

Module title		Abbreviation
Algebra and Geometry for Teaching Degree Mathematics (German Gymnasium)		10-M-AGL-122-m01
Module coordinator		Module offered by
Dean of Studies Mathematik (Mathematics)		Institute of Mathematics
ECTS	Method of grading	Only after succ. compl. of module(s)
15	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	undergraduate	By way of exception, additional prerequisites are listed in the section on assessments.
Contents		
Introduction to algebra and a topic in geometry (differential geometry or projective geometry): basic algebraic structures (groups, rings, fields); axiomatic introduction of projective spaces, coordinates, fundamental theorems, relations to linear algebra and algebra, curves and hypersurfaces in Euclidean spaces, curvature.		
Intended learning outcomes		
The student is acquainted with the fundamental concepts and methods in algebra and a field of geometry. He/She is able to relate these concepts with one another, and realises the advantages of thinking across the borders of different branches in mathematics.		
Courses (type, number of weekly contact hours, language – if other than German)		
This module has 4 components; information on courses listed separately for each component. <ul style="list-style-type: none"> • 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 (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
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.		
<p>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):</p> <ul style="list-style-type: none"> • 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. <p>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)</p> <ul style="list-style-type: none"> • 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.

Allocation of places

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Additional information

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Workload

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Teaching cycle

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

§ 73 (1) 2. Mathematik Lineare Algebra, Algebra und Elemente der Zahlentheorie

§ 73 (1) 4. Mathematik Geometrie

Module appears in

First state examination for the teaching degree Gymnasium Mathematics (2012)