

Study program: Electrical and Computing Engineering				
Type and level of studies: Doctoral studies (third level of studies)				
Course unit: Advanced Magnetic Materials				
Teacher in charge: Nebojša Mitrović				
Language of instruction: English				
ECTS: 15				
Prerequisites: -				
Semester: Summer				
Course unit objective				
Preparing for research work in the field of advanced magnetic materials.				
Learning outcomes of Course unit				
Establishing sithesys-structure-properties correlation on the basis of theoretical background and measurement of the whole set of magnetic characteristics.				
Course unit contents				
<i>Theoretical classes</i>				
Magnetic properties of materials. Measurements of magnetic characteristics. Advanced technologies of magnetic materials preparation. Soft magnetic materials and their applications. Hard magnetic materials and their applications.				
Analysis of scientific papers devoted to advanced magnetic materials.				
<i>Practical classes</i>				
Candidates perform their research work on experiment preparation and do magnetic measurements of hysteresys curves. Analysis of experimental results and writing scientific paper, as a possible theme for doctoral dissertation.				
Literature				
[1] S. Chikazumi, <i>Physics of Magnetism</i> , Malabar, FL: Kreiger 1978.				
[2] R. M. Bozorth, <i>Ferromagnetism</i> , IEEE Pres, New York, 2001.				
[3] R. Boll, <i>Soft Magnetic Materials</i> , Vacuumschmeltze, Hanau, 1993.				
[4] A. Inoue, <i>Bulk Amorphous Alloys, Preparation and Fundamental Characteristics</i> , Trans Tech Publications, Ueticon Zurich, 1998.				
[5] A. Inoue, K. Hashimoto (ed.), <i>Amorphous and Nanocrystalline Materials</i> , Springer-Verlag, Berlin 2001.				
[6] K. H. J. Buschow, <i>Handbook of Magnetic Materials</i> , Vol. 15, Elsevier, B.V. Amsterdam, 2003.				
[7] Science journals in the field of magnetic materials: <i>Journal of Magnetism and Magnetic Materials</i> , <i>IEEE Transaction on Magnetic</i> , <i>Applied Physics Letters</i> , <i>Materials Science and Engineering B</i>				
Number of active teaching hours				Other classes
Lectures: 3	Practice: 5	Other forms of classes	Independent work: 2	
Teaching methods Lessons, consultations, study and research work				
Examination methods (maximum 100 points)				
Exam prerequisites	No. of points:	Final exam	No. of points:	
Student's activity during lectures	5	oral examination	50	
Practical classes/tests	15	written examination		
Seminars/homework	-		
Project	30			
Other				
Grading system				
Grade	No. of points		Description	
10	91-100		Excellent	
9	81-90		Exceptionally good	
8	71-80		Very good	
7	61-70		Good	
6	51-60		Passing	
5	less than 50		Failing	