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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | **Telecommunications**  |
| Study Module (if applicable) | Telecommunications and Signal Processing  |
| Course title | Numerical methods in telecommunications  |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | I |
| Number of ECTS allocated | 6 |
| Name of lecturer/lecturers |  Dušan M. Milošević  |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Theoretical and practical knowledge of computation methods in telecommunication.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Numerical methods in linear algebra. Analysis of errors and ill-conditioned systems. Iterative methods for solving nonlinear equations. Newton-Kantorovic's method for nelinear systems of equations. Approximation and interpolation functions. Numerical differentiation and integration. Approximate solution of differential equations. Wavelet transformation and time-frequency analysis. Classification of wavelets. Multiresolution analysis and wavelets. Wavelet decomposition and reconstruction. Gaborov's transformation.**  |
| **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** | **20** | **Written examination** | **20** |
| **Practical teaching** |  | **Oral examination** | **20** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |