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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 |
| Course title | RF and Microwave Amplifiers |
| Level of study | [ ] Bachelor [ ]  Master’s [x]  Doctoral |
| Type of course | [ ]  Obligatory [x]  Elective |
| Semester  |  [x]  Autumn [ ] Spring |
| Year of study  | 2 |
| Number of ECTS allocated | 10 |
| Name of lecturer/lecturers | Maleš-Ilić P. Nataša  |
| Teaching mode |  [ ] Lectures [ ] Group tutorials [x]  Individual tutorials [x] Laboratory work [x]  Project work [ ]  Seminar [ ] Distance learning [ ]  Blended learning [ ]  Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| Acquire knowledge of linear and non-linear transistor models as well as transistor noise models. Introduce the structure of RF and microwave amplifiers for low-noise and high power applications. Ability to design and fabricate amplifiers.Introduce the techniques for high efficient and linear amplifiers. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Models of microwave transistors (MOSFET, MESFET, HEMT, BJT, HBT)-models for small signals, nonlinear models, noise modeling. Procedure of low-noise amplifier design. Power amplifiers in class- A, AB, B, C. High-efficient power amplifiers (Class-F, inverse F, D, E, J. ..). Linearization techniques. Techniques for increasing efficiency of microwave amplifiers.Solving selected problems in the form of seminar. Analysis and optimization of RF and microwave amplifiers by using specialized software packages. Practical work in laboratory. |
| **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** |  | **Written examination** |  |
| **Practical teaching** | **50** | **Oral examination** | **50** |
| **Teaching colloquia** |  | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |