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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Economics |
| **GENERAL INFORMATION** |
| Study program  | **Economics** |
| Study Module (if applicable) | Finance and Banking |
| Course title | Financial Modeling |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | Second |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Žarko PopovićMilivoje PešićJelena Stanković |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The aim of this course is to provide the students of economics at doctoral studies with a different approach to the functioning of financial markets in terms of statistical and mathematical modeling. Course content is designed in a way that allows students to independently handled and use the methodology of price evaluation in modeling in financial markets, also that students can make optimization of the discrete and dynamic models.**After mastering the materia whic are provided for this course the students of doctoral studies can independently engaged in scientific research work in the field of discrete optimization and dynamic models that have found wide use in the financial markets.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| *1. Introduction, 2. The basic elements of probability theory, 3. The basic elements of the theory of random processes, 4. The optimization with no conditions, 5. Optimization with additional conditions, 6. Time value of money, 7. Financial instruments with fixed income, 8. Optimization of financial portfolio, 9. Models equilibrium valuation of financial assets, 10. The linear derivatives contracts, 11. The binomial option pricing model, 12. The evaluation of European option in continuous time, 13. The Black-Scholes formula, 14. The simulation models in finance, 15. The evaluation models in finance* |
| **LANGUAGE OF INSTRUCTION** |
| [x] Serbian (complete course) [ ]  English (complete course) [ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)[x] Serbian with English mentoring [ ] Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **30** | **Written examination** |  |
| **Practical teaching** |  | **Oral examination** | **50** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |