

COURSE GUIDE – short form

Academic year 2024-2025

Course name	Materials science and engineering (2)					Course code		1.EPI.11.DD	
Course type	DD	Category	DI	Year of study	1	Semester	2	Number of credit points	5

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				120	28		28		64

Pre-requisites from the curriculum	Compulsory	
	Recommended	

General objective	Thorough knowledge of correlations between composition, structure, properties and uses of materials (based on basic knowledge and concepts, theories and specific methods for mechanical engineering) in order to achieve a material rational choice for various industrial and scientific applications, choosing and using an accurate obtaining and processing technology for metallic materials and for correct operation of parts or assemblies service.
Specific objectives	<p>Recognition of materials using their properties and different methods of investigation.</p> <p>Materials selection depending on the application.</p> <p>Investigation of materials characteristics and properties.</p> <p>Developing skills for elaborating specific reports and scientific articles.</p> <p>Knowledge of materials processing technologies.</p> <p>Choosing processing technology according to the part/material requirements.</p> <p>Developing skills for elaborating specific reports and scientific articles.</p>
Course description	Metallic materials. Ceramic materials. Composite materials. Semiconductors. Smart materials. Notions regarding amorphous materials. Special destination metallic materials. Service behavior of the metallic materials.

Assessment			Schedule	Percentage in the final grade (minimum grade)
A. Final assessment form: Exam	Class tests along the semester	%	Session	70% (minimum 5)
	Home works	%		
	Other activities	%		
	Examination procedures and conditions: 1. Category: theoretical; subject with open questions; conditions: oral; weight in final grade: 20%; 2. Category: theoretical; subject with open questions; conditions: oral; weight in final grade: 20%; 3. Category: theoretical; solving problem; conditions: oral; weight in final grade: 30%; 4. Category: theoretical; solving problem; conditions: oral; weight in final grade: 30%.	100% (minimum 5)		
B. Seminar	Activity during seminar			% (minimum 5)
C. Laboratory	Activity during laboratory			30% (minimum 5)
D. Project	Activity during project			% (minimum 5)

Course organizer	Lecturer PhD. Eng. Alin Marian CAZAC
Teaching assistant	Associate professor dr. eng. Ioan RUSU