

Study program: Computer and software engineering				
Type and level of studies: Undergraduate academic studies				
Course unit: Functional Verification of Digital Systems				
Teacher in charge : Uroš Pešović, teaching assistant Mihailo Knežević				
Language of instruction: English				
ECTS: 6				
Prerequisites: -				
Semester: Winter semester				
<i>Course unit objective:</i>				
The goal of the course is to master modern methodologies for the verification of complex digital systems				
<i>Learning outcomes of Course unit</i>				
Understanding the relationship between verification and design. Knowledge of the structure and components that make up the verification environment. Ability to create a verification environment for verification of a given digital system. Knowledge of UVM methodology and the ability to develop modern UVM verification environments using the SystemVerilog language				
Course unit contents				
<i>Theoretical teaching</i>				
The process of designing, designing, manufacturing and testing digital systems. The relationship between verification and design. Formal and functional verification. Public-oriented aspects of the SystemVerilog language. Generating a random test vector and limiting the range of allowed values. Structure and components of the verification environment. Reference model. Code and functional coverage. UVM methodology.				
<i>Practical teaching</i>				
Creating practical tasks using design tools. Circuit modeling using SystemVerilog and SystemC languages.				
Literature				
[1] V. A. Chandrasetty, VLSI Design: A Practical Guide for FPGA and ASIC Implementations, 2011, Springer New York, ISBN 978-1-4614-1119-2, DOI 10.1007/978-1-4614-1120-8				
[2] B. Wile, J. Goss, W. Roesner, Comprehensive Functional Verification: The Complete Industry Cycle, 2005, Morgan Kaufmann Publishers is an imprint of Elsevier, ISBN: 0-12-751803-7				
Number of active teaching hours				Other classes
Lectures: 2	<i>Practice:</i> 2	<i>Other forms of classes:</i>	<i>Independent work:</i>	
Teaching methods: consultations, independent work				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	0	oral examination	25	
Practical classes	0	written examination	25	
Seminars/homework	30		
Project	20			
Grading system				
Grade	No. of points	Description		
10	91-100	Excellent		
9	81-90	Exceptionally good		
8	71-80	Very good		
7	61-70	Good		
6	51-60	Passing		
5	less than 50	Failing		