

Level: PhD				
Course title: Plasma Physics				
Status: elective				
ECTS: 30				
Requirements: Basic electronics, Atomic physics				
Learning objectives To introduce students to the processes that occur in the discharge through gases.				
Learning outcomes After completion of the course, students should have developed: - General skills: reading professional literature, gained experience and knowledge to set new applicable experiments in plasma spectroscopy, atomic physics, etc. - Specific skills: students gain knowledge of elementary processes in ionized gases and application of ionized gases.				
Syllabus <i>Theoretical instruction</i> Directed motion of electrons under the influence of electric fields. Directional movement and mobility of ions. The movement of electrons under the influence of magnetic fields. Thermionic emission. Secondary electron emission. Thermal ion emission. Fundamentals of classical and quantum theory of collisions of atomic particles. Elastic scattering of electrons from atoms. Excitation, ionization and recombination of atoms in collisions with electrons. Types of discharges. Non-sustained discharges. Breakdown in the electric discharge. Self-sustained discharges. Glow discharge, corona, arc discharge, spark and high-frequency discharge. High current pulsed discharge. <i>Practical instruction</i> The exercises follow content of the theoretical instructions.				
Weekly teaching load				Other:
Lectures: 5	Exercises: 15	Other forms of teaching: seminars	Student research:	