## Module description

<table>
<thead>
<tr>
<th>Module title</th>
<th>Abbreviation</th>
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<tbody>
<tr>
<td>Field Arithmetics</td>
<td>10-M=VKARin-152-m01</td>
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</table>

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

### Module offered by
Institute of Mathematics

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>numerical grade</td>
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### Duration
1 semester

### Module level
graduate

### Other prerequisites
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### Contents
Combination of Galois theory, group theory and the theory of function fields with the aim of application in number theory, e.g. topics around Hilbert's irreducibility theorem, permutation polynomials (e.g. Calitz-Wan-conjecture) and the inverse problem in Galois theory.

### Intended learning outcomes
The student masters advanced algebraic concepts and methods. He/She gains the ability to work on contemporary research questions in algebra and can apply his/her skills to complex problems.

### Courses

<table>
<thead>
<tr>
<th>(type, number of weekly contact hours, language — if other than German)</th>
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<tbody>
<tr>
<td>V (4) + Ü (2)</td>
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Module taught in: English

### Method of assessment

<table>
<thead>
<tr>
<th>(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)</th>
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<tbody>
<tr>
<td>a) written examination (approx. 90 to 120 minutes, usually chosen) or b) oral examination of one candidate each (approx. 20 minutes) or c) oral examination in groups (groups of 2, 15 minutes per candidate)</td>
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Assessment offered: In the semester in which the course is offered and in the subsequent semester

Language of assessment: English

creditable for bonus

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

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### Module appears in

Master's degree (1 major) Mathematics International (2015)