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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Electrical Power Engineering |
| Course title | Numerical Analysis |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 3 |
| Number of ECTS allocated | 6 |
| Name of lecturer/lecturers | Stefanović Lidija, Džunić Jovana |
| Teaching mode |  [x] Lectures [x] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Getting knowledge in numerical mathematics. Students can use the gained knowledge in professional activities. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Systems of linear equations. Gauss elimination method. LR factorization. Iterative methods (with Gauss-- Seidel approach). Matrix inversion. Eigenvalues and eigenvectors. Power method. Nonlinear equations. Newton method. Secant method. Systems of nonlinear equations. Newton--Kantorovich method. Algebraic equations. Bernoulli method. Weierstrass method. Gauss--Seidel approach. Approximation of functions. Interpolation. Least squares approximation. Integration. Newton--Cotes quadrature. Composite quadrature. Gaussian quadrature. Differential equations. Euler method. Multistep methods. Runge--Kutta method. Software Mathematica. |
| **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** | **10** | **Written examination** | **20** |
| **Practical teaching** | **10+20(project)** | **Oral examination** | **20** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |