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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of sciences and mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Mathematics** |
| Study Module (if applicable) | General mathematics |
| Course title | Introduction of numerical analysis |
| Level of study | x☐Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | x☐ Obligatory ☐ Elective |
| Semester  |  x☐ Autumn ☐Spring |
| Year of study  | 2 |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Dragana Cvetković-Ilić / Jovana Nikolov |
| Teaching mode |  x☐Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Acquiring general knowledge in and concepts of Numerical analysis as well as enabling students to successfully apply it when needed in other courses.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Iterative process. Banach fixed point theorem. Iterative process for solving some equations.Aietkenov method. Non-linear equations and systems. Newton-Kantorovic method. Gradient method. Algebraic equations. Bernouli method. Norms of the vectors and matrices. Convergence of the matrix sequences and series. Interpolations. Langrange interpolations. Newton interpolations. Localization of the eigenvalue. Numerical differential and integration. Newton-Cotes formulas.  |
| **LANGUAGE OF INSTRUCTION** |
| x☐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** | **0** | **Written examination** | **20** |
| **Practical teaching** | **0** | **Oral examination** | **20** |
| **Teaching colloquia** | **60** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |