

## Specification for the book of courses

<b>Study program</b>		Computing and Informatics		
<b>Module</b>		Information Systems and Technologies		
<b>Type and level of studies</b>		Master studies		
<b>The name of the course</b>		Methods and Techniques of the Image Processing		
<b>Lecturer (for lectures)</b>		Vučković V. Vladan, Nejković M. Valentina		
<b>Lecturer/associate (for exercises)</b>		Radmanović M. Miloš		
<b>Lecturer/associate (for OFE)</b>				
<b>Number of ECTS</b>	4	<b>Course status (obligatory/elective)</b>	Elective	
<b>Prerequisites</b>				
<b>Course objectives</b>	Learning about image processing techniques and training a student for independent application of learned techniques for solving real problems in image processing.			
<b>Course outcomes</b>	Upon completion of this course, students should be familiar with the methods and techniques applied in the field of image processing and to acquire enough knowledge to independently realize applications based on image processing.			
<b>Course outline</b>				
<b>Theoretical teaching</b>	Principles of image digitization. Quantity of the image in the original and transformation domain. Statistical models of picture and noise. Transformation of the image. Discrete representations of image transformations. Methods for filtering in the original and transformation domain. Quantification. Image restoration: Linear filters. Image restoration and segmentation: nonlinear filters. Methods for improving the image quality. Image compression. Efficient algorithms for image processing. Processing scanned documents. OCR systems.			
<b>Practical teaching (exercises, OFE, study and research)</b>	Study research work: preparation of seminar papers in the field of advanced image processing techniques and oral presentations and defense of work.			
<b>Textbooks/references</b>				
1	L. Yaroslavsky, Digital Holography and Digital Image Processing: Principles, Methods, Algorithms, Kluwer Academic, 2004.			
2	Yaroslavsky, L., Advanced Lab in Image Processing, teaching material based on the book Digital Holography and Digital Image Processing: Principles, Methods, Algorithms, Kluwer Academic, 2004.			
3	B. Jahne, Digital Image Processing, Springer, 2002.			
4	Material on the site: <a href="http://cs.elfak.ni.ac.rs/nastava/">http://cs.elfak.ni.ac.rs/nastava/</a>			
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<b>Number of classes of active education per week during semester/trimester/year</b>				
<b>Lectures</b>	<b>Exercises</b>	<b>OFE</b>	<b>Study and research work</b>	<b>Other classes</b>
2	1	0		
<b>Teaching methods</b>	Lectures, students' independent work on homework assignments and projects, consultations.			
<b>Grade (maximum number of points 100)</b>				
<b>Pre-exam duties</b>	<b>Points</b>	<b>Final exam</b>	<b>Points</b>	
<b>Activity during lectures</b>		<b>Written exam</b>		
<b>Exercises</b>	20	<b>Oral exam</b>	50	
<b>Colloquia</b>				
<b>Projects</b>	30			