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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Science and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Physics** |
| Study Module (if applicable) | General physics, Applied physics, Physics and informatics  |
| Course title | Theoretical mechanics |
| Level of study | ☐Bachelor ☒ Master’s ☐ Doctoral |
| Type of course | ☒ Obligatory ☒ Elective |
| Semester  |  ☒ Autumn ☐Spring |
| Year of study  | I |
| Number of ECTS allocated | 6 |
| Name of lecturer/lecturers | Milojević Nenad/Radenković Lazar |
| 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 the methods of classical analytical mechanics. Methodical preparation for monitoring and research of other areas of theoretical physics (electrodynamics, statistical physics and quantum mechanics). |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Lagrange and Hamiltonian formalism. D'alamber-Lagrange equations for ideal systems of particles. Lagrange’s equations of motions of second kind. Lagrange’s function. Hamilton’s function. Hamilton’s equations. Central force motion. Small oscillations. Lagrange’s formalism in rigid body dynamics. Hamilton’s systems. Canonical formalism.**  |
| **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** | **5** | **Written examination** | **20** |
| **Practical teaching** | **5** | **Oral examination** | **30** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |