

Module title		Abbreviation
Experimental Physics 1 and 2 - Teaching Post (Mechanics, Thermodynamics, Oscillations, Waves, Electrics, Magnetism and Optics)		11-P-E-092-m01
Module coordinator		Module offered by
Managing Director of the Institute of Applied Physics		Faculty of Physics and Astronomy
ECTS	Method of grading	Only after succ. compl. of module(s)
22	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	undergraduate	Bridge course Mathematik (Mathematics) for first-semester students and sound reading, writing and maths skills as well as logical thinking skills.
Contents		
Physical laws and elementary mathematical calculation methods of mechanics, thermodynamics, vibration, waves, science of electricity, magnetism, electromagnetic vibration and waves, radiation and wave optics.		
Intended learning outcomes		
The students understand the basic principles, connections and calculation methods of mechanics, thermodynamics, vibrations, waves, science of electricity, magnetism, electromagnetic vibrations and waves, radiation and wave optics.		
Courses (type, number of weekly contact hours, language — if other than German)		
Experimentelle Physik 1 (Experimental Physics 1): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (winter semester) Experimentelle Physik 2 (Experimental Physics 2): V (4 weekly contact hours) + Ü (2 weekly contact hours), once a year (summer semester) 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 (type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)		
<p>This module has the following assessment components</p> <ol style="list-style-type: none"> Topics covered in lectures and exercises in part 1 (Experimentelle Physik 1 (Experimental Physics 1)): written examination (approx. 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (approx. 30 minutes, groups of 2 candidates). Topics covered in lectures and exercises in part 2 (Experimentelle Physik 2 (Experimental Physics 2)): written examination (approx. 120 minutes, usually chosen) or oral examination of one candidate each (approx. 20 minutes) or oral examination in groups (approx. 30 minutes, groups of 2 candidates). Topics covered in lectures and exercises in part 2 (Mathematische Rechenmethoden 1 (Mathematical Methods 1)): exercises or talk (approx. 15 minutes, usually chosen) or written examination (approx. 60 minutes) 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) Topics covered in lectures and exercises in parts 1 and 2: oral examination of one candidate each (approx. 30 minutes, usually chosen) or written examination (approx. 120 minutes). <p>Successful completion of approx. 50% of practice work each is a prerequisite for admission to assessment components 1 through 4. To qualify for admission to assessment component 5, students must pass assessment component 1 and/or 2 as well as assessment components 3 and 4. Students are highly recommended to attend both courses Experimentelle Physik 1 (Experimental Physics 1) and Experimentelle Physik 2 (Experimental Physics 2). The topics discussed in these two courses, together with the topics discussed in Mathematische Rechenmethoden (Mathematical Methods) 1 and 2, will be covered in assessment component 5. Students must register for assessment components 1 through 5 online (details to be announced). To pass this module, students must first pass assessment component 1 or 2 as well as assessment components 3 and 4 and must then pass assessment component 5.</p>		

The grade achieved in assessment component 5 will be the overall grade awarded for the module as a whole.

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)

§ 53 (1) 1. a) Physik Mechanik, Wärmelehre, Elektrizitätslehre, Optik, der speziellen Relativitätstheorie

§ 77 (1) 1. a) Physik "Grundlagen der Experimentalphysik"

Module appears in

First state examination for the teaching degree Grundschule Physics (2009)

First state examination for the teaching degree Hauptschule Physics (2009)

First state examination for the teaching degree Realschule Physics (2009)

First state examination for the teaching degree Gymnasium Physics (2009)

First state examination for the teaching degree Mittelschule Physics (2013)

No final examination Special study offering (2010)