

Description of an Individual Course Unit

Study program		Електротехника и рачунарство		
Module		модул Микроталасна техника		
Type and level of studies		докторске академске студије		
Course title		Microwave electronics		
Professor (for lectures)		Милан Илић		
Professor/assistant (for practice)		Милан Илић		
Professor/assistant (for LAB)				
Number of ECTS		9	Type of the course (mandatory/elective) elective	
Prerequisite	None.			
Objective of the course	Familiarization with advanced theory, design, and optimization techniques of active microwave circuits with emphasis on training in efficient and competent utilization of modern CAD tools. Design of an active microwave circuit with prototype manufacturing and measurements of relevant parameters. Introduction to research.			
Learning outcomes of the course	Acquire proficiency in designing more complex active microwave circuits. Acquire skills to perform independent research.			
Course Contents				
Theoretical contents	SMicrowave solid-state devices. Analysis of nonlinear microwave circuits: time-domain analysis and harmonic balance analysis. Microwave amplifiers. Small-signal amplifiers and nonlinear amplifiers. Advanced design and optimization techniques of complex microwave circuits. Oscillators. Mixers. Frequency multipliers. Frequency synthesizers. Modulators. Microwave integrated circuits.			
Practical part (practices, LAB, study research work)	Student projects. Analysis and presentation of published papers.			
Literature				
	1 D. Pozar, Microwave Engineering, New York: Wiley, 2004.			
	2 R. Gilmore and L. Besser, Practical RF Circuit Design for Modern Wireless Systems, Volume II: Active			
	3 G. Gonzalez, Microwave Transistor Amplifiers: Analysis and Design, New York: Prentice Hall, 1997.			
	4			
	5			
Number of ECTS				
Lectures	Practices	LAB	Study research work	Other activities
90				
Teaching Methods	Lectures and directed study.			
Grading methods (max. number of points is 100)				
Pre-exam assesments	points	Final examination		points
activity during lectures		written exam		
practical assesments		oral exam		30
mid-term exams				
project	70			