Mathematical Methods of Physics

Module coordinator
Managing Director of the Institute of Theoretical Physics and Astrophysics

Module offered by
Faculty of Physics and Astronomy

ECTS  Method of grading  Only after succ. compl. of module(s)
6  (not) successfully completed  --

Duration  Module level  Other prerequisites
2 semester  undergraduate  --

Contents
Principles of mathematics and basic calculation methods beyond the school curriculum, especially for the introduction to and preparation of the modules of Theoretical Physics and Classical or Experimental Physics. Repetition of basic knowledge, functions of several real variables, differential equations, linear algebra, vector analysis, other (delta distribution, Fourier transform).

Intended learning outcomes
The students have knowledge of the principles of mathematics and elementary calculation methods which are required in Theoretical and Experimental Physics. They are able to apply these methods to simple problems, especially in the field of Physics.

Courses
Mathematische Rechenmethoden 1 (Mathematical Methods 1): V (2 weekly contact hours) + Ü (1 weekly contact hour), once a year (winter semester)
Mathematische Rechenmethoden 2 (Mathematical Methods 2): V (2 weekly contact hours) + Ü (1 weekly contact hour), once a year (summer semester)

Method of assessment
This module has the following assessment components
1. Topics covered in lectures and exercises in part 1 (Mathematische Rechenmethoden 1 (Mathematical Methods 1)): exercises or talk (approx. 15 minutes, usually chosen) or written examination (approx. 60 minutes)
2. Topics covered in lectures and exercises in part 2 (Mathematische Rechenmethoden 2 (Mathematical Methods 2)): exercises or talk (approx. 15 minutes, usually chosen) or written examination (approx. 60 minutes)

Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 and 2.
Students must register for assessment components 1 and 2 online (details to be announced).
To pass this module, students must pass both assessment component 1 and assessment component 2.

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
keinem Studiengang zugeordnet