

Course Unit Descriptor

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| Study Programme: Microelectronics | | | |
| Course Unit Title: Nano devices and Nano materials | | | |
| Course Unit Code: EM512 | | | |
| Name of Lecturer(s): Goran Stojanović | | | |
| Type and Level of Studies: Master Academic Degree | | | |
| Course Status (compulsory/elective): compulsory | | | |
| Semester (winter/summer): winter | | | |
| Language of instruction: english | | | |
| Mode of course unit delivery (face-to-face/distance learning): face-to-face | | | |
| Number of ECTS Allocated: 6 | | | |
| Prerequisites: none | | | |
| Course Aims: Students acquire knowlege in the field of nanodevices (nanotubes, nanowires, nanocomponents) and nanostructures. | | | |
| Learning Outcomes: Students who complete the course are able to: -understand occurrences in nanodevices (nanotubes, nanowires, nanocomponents), -design nanotransistors, nanosensors, nanoswitches, -determine the basic properties of nanomaterials | | | |
| Syllabus: The introduction to nanodevices and nanomaterials. Nanotubes, nanowires and nanocomponents. Fullerenes. Nanostructured biomolecular electronics. Nanotransistors, nanoswitches, nanosensors. Nanocrystal alloys. The growth and characterization of nanostructured thin film. Mechanical properties- solidity, elasticity, sintering. Thermal and magnetic properties of nanomaterials. Polymers as nanomaterials. Determining optical properties of nanomaterials. Nanomagnetic materials | | | |
| Required Reading: Relevant literature in English TBD | | | |
| Weekly Contact Hours: 5 | | Lectures: 3 | |
| | | Practical work: 2 | |
| Teaching Methods: Lectures. Auditory practice. Computer practice. Laboratory practice. Tutorial work | | | |
| Knowledge Assessment (maximum of 100 points): 100 | | | |
| Pre-exam obligations | points | Final exam | points |
| Laboratory exercise defence | 30 | Written part of the exam - tasks and theory | 70 |
| Coloquium exam | 25 | | |
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| The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc. | | | |