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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 | Mathematical Statistics |
| Level of study | ☐Bachelor ☐ Master’s $$ Doctoral |
| Type of course | ☐ Obligatory $$ Elective |
| Semester  |  ☐ Autumn $$Spring |
| Year of study  | First |
| Number of ECTS allocated | 12 |
| Name of lecturer/lecturers | Biljana Č. Popović |
| Teaching mode |  $$Lectures ☐Group tutorials $$ Individual tutorials ☐Laboratory work ☐ Project work $$ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
|  Introduction of the main methods of mathematical statistics inferences. The students will master the macro and micro analysis of problems of mathematical statistics and applications of mathematical statistics methods in further researches. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
|  Main statistics and their asymptotic behaviour. Transformation of statistics and sequences of independent and identically distributed random variables. Order statistics and empirical cumulative distribution. Asymptotic optimality in estimation of the unknown parameters. Maximum likelihood estimation method. Other methods of estimation. Hypothesis testing using maximum likelihood estimation. Other hypothesis testing. Comparison of different hypothesis testing. Asymptotic relative efficiency. |
| **LANGUAGE OF INSTRUCTION** |
| $$Serbian (complete course) ☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)$$Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** |  | **Written examination** | **40** |
| **Practical teaching** |  | **Oral examination** | **60** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |