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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 | Time series analysis |
| Level of study | ☐Bachelor ☐ Master’s ☒ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  |  ☐ Autumn ☐ Spring |
| Year of study  | 2 |
| Number of ECTS allocated | 12 |
| Name of lecturer/lecturers | Miroslav M. Ristić |
| Teaching mode |  ☒Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introduction to basic and new concepts and techniques in the analysis of time series.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Stationary time series. Stationarity and strong stationarity. Autocovariance function. Stationary ARMA models. Prediction. Estimation of the unknown parameters. Multivariate time series. Multivariate ARMA models. Time series with random coefficients. Minification time series. Integer-valued autoregressive time series. |
| **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** |  |
| **Practical teaching** |  | **Oral examination** | **50** |
| **Teaching colloquia** | **50** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |