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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** | | | | | | |