

Level: master				
Course title: Advanced course of Atomic Physics				
Status: obligatory				
ECTS: 8				
Requirements: Introduction to atomic physics, Atomic physics				
Learning objectives To introduce students to results of modern research in atomic physics.				
Learning outcomes After completing the course, students should possess: - General skills: basic knowledge that can be applied in various fields from medicine to various kinds of research. - Specific skills: training and competences to upgrade knowledge in doctoral studies.				
Syllabus <i>Theoretical instruction</i> Atomic collisions and scattering, the basic concept. Electron-atom collisions. Atom-atom collisions. Elastic and inelastic collisions. Rydberg's atoms. Laser spectroscopy. Atoms in strong laser radiation field. Laser cooling and trapping of atoms. Application of atomic and molecular physics. Magnetic resonance imaging. Atomic optics. Atoms and ions in the cavity of the trap. Atomic clock. Astrophysics. Nonequilibrium plasma. <i>Practical instruction</i> Spectroscopy. Determining the parameters of two atomic molecules.				
Weekly teaching load				Other:
Lectures: 3	Exercises: 1	Other forms of teaching: 3 seminars	Student research:	