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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Technology |
| **GENERAL INFORMATION** |
| Study program  | **Textile technologies** |
| Study Module (if applicable) | *Textile engineering module* *Industrial design of textile products*  |
| Course title | Mathematical modelling  |
| Level of study | ☒Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory☒ Elective |
| Semester  | ☒ Autumn ☐Spring |
| Year of study  | 2nd |
| Number of ECTS allocated | 4 ECTS |
| Name of lecturer/lecturers | Marija Stojanović Krasić |
| Teaching mode | ☒Lectures ☐Group tutorials ☐ Individual tutorials☒Laboratory work ☐ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Mastering different methods of modelling. Students’ training for Matlab application and corresponding programmes for the need of modelling. Students are able to solve different engineering problems related to modelling process by applying corresponding software.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Lectures: 1. The concept of dynamical system model; Classification of models; Continuous and discrete models; Principles of forming mathematical models; Model parameters; Model parameters evaluation; Validation and verification of models.****2. Mathlab: Launching and organisation of Matlab; Variables; Operations in Matlab; Functions; Graphic functions; Monitoring and loading the data; Programming in Matlab; Creating of symbolic variables, expressions and functions; Linear algebra and solving equations with variables of symbolic type; Usage of optimized functions; Optimization with/without limits; Setting of basic parameters of simulation; Work with libraries, blocks, signals, data and models; Modelling with Simulink; Performing the simulations; Analysis of simulated results; Examples of modelling and simulation of the process.****Practical teaching: Calculation exercises: illustration of the teaching material along with usage of corresponding software tools.** |
| **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** | **10** | **Written examination** | **30** |
| **Practical teaching** |  | **Oral examination** | **30** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |