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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  |  |
| **GENERAL INFORMATION** |
| Study program  | **Physics** |
| Study Module (if applicable) |  |
| Course title | Oscillations and waves |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 3 |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Ana M. Mančić |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *The objective of this course is to develop an understanding of basic concepts and ideas of the theory of oscillations and waves. After finishing this course, the students should be able to apply acquired knowledge in practice and in future education.* |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Periodic phenomena (introduction). Harmonic and coupled oscillations (quasiperiodic and chaotic oscillations). Waves (wave equations, progressive and standing waves; wave packets; linear and nonlinear waves); Dispersion, interference, reflection, wave energy, group and phase velocity...; Localization of waves (solitary waves); Fourier analysis as a tool for investigation of wave phenomena; Methods of nonlinear dynamics.** |
| **LANGUAGE OF INSTRUCTION** |
| [x] 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** |  |
| **Practical teaching** | **20** | **Oral examination** | **50** |
| **Seminars** | **20** |  |  |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |