

<b>Study Programme:</b> Bachelor Academic Studies in Physics			
<b>Course Unit Title:</b> Non-ionizing radiation			
<b>Course Unit Code:</b> F18NZ			
<b>Name of Lecturer(s):</b> Full Professor Dusan Mrdja			
<b>Type and Level of Studies:</b> Bachelor Academic Degree			
<b>Course Status (compulsory/elective):</b> Elective			
<b>Semester (winter/summer):</b> Winter			
<b>Language of instruction:</b> English			
<b>Mode of course unit delivery (face-to-face/distance learning):</b> Face-to-face			
<b>Number of ECTS Allocated:</b> 6			
<b>Prerequisites:</b> Electromagnetism			
<b>Course Aims:</b> To teach students about the main aspects of non-ionizing radiation.			
<b>Learning Outcomes:</b> Understanding the principles of non-ionizing radiation.			
<b>Syllabus:</b> <i>Theory</i> Electromagnetic fields – quantities, units and Maxwell's equations. Black-body radiation. Radiation of electric dipole. General properties and classification of non-ionizing radiation. Interaction of electric and magnetic fields with the medium. Non-ionizing UV radiation. Visible light. Infrared radiation. Microwave radiation. Radio-frequency radiation. Low-frequency non-ionizing radiation. Artificial sources of radio-frequency and low-frequency radiation. Base stations for mobile telephony. Measurements of electromagnetic fields. The absorption of electromagnetic radiation in the human body. The dose of non-ionizing radiation. Exposure to non-ionizing radiation in the environment. Standards for protection against non-ionizing radiation. <i>Practice</i> -			
<b>Required Reading:</b> 1. J. Shapiro, Radiation Protection, Exposure to Nonionizing Electromagnetic Radiation, Harvard University Press, 2002.			
<b>Weekly Contact Hours:</b>	<b>Lectures:</b> 3	<b>Practical work:</b> 2	
<b>Teaching Methods:</b> Lectures, practical work and seminars			
<b>Knowledge Assessment (maximum of 100 points):</b>			
<b>Pre-exam obligations</b>	points	<b>Final exam</b>	points
Active class participation	5	written exam	
Practical work	5	oral exam	70
Preliminary exam(s)		.....	

Seminar(s)	20		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			