# Specification for the book of courses

| | | | | |
|---|---|---|---|---|
| **Study program** | | | Electronics and Microsystems | |
| **Module** | | | Electronics and Microsystems | |
| **Type and level of studies** | | | Master studies | |
| **The name of the course** | | | Medical Physics | |
| **Lecturer (for lectures)** | | | Ristić S. Goran | |
| **Lecturer/associate (for exercises)** | | | Živanović N. Emilija | |
| **Lecturer/associate (for OFE)** | | | | |
| **Number of ECTS** | 5 | | **Course status (obligatory/elective)** | Elective |
| **Prerequisites** | | | | |
| **Course objectives** | Introduction to application of the ionizing and non-ionizing radiation in medicine, as well as the principle of basic methods of medical diagnostics. | | | |
| **Course outcomes** | Knowledge of diagnostic and therapeutic methods in medicine that are based on the ionizing and non-ionizing radiation, and the equipment is used in that purpose | | | |
| **Course outline** | | | | |
| **Theoretical teaching** | Medical diagnostics. X-rays and X-ray characteristics and their application in medicine. Radiography and fluoroscopy, mammography, X-ray, computer tomography. Digital Flat Panel X-ray Appliances. The production and the characteristics of ultrasound and its application in medicine. Principle of magnetic resonance, and its application in medical diagnostics. Use of radioisotopes in medical diagnostics and radiotherapy. PET diagnostics. Electrocardiography, Laser application in medicine. Application of radiofrequency and optical radiation in medical diagnostics and therapy. Radiotherapy devices. | | | |
| **Practical teaching (exercises, OFE, study and research** | Practical classes take place through computational exercises. Concrete problems are solved during computational tutorials in order to make students more easily and successfully master certain areas that are covered in theoretical classes. | | | |
| **Textbooks/references** | | | | |
| 1 | G. S. Ristic, Medical Physics, Script, Faculty of Electrical Engineering Nis (in Serbian) | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |
| **Number of classes of active education per week during semester/trimester/year** | | | | |
| **Lectures** | **Exercises** | **OFE** | **Study and research work** | **Other classes** |
| 2 | 2 | 0 | | |
| **Teaching methods** | Lectures, computational exercises and consultations | | | |
| **Grade (maximum number of points 100)** | | | | |
| **Pre-exam duties** | | **Points** | **Final exam** | **Points** |
| **Activity during lectures** | | | **Written exam** | 30 |
| **Exercises** | | | **Oral exam** | 30 |
| **Colloquia** | | 40 | | |
| **Projects** | | | | |