Specification for the book of courses

Study program	Electrical Engineering and Computer Science		
Module	Communications and Information Technologies - Communications and Information Processing		
Type and level of studies	Undergraduate Academic Studies		
The name of the course	M2M Communications		
Lecturer (for lectures)	Jovanović Ž. Aleksandra		
Lecturer/associate (for exercises)	Cvetković M. Aleksandra, Anastasov A. Jelena		
Lecturer/associate (for OFE)	Cvetković M. Aleksandra, Anastasov A. Jelena		
Number of ECTS	5	**Course status (obligatory/elective)**	Elective
Prerequisites			
Course objectives	Provide the necessary theoretical and practical knowledge of M2M architecture, protocols and applications.		
Course outcomes	Comprehensive insight into M2M architecture and standards, from concept to implementation.		
Course outline			
Theoretical teaching	M2M communication and application. Components in the M2M structure: devices, gateway, M2M network, communication network, application. M2M architectures: 3GPP MTC architecture; ETSI M2M architecture; Architecture of the EXALTED system. Standards and protocols in M2M communications: ZigBee, Bluetooth, 6LoWPAN, NFC standard.		
Practical teaching (exercises, OFE, study and research	Realization of M2M communication by connecting the Raspberry Pi platform with the M2M device. Programming and implementation of Python application on Raspberry Pi.		
Textbooks/references			
1	D. D. Drajić, Introduction in M2M Communications (in Serbian), Academic mind, Belgrade, 2016.		
2	D. Boswarthick, O. Elloumi, O. Hersent, M2M Communications: A Systems Approach, Wiley, 2012.		
3	C. Anton-Haro, M. Dohler, Machine-to-machine (M2M) Communications: Architecture, Performance and Applications, Elsevier, 2014.		
4	D. Ibrahim, Raspberry Pi 3 -Raspberry Pi 3 - Basic to Advanced Projects, Elektor International Media, 2018.		
5	D. Ibrahim, Android App Development for Electronics Designers, Elektor International Media, 2018.		

Number of classes of active education per week during semester/trimester/year				
Lectures	**Exercises**	**OFE**	**Study and research work**	**Other classes**
2	1	2	0	0
Teaching methods	Lectures, practical and laboratory exercises, consultations.			

Grade (maximum number of points 100)			
Pre-exam duties	**Points**	**Final exam**	**Points**
Activity during lectures	10	**Written exam**	20
Exercises	50	**Oral exam**	20
Colloquia			
Projects			