Study program: Electrical and Computing Engineering

Type and level of studies: Doctoral studies (third level of studies)

Course unit: Solid-state Physics

Teacher in charge : Aleksandra Kalezić-Glišović

Language of instruction: English

ECTS: 10

Prerequisites: -

Semester: Winter

Course unit objective

The acquired knowledge should provide research basis in technical-technological sciences.

Learning outcomes of Course unit

Student is qualified to apply the adopted terms and methods to independent analysis of mechanical, electrical and magnetic properties of the solids.

Course unit contents

Theoretical classes

Crystal lattice geometry. Interaction types between particles of the solids. Structure of real crystals. Mechanical properties. Thermal properties. The band theory of solids. Electrical conductivity. Magnetic properties. Superconductivity. Amorphous and nanocrystal materials.

Practical classes

The investigation methods of mechanical, electrical and magnetic properties of the solids.

Literature

[1] A. Inoue, K. Hashimoto, *Amorphous and Nanocrystalline Materials*, Springer – Verlag Berlin Heidelberg New York, 2001.

[2] J. D. Patterson, B. C. Bailey, *Solid-State Physics, Introduction to the Theory,* Springer Berlin Heidelberg New York, 2007.

[3] R. Haug (Ed.), *Advances in Solid State Physics,* Springer Berlin Heidelberg New York, 2008.

[4] A. Rigamonti, P. Carretta, *Structure of Matter,* Springer Berlin Heidelberg New York, 2007.

Number of active teaching hours				**Other classes**
Lectures: 4	Practice: 3	Other forms of classes	Independent work:	

Teaching methods Lessons, consultations.

Examination methods (maximum 100 points)

Exam prerequisites	**No. of points:**	**Final exam**	**No. of points:**
Student's activity during lectures		oral examination	**60**
Practical classes/tests		written examination	
Seminars/homework	**40**		
Project			
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