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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Mathematics** |
| Study Module (if applicable) |  |
| Course title | Finite dimensional vector spaces |
| Level of study | xBachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory x Elective |
| Semester  | x Autumn ☐Spring |
| Year of study  | The second year |
| Number of ECTS allocated | 7 |
| Name of lecturer/lecturers | Dijana V. Mosić |
| Teaching mode | xLectures ☐Group tutorials ☐ Individual tutorials☐Laboratory work ☐ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The students will master advanced theory of linear operators on finite dimensional vector spaces.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **• Invariant subspaces and eigenvalues of linear operators. Jordan form of operators. Spectral theory of operators on finite dimensional vector space. Finite dimensional unitary spaces. Hermitian adjoint operator. Normal operator. Spectral theory of normal operators. Polar form of operators. Perturbation of Hermitian operator. Hermitian bilinear and square functional. Perturbations of eigenvalues. Transformations of similarity and eigenvalues.****• Perturbations of operators** |
| **LANGUAGE OF INSTRUCTION** |
| xSerbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ćASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** |  | **Written examination** | **40** |
| **Practical teaching** | **15** | **Oral examination** |  |
| **Teaching colloquia** | **45** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |