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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty**  | Faculty of Electrical Engineering |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Telecommunications-Radiocommunication engineering and technologies |
| Course title | Microwave Electronics |
| Level of study | [x] Bachelor [ ]  Master’s [ ]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [ ]  Autumn [x] Spring |
| Year of study  | 4 |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Pronić-Rančić R. Olivera, Maleš-Ilić P. Nataša, Marković V. Vera |
| Teaching mode |  [x] Lectures [ ] Group tutorials [ ]  Individual tutorials [ ] Laboratory work [ ]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Knowledge of the principles of operation and design of devices at microwave frequencies. Capability for modeling microwave devices in microwave circuit simulators. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Matching circuits. RF and microwave amplifiers. Design of amplifiers for maximum gain. Low-noise amplifiers. Wideband amplifiers. Power amplifiers - basic features and applications. Classes of power amplifiers. Harmonic balance analysis. RF and microwave oscillators. Principle of operation and characteristics of oscillators. Transistor oscillators. Phase noise. Mixers. Detectors. Modulators. Microwave control circuits.Auditory exercises. Solving of problems using microwave circuit simulators. |
| **LANGUAGE OF INSTRUCTION** |
| [ ] Serbian (complete course) [x]  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** |