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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Telecommunications** |
| Study Module (if applicable) | Telecommunications and Signal Processing |
| Course title | Numerical Electromagnetics - Selected Chapters |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 4 |
| Name of lecturer/lecturers | Cvetković Ž. Zlata, Raičević B. Nebojša |
| Teaching mode |  [x] Lectures [x] Group tutorials [ ]  Individual tutorials [x] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Providing the basic knowledge necessary to continue to actively participate in the development of new technologies, using numerical electromagnetics, that are of interest for the development of telecommunications. Mastering the methodology of numerical solution of differential Maxwell equations in space and time, as well as the implementation of new features and components in the corresponding electromagnetic simulation environment.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Review of numerical methods for the calculation of the electromagnetic field. Finite difference time domain and the corresponding division of space. Numerical stability and dispersion of the finite difference time domain. Modeling of generators, the linear and nonlinear components and electronic assemblies. Absorbing conditions of the domain boundaries, with special emphasis on perfectly matched absorbing layer. Near-far transformation in time and frequency domain. Finite difference time domain variable spatial separation and numerical problems on the border of two domains. Development trends in the application of wireless and optical communication systems.** |
| **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** | **5** | **Written examination** | **0** |
| **Practical teaching** | **30** | **Oral examination** | **45** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |