Module title	**MScNano PSR Physics with Synchrotron Radiation**
Module type	Required elective module
Educational outcomes, competencies, qualification objectives	Students ... gained basic knowledge about the properties of synchrotron radiation and its applications … know about material analysis methods using synchrotron radiation ... have acquired basic knowledge about synchrotron based lithography processes
Types of courses, contact hours	VL 2 SWS
Contents	**Physics with synchrotron radiation** theory of synchrotron radiation, construction of synchrotron radiation facilities, Wiggler and Undulators, Free-Electron-Laser, x-ray fluorescence analysis, EXAFS, NEXAFS, XMCD, LIGA-procedure, x-ray lithography
Course titles	Physics with synchrotron radiation
Teaching methods	Lecture
Applicability	M.Sc. Nanoscience
Duration	one semester
Frequency	annually, starting in the summer semester
Language	English, for a transitional period lecture notes and exam questions might also be in German
Recommended Skills	Fundamental knowledge in physics on Bachelor level
Prerequisites for participation	
Students workload	Contact time: 30 h, Independent studies: 60 h, Summe = 90 h
Course projects / nongraded learning assignments (Studienleistungen)	
Prerequisites for admission to examination	none
Examination	Oral (30 min.) or written (1-2 h) exam. Type, date and duration of the exam will be announced at the start of the lecture.
Number of credits	3 C
Responsible coordinator	Prof. Ehresmann
Lecturer(s)	Prof. Ehresmann
Media	Blackboard, Beamer
Literature	K. Wille: Physik der Teilchenbeschleuniger und Synchrotronstrahlungsquellen, Teubner (in German) References to original literature will be given in the lecture