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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) | | | |  | | |
| Course title | | | | Martingale Theory | | |
| Level of study | | | | ☐Bachelor ☐ Master’s x Doctoral | | |
| Type of course | | | | ☐ Obligatory x Elective | | |
| Semester | | | | ☐ Autumn xSpring | | |
| Year of study | | | | I | | |
| Number of ECTS allocated | | | | 12 | | |
| Name of lecturer/lecturers | | | | Prof. dr Miljana Jovanović | | |
| Teaching mode | | | | xLectures ☐Group tutorials ☐ Individual tutorials  ☐Laboratory work ☐ Project work ☐ Seminar  ☐Distance learning ☐ Blended learning ☐ Other | | |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** | | | | | | |
| *Fundamental knowledge in the theory of discrete and continuous martingales. Student are prepared in the martingale theory and they should be able to apply the knowledge in stochastic differential equations and their applications.* | | | | | | |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** | | | | | | |
| * Stoping time. * Martingales – discrete time. * Martingales – continuous time. * Basic martingale inequalities. * Doob – Meyer decomposition. * Square integrable martingales. * Applications. | | | | | | |
| **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** | | | | | | |