

Study program: Information technologies				
Type and level of studies: Master studies (second level of studies)				
Course unit: Contemporary Communication Systems				
Teacher in charge: Vladimir Mladenović				
Language of instruction: English				
ECTS: 6				
Prerequisites: -				
Semester: Winter				
Course unit objective				
The course should provide students with fundamental knowledge in the field of modern communication systems, including technological aspects, architecture and the most important characteristics of the system, offer services and the like.				
Learning outcomes of Course unit				
Acquisition of knowledge related to the implementation of the principles and functioning of modern communication systems. Building basis for more detailed knowledge in order to solve concrete problems in practice.				
Course unit contents				
<i>Theoretical classes</i>				
Classification of communication systems. Frequency bands. Characteristics of wireless communication systems. Antennas in modern communication systems. Propagation of EM waves in real cases. Fixed terrestrial communication systems. Satellite systems. GPS systems. Mobile communication systems. The cellular access. Fundamentals of GSM system. GPRS systems. Third-generation systems: architecture, characteristics and working principle of the UMTS system. The fourth generation communication systems: LTE systems. Development trends.				
<i>Practical classes</i>				
Solving specific problems related to the topics covered by the course. The use of computers for calculations / simulations.				
Literature				
[1] V. Mladenovic et al, <i>Telecommunications: Applications, Modern Technologies and Economic Impact</i> , Nova publisher, 2014				
[2] V. Marković, <i>Modern communication systems</i> , Script, WUS Austria and the Technical Faculty, Cacak, 2009.				
[3] M. Khader, W. Barnes, <i>Telecommunications Systems and Technology</i> , Prentice Hall, 2000.				
[4] J. Schiller, <i>Mobile Communications</i> , Addison-Wesley, 2000.				
[5] Erik Dahlman, Stefan Parkvall, Johan Skold, Per Beming, <i>3G Evolution: HSPA and LTE for Mobile Broadband</i> , Elsevier Academic Press, 2007				
Number of active teaching hours				Other classes
Lectures: 2	Practice: 2	Other forms of classes	Independent work:	
Teaching methods Lectures, exercises, projects – independent				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures		oral examination	15	
Practical classes/tests	50	written examination	15	
Seminars/homework	20		
Project				
Other				
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		