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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) | |  | |
| Course title | | Spectral theory of operators | |
| Level of study | | ☐Bachelor ☐ Master’s x☐ Doctoral | |
| Type of course | | ☐ Obligatory x☐ Elective | |
| Semester | | ☐ Autumn ☐Spring | |
| Year of study | | 2 | |
| Number of ECTS allocated | | 12 | |
| Name of lecturer/lecturers | | Dragan S. Đorđević | |
| Teaching mode | | x☐Lectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | |

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| *Students will master fundamental results in spectral theory of linear operators and spectral systems in Banach algebras.* |

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| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |

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| Spectra in Banach algebras. Commutative Banach alebras. Approximate point spectrum, permanently singular elements and ideals. Axiomatic spectral theory and regularities.  Spectra of operators. Operators with closed range. Kato operators, Saphar operators.  Essential Kato operators, semiregularities and spectra.  Joint spectrum of commuting families of operators. Taylor and Harte spectrum. |

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| **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** | **0** |
| **Practical teaching** | **0** | **Oral examination** | **70** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** | | | |