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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Sciences and Mathematics |
| **GENERAL INFORMATION** |
| Study program  | **Physics** |
| Study Module (if applicable) |  |
| Course title | Special Theory of Relativity |
| Level of study | ☒ Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory ☒ Elective |
| Semester  |  ☒ Autumn ☐Spring |
| Year of study  | 3 |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Dragoljub D. Dimitrijevic |
| Teaching mode |  ☒Lectures ☐Group tutorials ☐ Individual tutorials ☐Laboratory work ☐ Project work ☐ Seminar ☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The purpose of the course is to familiarize the students with the basic concept of relativity, time, space and causality. After completing this course, students should have acquired basic knowledge in the field, ability to analyze problems, developed critical thinking, adopted techniques for a serious approach to further relativistic disciplines .* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Speed of the light and addition of velocities. Michelson-Morley experiment. Einstein's postulates and consequences. Lorentz transformations. Space-time interval. Minkowski space-time. Momentum and energy. Energy-mass equivalence. Dynamics in space-time. Transformation of momentum and energy. Doppler effect. Relativistic rocket. Gravitational interaction and non-inertial systems of references. Basics of general theory of relativity.** |
| **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** | **40** | **Oral examination** | **20** |
| **Teaching colloquia** | **15** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |