

<b>Module title</b>		<b>Abbreviation</b>
Lab Course A		11-P-PA-112-m01
<b>Module coordinator</b>		<b>Module offered by</b>
Managing Director of the Institute of Applied Physics		Faculty of Physics and Astronomy
<b>ECTS</b>	<b>Method of grading</b>	<b>Only after succ. compl. of module(s)</b>
5	(not) successfully completed	--
<b>Duration</b>	<b>Module level</b>	<b>Other prerequisites</b>
1 semester	undergraduate	--
<b>Contents</b>		
Physical laws of mechanics, thermodynamics, science of electricity, types of error, error approximation and propagation, graphs, linear regression, average values and standard deviation, distribution functions, significance tests, writing of lab reports and publications..		
<b>Intended learning outcomes</b>		
The students know and have mastered physical measuring methods and experimenting techniques. They are able to independently plan and conduct experiments, to cooperate with others, and to document the results in a measuring protocol. They are able to evaluate the measuring results on the basis of error propagation and of the principles of statistics and to draw, present and discuss the conclusions.		
<b>Courses</b> (type, number of weekly contact hours, language – if other than German)		
Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis): V (1 weekly contact hour) + Ü (1 weekly contact hour), once a year (winter semester) Beispiele aus Mechanik, Wärmelehre und Elektrizität (Examples from Mechanics, Thermodynamics and Electricity, BAM): P (2 weekly contact hours)		
<b>Method of assessment</b> (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"> <li>1. Topics covered in lectures and exercises: written examination (approx. 120 minutes)</li> <li>2. Lab course: a) Preparing, performing and evaluating the experiments will be considered successfully completed if a Testat (exam) is passed. b) Talk (with discussion) to test the students' understanding of the physics-related contents of the course (approx. 30 minutes).</li> </ol> <p>Successful completion of approx. 50% of practice work is a prerequisite for admission to assessment component 1.</p> <p>To pass assessment component 2, students must pass both elements a) and b). Students will be offered one opportunity to retake element a) and/or element b).</p> <p>Students must register for assessment components 1 and 2 online (details to be announced).</p> <p>Students must attend Auswertung von Messungen und Fehlerrechnung (Measurements and Data Analysis) before attending Beispiele aus Mechanik, Wärmelehre und Elektrizität (Examples from Mechanics, Thermodynamics and Electricity).</p> <p>To pass this module, students must pass both assessment component 1 and assessment component 2.</p>		
<b>Allocation of places</b>		
--		
<b>Additional information</b>		
--		
<b>Workload</b>		
--		
<b>Referred to in LPO I</b> (examination regulations for teaching-degree programmes)		
<p>§ 53 (1) 1. a) Physik Mechanik, Wärmelehre, Elektrizitätslehre, Optik, der speziellen Relativitätstheorie</p> <p>§ 53 (1) 1. c) Physik physikalische Grundpraktika</p> <p>§ 77 (1) 1. a) Physik "Grundlagen der Experimentalphysik"</p>		

§ 77 (1) 1. d) Physik "physikalische Praktika"

**Module appears in**

Bachelor' degree (1 major) Mathematics (2012)  
Bachelor' degree (1 major) Mathematics (2013)  
Bachelor' degree (1 major) Physics (2012)  
Bachelor' degree (1 major) Nanostructure Technology (2012)  
Bachelor' degree (1 major) Mathematical Physics (2012)  
Bachelor' degree (1 major) Computational Mathematics (2012)  
Bachelor' degree (1 major) Computational Mathematics (2013)  
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)