

Module title		Abbreviation
Atoms and Molecules - Exercises		11-E-AA-202-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)
5	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
Contents		
Exercises in atomic and quantum physics according to the knowledge provided by 11-E-OAV. Among others Structure of atoms, Experimental fundamental laws of quantum physics, the Schrödinger equation, quantum mechanics of the hydrogen atom, atoms in external fields, multi-electron atoms, optical transitions and spectroscopy, laser, molecules and chemical bonding, molecular rotations and vibrations, etc.		
Intended learning outcomes		
Students have an understanding of the fundamental interrelationships and the fundamental laws of quantum phenomena, atomic and molecular physics. they will be able to formulate physical interrelationships of atomic and quantum physics mathematically and apply their knowledge in solving mathematical-physical tasks autonomously.		
Courses (type, number of weekly contact hours, language — if other than German)		
Ü (2) Module taught in: 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)		
written examination (approx. 120 minutes) Language of assessment: German and/or English		
Allocation of places		
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Additional information		
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Workload		
150 h		
Teaching cycle		
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Referred to in LPO I (examination regulations for teaching-degree programmes)		
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Module appears in		
Bachelor' degree (1 major) Physics (2020) Bachelor' degree (1 major) Nanostructure Technology (2020) Bachelor' degree (1 major) Quantum Technology (2021) exchange program Physics (2023)		