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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 | | | | Bachelor  Master’s  Doctoral | | |
| Type of course | | | | Obligatory  Elective | | |
| Semester | | | | Autumn Spring | | |
| Year of study | | | | 3 | | |
| Number of ECTS allocated | | | | 6 | | |
| Name of lecturer/lecturers | | | | Stefanović Lidija, Džunić Jovana | | |
| Teaching mode | | | | Lectures Group tutorials  Individual tutorials  Laboratory work  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** | | | | | | |
| Serbian (complete course)  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** | | | | | | |