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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electronic Engineering  |
| **GENERAL INFORMATION** |
| Study program  | **Electronics and Microsystems** |
| Study Module (if applicable) | Electronic Devices and Microsystems |
| Course title | Medical physics |
| Level of study | [ ] Bachelor [x]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | Fifth  |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Goran Ristić |
| Teaching mode |  [x] Lectures [x] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [x]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| *Introduction to the application of ionizing and non-ionizing radiation in medicine, as well as the principle of the device in medical diagnostics and therapy. Knowledge of diagnostic and therapeutic methods in medicine, which are based on some kind of radiation, as well as the devices used for this purpose.*  |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| **Medical Diagnostics. Preparation and properties of x-rays and their application in medicine. Radiography and fluoroscopy, mammography, x-ray heart, CT scan. Preparation and properties of ultrasound, and its medical applications. The principle of magnetic resonance imaging, and applications in medical diagnostics. The use of radioisotopes in medical diagnosis and radiotherapy. PET diagnosis. The application of lasers in medicine. Application of radiofrequency and optical radiation in medical diagnosis and therapy. Devices for radiotherapy.****Practical work is carried out by calculation exercises. The solving of the concrete problems will help students to successfully overcome the areas that are addressed through theoretical lessons.** |
| **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** | **30** | **Written examination** | **35** |
| **Practical teaching** |  | **Oral examination** | **35** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |