Faculty of Electrical Engineering / /

Course:	
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
13290	Mandatory	3	5	2+0+2

Programs	
Prerequisites	
Aims	
Learning outcomes	After passing this exam, the student will be able to: - Explain the operating principle of antenna arrays. - Understand techniques for forming radiation patterns. - Classify types of Smart antennas. - Describe the principles of operation of Direction of Arrival (DOA) and Beamforming algorithms. - Understand the basic principles of Array processing and the principles of operation of fifth and subsequent generations of mobile systems. - Understand spatial signal filtering techniques. - Understand the basic concepts of radar. - Design a microstrip IoT antenna and conduct measurements in the laboratory.
Lecturer / Teaching assistant	
Methodology	
Plan and program of work	
Preparing week	Preparation and registration of the semester
I week lectures	
I week exercises	
II week lectures	
II week exercises	
III week lectures	
III week exercises	
IV week lectures	
IV week exercises	
V week lectures	
V week exercises	
VI week lectures	
VI week exercises	
VII week lectures	
VII week exercises	
VIII week lectures	
VIII week exercises	
IX week lectures	
IX week exercises	
X week lectures	
X week exercises	
XI week lectures	
XI week exercises	
XII week lectures	
XII week exercises	
XIII week lectures	
XIII week exercises	
XIV week lectures	

XIV week exercises	
XV week lectures	
XV week exercises	
Student workload	

Per week	Per semester
5 credits x 40/30=6 hours and 40 minuts 2 sat(a) theoretical classes 2 sat(a) practical classes 0 excercises **2 hour(s) i 40 minuts** of independent work, including consultations	Classes and final exam: **6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts** Total workload for the subject: **5 x 30=150 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **30 hour(s) i 0 minuts** Workload structure: **106 hour(s) i 40 minuts (cources), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)**

Student obligations	
Consultations	
Literature	
Examination methods	
Special remarks	
Comment	

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points