

## Specification for the book of courses

<b>Study program</b>		Electrical Engineering and Computer Science		
<b>Module</b>		Electron Devices and Microsystems		
<b>Type and level of studies</b>		Undergraduate Academic Studies		
<b>The name of the course</b>		Electronic Materials		
<b>Lecturer (for lectures)</b>		Paunović V. Vesna, Pešić M. Biljana		
<b>Lecturer/associate (for exercises)</b>		Marjanović B. Miloš, Paunović V. Vesna		
<b>Lecturer/associate (for OFE)</b>		Marjanović B. Miloš		
<b>Number of ECTS</b>		6	<b>Course status (obligatory/elective)</b>	Obligatory
<b>Prerequisites</b>				
<b>Course objectives</b>		Introduction to the microstructural properties of inorganic (conducting, semiconducting, dielectric, magnetic and superconducting) and organic electronics materials .		
<b>Course outcomes</b>		Students acquire the necessary knowledge about the types and properties of materials for electronic components and devices. The obtained knowledge is important for further successful study of several subjects at BSc and MSc studies.		
<b>Course outline</b>				
<b>Theoretical teaching</b>		Introduction. Electronics materials and electronics devices. Conductors: definitions and general properties, metals, alloys, non-metallic conductors, application. Semiconductors: definitions and general properties, semiconductors, semiconductor compounds and alloys, application. Dielectrics: definitions, mechanisms of polarization, the static and dynamic properties, special dielectrics, application. Magnetic materials: definitions and general relations, types of magnetic materials, applications. Superconductors: phenomenology of superconductivity, applications. Organic materials and application.		
<b>Practical teaching (exercises, OFE, study and research)</b>		Practical and laboratory exercises concerning conducting, semiconducting, dielectric and magnetic materials		
<b>Textbooks/references</b>				
1		W.D.Callister, "Materials Science And Engineering an introduction, John Wiley&Sons Ltd, 2003		
2		S. O. Kasap, Principles of Electronic Materials and Devices, McGraw-Hill, 2017		
3		K.M. Gupta, Nishu Gupta, Advanced Electrical and Electronics Materials: Processes and Applications, John Wiley & Sons, 2015		
4		W. D. Callister, D.G.Rethwisch, Materials Science and Engineering, John Wiley & Sons Inc, 2014		
5		Eugene A. Irene, Electronic materials science, John Wiley & Sons, Inc.2005		
<b>Number of classes of active education per week during semester/trimester/year</b>				
<b>Lectures</b>	<b>Exercises</b>	<b>OFE</b>	<b>Study and research work</b>	<b>Other classes</b>
2	2	1	0	0
<b>Teaching methods</b>		Lectures, consultations, laboratory and practical exercises		
<b>Grade (maximum number of points 100)</b>				
<b>Pre-exam duties</b>		<b>Points</b>	<b>Final exam</b>	<b>Points</b>
<b>Activity during lectures</b>		5	<b>Written exam</b>	25
<b>Exercises</b>		20	<b>Oral exam</b>	25
<b>Colloquia</b>		20		
<b>Projects</b>		5		