Course Unit Descriptor

Study Programme: Physics

Course Unit Title: Introduction to plasma technologies

Course Unit Code: M18UPT

Name of Lecturer(s): Full Professor Zoran Mijatović

Type and Level of Studies: Master Academic Degree

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: 8

Prerequisites: Fundaments of electronics

Course Aims:

To teach students about the main aspects plasma technologies.

Learning Outcomes:

Capability to perform experimental work. Understanding of plasma sources and application in different technological and industrial processes.

Syllabus:

Theory

Treatment of surfaces by plasmas. Ions-solids interactions. Thin film deposition by plasmas. Plasma etching in microelectronics. Material processing by plasmas. Plasma chemistry. Plasma light sources.

Practice

Electrical characteristics of pulsed plasma sources. Spectral characteristics of pulsed plasma sources. Spectral characteristics of DC arc plasma. Spectral characteristics of glow discharge. Glass metalization by plasmas.

Required Reading:

1. J. R. Roth, Industrial Plasma engineering, Vol. 1, IoP, Bristol, 1995.
2. J. R. Roth, Industrial Plasma engineering, Vol. 2 IoP, Bristol, 2001.

Weekly Contact Hours:	**Lectures:** 3	**Practical work:** 2

Teaching Methods:

Lectures and students group work

Knowledge Assessment (maximum of 100 points): 100

Pre-exam obligations	points	**Final exam**	points
Active class participation	5	written exam	
Test I and Test II	15	oral exam	70
Preliminary exam(s)	5	…….	
Seminar(s)	5		

The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.