

Course Unit Descriptor

Study Programme: Communications Technologies and Signal Processing			
Course Unit Title: Principles of Radio Communication			
Course Unit Code: EK457			
Name of Lecturer(s): Milan Narandžić			
Type and Level of Studies: Bachelor level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 6			
Prerequisites: none			
Course Aims: Mastering the basic knowledge related to the use of radio-emission in the function of remote data transfer. Introduction to the contemporary radio-systems.			
Learning Outcomes: Theoretical knowledge, the use of programme simulations.			
Syllabus: Development of radio-communications. Electromagnetic wave properties. Transfer function of radio-connection. Antennas, the characteristics and parameters. EM wave propagation, attenuation in the free space, the impact of Earth, atmosphere and ionosphere on the propagation of waves. Fading. Diversity transfer techniques. Multiple access techniques (FDMA, TDMA, CDMA). Review and systematization of mobile radio systems. Conventional radio network. Characteristics of modern cellular radio networks: mobile telephony (GSM), tracking system (TETRA), DECT, Radio-LAN. Satellite mobile systems. Development of universal mobile telecommunication systems (UMTS).			
Required Reading: Relevant literature in English			
Weekly Contact Hours: 6	Lectures: 3	Practical work: 3	
Teaching Methods: Lectures; Auditory Practice; Computer Practice; Laboratory Practice; Consultations			
Knowledge Assessment (maximum of 100 points): 100			
Pre-exam obligations	points	Final exam	points
Homework	-	Written part of the exam	-
Colloquium exam	-		
Laboratory exercise defence	-		
Test	-		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			