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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) | Electronics |
| Course title | Approximation methods |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Goran Stancic, Vlastimir Pavlovic |
| Teaching mode |  [x] Lectures [ ] Group tutorials [x]  Individual tutorials [ ] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The expansion and upgrade of the basic knowledge acquired in the field of analog and digital signal processing with aim to adopt new approximation techniques which require concrete specific extremal approximation specifications and specific implementations which are in scope of students interest. At the same time, the optimal filter function and realization optimization are analyzed. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| The approximation problems. The magnitude approximation methods. Maximally flat characteristics. Equiripple characteristics. Least-squares approximation. Transitional characteristics. Phase characteristic approximation methods. Maximally flat phase characteristics and group delay characteristics. Phase and group delay equiripple characteristics. Interpolation technique in phase approximation. Simultaneous magnitude and phase approximation. Phase and magnitude correctors. Time domain approximation methods. Equiripple approximation. Interpolation techniques.  |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [ ]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[x] 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** |