### Module title
Overview Algebra and Differential Geometry for Teaching Degree (German Gymnasium)

### Abbreviation
10-M-ADGL-Ü-152-m01

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

### Module offered by
Institute of Mathematics

### ECTS
10

### Method of grading
numerical grade --

### Duration
1 semester

### Module level
undergraduate --

### Other prerequisites

### Contents
Fundamental algebraic structures (groups, rings, fields), Galois theory; curves in Euclidean spaces, curvature, Frenet equations, local classification, submanifolds (hypersurfaces in particular) in Euclidean spaces, curvature of hypersurfaces, geodesics, isometries, main theorem on local surface theory, special classes of surfaces.

### Intended learning outcomes
The student is acquainted with fundamental concepts and methods in algebra and differential 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)

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### Method of assessment
(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

oral examination of one candidate each (20 to 40 minutes)
Assessment will have reference to the contents of modules 10-M-ALGL and 10-M-DGEL.
Language of assessment: German and/or English

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

§ 73 I Nr. 2 (5 ECTS credits)
§ 73 I Nr. 4 (5 ECTS credits)

### Module appears in
First state examination for the teaching degree Gymnasium Mathematics (2015)