### Module title
Preparatory Course Mathematics

### Abbreviation
11-P-VKM-152-m01

### Module coordinator
Managing Directors of the Institute of Applied Physics and the Institute of Theoretical Physics and Astrophysics

### Module offered by
Faculty of Physics and Astronomy

<table>
<thead>
<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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</thead>
<tbody>
<tr>
<td>2</td>
<td>(not) successfully completed</td>
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</table>

### Duration
1 semester

### Module level
undergraduate

### Other prerequisites
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### Contents
Principles of mathematics and elementary calculation methods from school and partially beyond, especially for the introduction to and preparation for the modules of Experimental and Theoretical Physics.
1. Basic geometry and algebra
2. Coordinate systems and complex numbers
3. Vectors - vectored values
4. Differential calculus
5. Integral calculus

### Intended learning outcomes
The students know the principles of mathematics and elementary calculation methods which are required for successfully studying Theoretical and Experimental Physics.

### 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)

a) exercises (successful completion of approx. 50% of approx. 6 exercise sheets) or b) talk (approx. 15 minutes)

Assessment offered: Once a year, winter semester

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

§ 22 II Nr. 1 h)
§ 22 II Nr. 2 f)
§ 22 II Nr. 3 f)

### Module appears in
Bachelor' degree (1 major) Physics (2015)
Bachelor' degree (1 major) Nanostructure Technology (2015)
Bachelor' degree (1 major) Mathematical Physics (2015)
Bachelor's degree (1 major, 1 minor) Physics (Minor, 2015)
First state examination for the teaching degree Grundschule Physics (2015)
First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2015)
First state examination for the teaching degree Realschule Physics (2015)
First state examination for the teaching degree Gymnasium Physics (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Primary School) (2015)
First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2015)
First state examination for the teaching degree Mittelschule Physics (2015)
First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2015)
Bachelor' degree (1 major) Mathematical Physics (2016)
| First state examination for the teaching degree Grundschule Physics (2018) |
| First state examination for the teaching degree Grundschule Didactics in Physics (Primary School) (2018) |
| First state examination for the teaching degree Realschule Physics (2018) |
| First state examination for the teaching degree Gymnasium Physics (2018) |
| First state examination for the teaching degree Mittelschule Physics (2018) |
| First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Middle School) (2018) |
| First state examination for the teaching degree Mittelschule Didactics in Physics (Middle School) (2018) |
| First state examination for the teaching degree Sonderpädagogik Didactics in Physics (Primary School) (2018) |