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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) | Probability, statistics and financial mathematics |
| Course title | Risk theory |
| Level of study | ☐Bachelor x Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory x Elective |
| Semester  |  x Autumn ☐Spring |
| Year of study  | II |
| Number of ECTS allocated | 7.5 |
| Name of lecturer/lecturers | Prof. dr Marija Milošević |
| Teaching mode |  xLectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The purpose of this course is to provide the student with the opportunity to get knowledge of the fundamentals of the risk modelling in non-life insurance. Students should be able to apply the knowledge in the practical problems within non-life insurance.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| *Basic concepts and risk modelling in non-life insurance: risk, premium, ruin, insurance and reinsurance portfolio, claim amount.* *Claim number processes: renewal processes, counting processes, Poisson process, mixed Poisson process.* *Claim size models: subexponential distributions, regularly varying distributions, light and heavy tailed distributions.**Total claim amount process.* *Probabilistic models of individual and collective risk.* *Cramer-Lundberg model: time of ruin, probability of ruin.**Classical premium calculation principles: net principle, expected value principle, principles of variance and standard deviation.**Reinsurance models: probability of ruin, some types of reinsurance contracts.*  |
| **LANGUAGE OF INSTRUCTION** |
| xSerbian (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** | **35** |
| **Practical teaching** |  | **Oral examination** | **35** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |