

Course Unit Descriptor

Study Programme: Physics			
Course Unit Title: Laser Plasma Diagnostics			
Course Unit Code: FD18LDP			
Name of Lecturer(s): Full Professor Zoran Mijatović			
Type and Level of Studies: PhD			
Course Status (compulsory/elective): Elective			
Semester (winter/summer): Summer			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): Face-to-face			
Number of ECTS Allocated: 15			
Prerequisites: Master in Plasma physics			
Course Aims: The knowledge about plasma diagnostics methods based on laser application.			
Learning Outcomes: Abilities: - General: Ability for professional and scientific activities in the field of plasma diagnostics using lasers. - Specific: Ability for setting up and performing the experiments. Application of different methods based on laser methods for plasma diagnostic purposes – plasma electron density and temperature determination. Ability to discuss the results obtained. Inclusion in scientific and industrial processes based on plasma technologies.			
Syllabus: Interferometers. Refractive index of plasma. Plasma characterization by measuring refractive index. Schliren method. Shadow Method. Plasma interferometry using photoelectric determination. Laser interferometers. Investigation of magnetoactive plasmas utilizing rotation of polarizing plane. Plasma parameters determination from interferograms. Holographic interferometry. Plasma investigation from light scattering. Interaction between electromagnetic waves and plasma. Technique of scattering experiments. Detection of scattered spectra.			
Required Reading: 1. W. Lochte-Holtgreven, Ed., Plasma diagnostic, North-Holland, Amsterdam (1968).			
Weekly Contact Hours:	Lectures: 4	Practical work: 6	
Teaching Methods: Lectures and students group work			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Active class participation		written exam	
Test I and Test II		oral exam	60
Preliminary exam(s)		
Seminar(s)	40		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam,			

project presentation, seminars, etc.