

Specification for the book of courses

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|---|--|---|--------------------------------|----------------------|
| 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 | | Internet of Things | | |
| Lecturer (for lectures) | | Milić N. Dejan, Milošević D. Nenad | | |
| Lecturer/associate (for exercises) | | Anastasov A. Jelena | | |
| Lecturer/associate (for OFE) | | Anastasov A. Jelena | | |
| Number of ECTS | 5 | Course status (obligatory/elective) | Elective | |
| Prerequisites | | | | |
| Course objectives | | | | |
| Introduction to concept of internet of smart objects and its significance within a wider context of future objects interconnection technologies. Considering the implications of internet of things expansion, as well as potential problems and solutions. Practical experience in relayation of modules and system elements for intelligent objects. | | | | |
| Course outcomes | | | | |
| <ul style="list-style-type: none"> - Students will be able to briefly explain functioning of the internet as the global network, as well as the concept and working principles behind internet of smart things - Understanding role and significance of the internet of smart things at economic and social level. - Realization of hardware and software for smart devices that are able to interact with their environment. - Choice and design of architecture and technologies required to implement smart devices. | | | | |
| Course outline | | | | |
| Theoretical teaching | | | | |
| Introduction, Standards and architecture. Protocols, Applications. Smart houses/homes. Smart cities. Digitalization and national level. IoT modules. Limited capabilities devices. Distributed signal processing. Processing of large data quantities. Sensor networks. Usage models in healthcare system. Data security issues. Communication technologies for IoT. | | | | |
| Practical teaching (exercises, OFE, study and research) | | | | |
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| Textbooks/references | | | | |
| 1 | P. Raj, A. Raman, "The Internet of Things, Enabling Technologies, Platforms, and Use Cases", CRC Press, 2017 | | | |
| 2 | A. Gilchrist, "Industry 4.0, The Industrial Internet of Things", Apress, 2016 | | | |
| 3 | S. C. Mukhopadhyay, "Internet of Things: Challenges and Opportunities, Smart Sensors, Measurement and Instrumentation", Springer, 2014 | | | |
| 4 | O.Hersent, D.Boswarthick, O.Elloumi, "The Internet of Things: Key Applications and Protocols", Willey, 2012 | | | |
| 5 | | | | |
| 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. Individual study work. Consultations, Laboratory excercises. | | | | |
| Grade (maximum number of points 100) | | | | |
| Pre-exam duties | Points | Final exam | | Points |
| Activity during lectures | 10 | Written exam | | 20 |
| Exercises | 30 | Oral exam | | 30 |
| Colloquia | 10 | | | |
| Projects | | | | |