


Data:	FCRY. MA. Nr. 3611 / Examination number: 23002	Version: 02.02.2018 	Start Year: WiSe 2018
Module Name: (English):	Fundamentals of Crystallography		
Responsible:	Gumeniuk, Roman / Prof.		
Lecturer(s):	Gumeniuk, Roman / Prof.		
Institute(s):	Institute of Experimental Physics		
Duration:	1 Semester(s)		
Competencies:	Students should be able to describe crystal structure, to perform structural analysis and to understand relationships between crystal structure and some physical properties.		
Contents:	Crystal lattice, symmetry elements, pointgroups, infinite symmetry elements, space group, International tables of crystallography Reciprocal lattice, Structural factors, reflection conditions, Single crystal- and powder X-ray diffraction methods. Crystal growth, Tensor properties and transformation, pyro-, piezo-electricity, permittivity, elastic properties etc.		
Literature:	W. Borchardt-Ott: Crystallography: An Introduction, Springer V.K. Pecharsky, P.Y. Zavalij: Fundamentals of Powder Diffraction and structural Characterization of Materials, Springer M. de Graef, M.E. McHenry: Structure of Materials: An Introduction to Crystallography, Diffraction and Symmetry, Cambridge University Press R.E. Newnham: Properties of Materials: Anisotropy, Symmetry, Structure; Oxford University Press		
Types of Teaching:	S1 (WS): Lectures (2 SWS) S1 (WS): Exercises (1 SWS)		
Pre-requisites:			
Frequency:	yearly in the winter semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: KA [120 min]		
Credit Points:	4		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): KA [w: 1]		
Workload:	The workload is 120h. It is the result of 45h attendance and 75h self-studies.		