

## Specification for the book of courses

<b>Study program</b>		Communications and Information Technologies		
<b>Module</b>		Communications and Information Processing		
<b>Type and level of studies</b>		Master studies		
<b>The name of the course</b>		Computing for IoT communication		
<b>Lecturer (for lectures)</b>		Milić N. Dejan		
<b>Lecturer/associate (for exercises)</b>		Anastasov A. Jelena, Cvetković M. Aleksandra		
<b>Lecturer/associate (for OFE)</b>				
<b>Number of ECTS</b>	4	<b>Course status (obligatory/elective)</b>	Elective	
<b>Prerequisites</b>				
<b>Course</b>	Introduce telecommunication students to basic computing skills required for IoT applications.			
<b>Course outcomes</b>	<ul style="list-style-type: none"> <li>- Understand the basics of IoT concept and M2M communications</li> <li>- Recognize modern communication and computing concepts and terminology used within IoT ecosystem</li> <li>- Acquire practical experience in designing communication and basic software side for an IoT platform</li> <li>- Ability to realize a simple practical IoT project on available hardware platforms and identify strong sides and possible problems</li> <li>- Estimate what can be done easily at the software level to test and debug an IoT system, and what requires help of skilled programming professionals</li> </ul>			
<b>Course outline</b>				
<b>Theoretical teaching</b>	Computing in general, and communication specifics. Internet. Things. M2M communications, protocols and interfaces. Sensor/actuator networks. Handling and analyzing data. Context. Smart environments. Security. Surviving in Java. Integrated Development Environments for Things. Basics of Linux and shell scripting. Application examples and case studies.			
<b>Practical teaching (exercises, OFE, study and research)</b>				
<b>Textbooks/references</b>				
1	Vijay Madiseti, Arshdeep Bahga, Internet of Things, A Hands-on-Approach, VPT, 2014.			
2	Francis daCosta, Byron Henderson, Rethinking the Internet of Things: a scalable approach to connecting everything, Apress, 2014			
3	Adeel Javed, Building Arduino Projects for the Internet of Things, Apress Media, 2016			
4	Stephen Chin, James Weaver, Raspberry Pi with Java: Programming the Internet of Things (IoT), McGraw Hill Professional, 2015			
5				
<b>Number of classes of active education per week during semester/trimester/year</b>				
<b>Lectures</b>	<b>Exercises</b>	<b>OFE</b>	<b>Study and research work</b>	<b>Other classes</b>
2	1	0	0	0
<b>Teaching methods</b>	Course will be based on a hands-on methodology that keeps classroom sessions to a minimum. Most of the learning activities will be based on laboratory work, and open discussions with students. Practical application of learning-by-doing principle.			
<b>Grade (maximum number of points 100)</b>				
<b>Pre-exam duties</b>	<b>Points</b>	<b>Final exam</b>		<b>Points</b>
<b>Activity during lectures</b>	10	<b>Written exam</b>		
<b>Exercises</b>	50	<b>Oral exam</b>		40
<b>Colloquia</b>				
<b>Projects</b>				