on SWS (weekly contact hours) and course language available)					
	Method of assessment		tutoring and correcting activities to be assessed by supervising lecturers or exercise supervisors as specified by supervisors at the beginning of the course					
	other prerequisites		Special qualification required; please direct application to teaching coordinator Mathematik (Mathematics), he/she will select participants.					
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-VHBMa1-122-m01	**Mathematics 1 (virtual course)**							
	ECTS	2	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-VHBMa2-122-m01	**Mathematics 2 (virtual course)**							
	ECTS	2	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-VHBBr-122-m01	**Start-up Tutorial Mathematics 1 (virtual course)**							
	ECTS	2	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-VH-BEx-122-m01	**Exam Tutorial Didactics of Mathematics (virtual course)**							
	ECTS	2	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-122-m01	**Basics in Arithmetics (virtual course)**							
	ECTS	2	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-122-m01	**Basics in School Geometry (virtual course)**							
	ECTS	2	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-VH-BSto-122-m01	**Stochastics in Sekundarstufe I (virtual course)**							
	ECTS	2	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-VHBCom-122-m01	**Computer and Mathematics (virtual course)**							
	ECTS	2	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-VHBM10-122-m01	**Mathematics in Class 10 (virtual course)**							
	ECTS	2	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 Gymnasium may write this thesis in one of the subjects they selected as vertieft studiertes Fach (subject studied with a focus on the scientific dis-

cipline) 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-HM-GY-092-m01	**Thesis in Mathematics (teaching degree at German Gymnasium)**							
	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.					