

Specification for the book of courses

Study program		Control Systems		
Module		Computer Control Systems and Measurement Techniques		
Type and level of studies		Master studies		
The name of the course		Mobile Communication Systems		
Lecturer (for lectures)		Marković V. Vera, Marinković D. Zlatica		
Lecturer/associate (for exercises)		Dimitrijević Ž. Tijana		
Lecturer/associate (for OFE)		Dimitrijević Ž. Tijana		
Number of ECTS		5	Course status (obligatory/elective)	Elective
Prerequisites				
Mastering the knowledge and skills in mobile communication systems. Introduction to the basic principles and techniques of mobile communications, as well as the specifics of current and future mobile systems and services that they offer.				
Course objectives				
Ability to understand the basic principles of mobile communication. Knowledge of the mobile communication evolution from the first to the fifth generation. Knowledge of the architecture of up-to-date mobile systems and the principles of functioning of system components. Knowledge of 5G systems and their role in IoT.				
Course outcomes				
Ability to understand the basic principles of mobile communication. Knowledge of the mobile communication evolution from the first to the fifth generation. Knowledge of the architecture of up-to-date mobile systems and the principles of functioning of system components. Knowledge of 5G systems and their role in IoT.				
Course outline				
Theoretical teaching				
Evolution of the standards of mobile communication systems. Principles of mobile communications. Cellular approach. User equipment. GSM, GPRS and UMTS systems. HSPA and HSPA + systems. Architecture, functioning, characteristics and services of the LTE and LTE Advanced system. Basics of 5G systems. The role of 5G in IoT. Trends in the mobile communications market in Serbia and in the world.				
Practical teaching (exercises, OFE, study and research)				
Solving practical problems in the field of mobile communication systems. Introduction to practical methods for testing the quality of services of mobile networks. Visits to companies.				
Textbooks/references				
1	Teacher's script "Mobile Communication Systems" in e-form (in Serbian)			
2	Gospić N., I. Tomić, D. Popović, D. Bogojević „Razvoj mobilnih komunikacija od GSM do LTE“, Saobraćajni fakultet, Beograd 2010, ISBN 978-86-7395-268-0 Udžbenik			
3	D.P. Agrawal, Q.A. Zeng, Introduction to Wireless and Mobile Systems, Thomson, 2006			
4	J. Rodriguez, "Fundamentals of 5G Mobile Networks", Wiley, ISBN: 978-1-118-86752, 2015			
5	J. Schiller, Mobile Communications, Addison-Wesley, 2000.			
Number of classes of active education per week during semester/trimester/year				
Lectures	Exercises	OFE	Study and research work	Other classes
2	2	1		
Teaching methods				
Lectures, practical exercises, professional visits				
Grade (maximum number of points 100)				
Pre-exam duties		Points	Final exam	Points
Activity during lectures		5	Written exam	20
Exercises		5	Oral exam	20
Colloquia		50		
Projects				