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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 | Introduction to topology |
| Level of study | x☐Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | x☐ Obligatory ☐ Elective |
| Semester  |  x☐ Autumn ☐Spring |
| Year of study  | 3 |
| Number of ECTS allocated | 8 |
| Name of lecturer/lecturers | Vladimir Pavlović / Marija S. Cvetković |
| 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 Topology as well as enabling students to successfully apply it when needed in other courses.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Topological spaces: definition and examples; methods of defining a topology; metric spaces; the interior, closure and boundary of a set; continuity; convergence of nets.****Natural constructions: subspaces, product spaces, quotient spaces and hyperspaces; function spaces.****Axioms of separation: T0, T1, T2, regular, completely regular spaces; normal spaces - the Urysohn's lemma and the Tietze-Urysohn's extension theorem; perfectly normal spaces.****Covering preperties: compact, countably compact and Lindelof spaces - definition and basic properties; the Alexander subbase lemma; Tychonoff's theorem; compactness in metric spaces; locally compact spaces; one point compactification.****Connectedness: definition and basic facts; connected components; quasicomponents; locally connected spaces; path conectedness.****The Nagata Smirnov metrization theorem. The Stone-Weierstrass theorem; the Arzela Ascoli theorem; topological groups; compactifications.** |
| **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** | **5** | **Written examination** | **0** |
| **Practical teaching** | **0** | **Oral examination** | **55** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |