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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) | Applied physics |
| Course title | Physical electronics |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [x]  Obligatory [ ]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 1 |
| Number of ECTS allocated | 6 |
| Name of lecturer/lecturers | Biljana M. Samardžić |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [x] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [x]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| To students meet and master the material in physical electronics. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| 1. Introduction.2. Mechanism conducting electric current in metals. 3. Mechanisms conducting in semiconductors. 4. Fundamentals of physics, p-n -junction, semiconductor– diodes. 5. Bipolar and unipolar transistors. 6. Multi-layer Si- components.7. Optoelectronic components.8. Magneto electronic components.9. Fundamentals of physics conduction in gases and vacuum. 10. Semiconductor lasers.11. Fundamentals of sensor physics.12. Internal noise in electronic circuits. 13. Principles design of integrated circuits. |
| **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** | **5** | **Written examination** | **20** |
| **Practical teaching** | **15** | **Oral examination** | **20** |
| **Teaching colloquia** | **40** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |