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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | **Electronic Engineering** |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Electronic Devices and Microsystems |
| Course title | Optoelectronics |
| Level of study | ☒Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☒ Obligatory Elective |
| Semester  | ☐ Autumn ☒Spring |
| Year of study  | 4 |
| Number of ECTS alocated | 6 |
| Name of lecturer/lecturers | PaunovićV. Vesna/Davidović S. Vojkan |
| Teaching mode | ☒Lectures ☒Group tutorials ☒ Individual tutorials☒Laboratory work ☒ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Introduction to the light properties, light sources and detectors, and optoelectronic circuits and systems.Increased knowledge and practical mastery of optoelectronic techniques and technologies of optoelectronic components and systems |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Optics, electronics, classical and quantum electrodynamics and statistical physics as the basis of optoelectronics. The dual nature of light. Emission, propagation and absorption of light. Prognosis and design of optoelectronic materials and discrete optoelectronic components. Quantum optoelectronics. Spontaneously and stimulated emission of light. Masers and lasers. Electro-optic and piezoelectric materials and components. Optoelectronic devices in the computer (liquid crystal and TFT displays, readers and scanners, storage units, copiers) and telecommunications (cathode ray tubes, switches, semiconductor, ceramic and other special displays, modulators and demodulators) devices and systems. Nanomaterials and optoelectronic technology. Design, construction and development base excitation optoelectronic circuits. |
| **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** | **30** | **Written examination** |  |
| **Practical teaching** | **20** | **Oral examination** | **30** |
| **Teaching colloquia** | **20** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |