

COURSE GUIDE – short form

Academic year 2018-2019

Course name	SPECIAL METALLIC MATERIALS SCIENCE (2)					Course code	4EPI12DS		
Course type	DS	Category	DO	Year of study	4	Semester	2	Number of credit points	8

Faculty	Materials Science and Engineering	Number of teaching and learning hours						
Field	Mechanical Engineering	Total	L	T	LB	P	IS	
Specialization	Equipment for industrial processing	70	42		28		28	

Pre-requisites from the curriculum	Compulsory	
	Recommended	

General objective	A thorough knowledge of correlations between composition, structure, properties and uses of materials in order to identify technical-economic problems achieve the right decisions for their choice for various industrial and scientific applications and for implementation of some approaches based on coherent scientific arguments regarding correct operation of parts or assemblies in service, compliance with the requirements of quality engineering.
Specific objectives	Recognition of materials using their properties and different methods of investigation. Materials selection depending on the application. Investigation of materials characteristics and properties. Developing skills for elaborating specific reports and scientific articles.
Course description	Magnetic metal materials. Composite materials. Cellular metallic materials and metallic foams. Metallic materials with shape memory. Amorphous metal materials. Sintered metal materials with special properties. Metallic materials for nuclear power. Materials for metal soldering. Metallic materials for batteries/accumulators. Thin metal layers (films). Metallic materials for solar energy. Metallic materials for geothermal energy. Metallic materials used in hydrogen-based energy. Metallic biomaterials.

Assessment		Schedule	Percentage in the final grade (minimum grade)
A. Final assessment form:	Class tests along the semester	%	50% (minimum 5)
	Home works	%	
	Other activities	%	
	Examination procedures and conditions: 1. Category: theoretical; subject with open questions; conditions: oral; weight in final grade: 50%; 2. Category: theoretical; subject with open questions; conditions: oral; weight in final grade: 50%.	100% (minimum 5)	
B. Seminar	Activity during seminar		% (minimum 5)
C. Laboratory	Activity during laboratory		50% (minimum 5)
D. Project	Activity during project		% (minimum 5)

Course organizer	Associate professor PH.D. eng. Ioan RUSU
Teaching assistants	Assist. PH.S. eng. Constantin MIREA