

Module title		Abbreviation
Modern Physics in Nature and Technology		11-L-MPNT-152-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)
6	numerical grade	--
Duration	Module level	Other prerequisites
2 semester	undergraduate	--
Contents		
Basics of Solid-State Physics; Nuclear Physics, Elementary Particle Physics and Astrophysics; introduction of important concepts and applications of Physics; interconnections between the physical subdisciplines (and partly with other Natural Sciences); aspects of the history of ideas of important concepts and their controversies (e.g. atomism, determinism); Applied and Technical Physics: Physics and information/communication technology; rules and process technology, sensors; medical technology; climate and weather; Biophysics; ecology; energy; celestial mechanics, satellites, GPS; measuring devices; electrical light sources; displays		
Intended learning outcomes		
The students have structured knowledge of the aforementioned terms. Their understanding of important shared concepts enables them to connect different subdisciplines of Physics, they know the similarities and differences of different usage contexts and therefore have in-depth knowledge of these concepts; they understand complex systems of nature and engineering and are able to connect their own physical knowledge in a synergetic manner by analysing the solutions to selected, complex problems.		
Courses (type, number of weekly contact hours, language — if other than German)		
S (2) + S (2) Module taught in: Ü: German or English		
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) written examination (approx. 90 to 120 minutes) or b) oral examination of one candidate each (approx. 20 minutes) Language of assessment: German and/or English		
Allocation of places		
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Additional information		
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Workload		
180 h		
Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
§ 53 I Nr. 1 b)		
Module appears in		
First state examination for the teaching degree Realschule Physics (2015) First state examination for the teaching degree Realschule Physics (2018) First state examination for the teaching degree Realschule Physics (2020)		