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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | **Faculty of Electronic Engineering** |
| **GENERAL INFORMATION** |
| Study program  | **Electrical Engineering and Computing** |
| Study Module (if applicable) | Telecommunications |
| Course title | CDMA and OFDM Communications |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Nikolić B. Zorica, Milošević D. Nenad |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Getting to know the characteristics and methods of forming and OFDM and code multiplex. Introduction to the problems of synchronization of these systems and ways of overcoming them. Mastering the technique of determining capacity. Introduction to standards. Theoretical knowledge of OFDM and code multiplex. The ability to calculate system performance. Knowledge of CDMA and OFDM systems standards.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **CDMA Transmission ChannelModels. Representation of CDMA signals. The discrete channel model for synchronous transmission in a frequency-flat channel. The discrete channel model for asynchronous wideband CDMA transmission. Receiver Structures for Synchronous Transmission The single-user matched filter receiver. Optimal receiver structures . Receiver Structures for MC-CDMA and Asynchronous Wideband CDMA. The RAKE receiver. Examples for CDMA Systems: Wireless LANs according to IEEE 802.11 , Global Positioning System, Overview of mobile communication systems , Wideband CDMA, Time Division CDMA, cdmaOne, cdma2000. Implementation and Signal Processing Aspects for OFDM. Synchronization and Channel Estimation Aspects for OFDM Systems. Interleaving and Channel Diversity for OFDM Systems, Modulation and Channel Coding for OFDM Systems. OFDM System Examples.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [x]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[ ] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** |  | **Written examination** |  |
| **Practical teaching** | **50** | **Oral examination** | **50** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |