

## Specification for the book of courses

<b>Study program</b>		Electrical Engineering and Computer Science		
<b>Module</b>		Common		
<b>Type and level of studies</b>		Doctoral studies		
<b>The name of the course</b>		Computer Vision		
<b>Lecturer (for lectures)</b>		Nikolić V. Saša		
<b>Lecturer/associate (for exercises)</b>				
<b>Lecturer/associate (for OFE)</b>				
<b>Number of ECTS</b>	10	<b>Course status (obligatory/elective)</b>	Elective	
<b>Prerequisites</b>				
<b>Course objectives</b>	To train students for research work in the field of computer vision. Introduce advanced algorithms in the field of digital image processing and machine learning.			
<b>Course outcomes</b>	Practical implementation of state of the art algorithms in the field of digital image processing and machine learning for content based image recognition and classification.			
<b>Course outline</b>				
<b>Theoretical teaching</b>	Extracting features in an image - global and local features (CLD MPEG-7, MPEG-7 EHD, LBP, SIFT). The classification features (k-means, Bayesian methods, SVM). Search and classification based on image content. Fast search techniques using machine learning. Detection and identification of 2D objects in an image. Object tracking in video sequences. Stereovision. Basics of 3D vision.			
<b>Practical teaching (exercises, OFE, study and research)</b>	Implementation of algorithms in Matlab.			
<b>Textbooks/references</b>				
1	David A. Forsyth, Jean Ponce, "Computer Vision: A Modern Approach", 2nd edition, 2011.			
2				
3				
4				
5				
<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>
3	0	0	0	0
<b>Teaching methods</b>	Lectures, individual 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>		<b>Oral exam</b>	50	
<b>Colloquia</b>				
<b>Projects</b>	50			