

# COURSE GUIDE – short form

Academic year 2024-2025

Course name	<b>Composite Materials</b>					Course code	4.SM.12.DS-1		
Course type	DS	Category	DI	Year of study	IV	Semester	7	Number of credit points	4

Faculty	Materials Science and Engineering	Number of teaching and learning hours						
Field	Materials Engineering	Total	L	T	LB	P	IS	
Specialization	Materials Science	100	28	-	14	-	58	

Pre-requisites from the curriculum	Compulsory	Chemistry; Physics
	Recommended	Physical Chemistry

General objective	Application of the criteria and methods of fundamental assessment to identify, to modeling, analysis and assessment of qualitative and quantitative phenomena, as well as characteristic processes and theories, and to process and interpret the results of specific composite materials processes.
Specific objectives	The discipline "Composite Materials" allows the student to develop skills on: - acquiring the most advanced knowledge concerning the phenomena and processes occurring in the manufacture of composite materials; - understanding and explanation of complex issues relating the structure, the matrix-reinforcement compatibility, the properties and the specific applications of composite materials.
Course description	Course: Chapter 1. General considerations on the composite materials; Chapter 2. Thermodynamics and kinetics of processes at the matrix-reinforcement interface; Chapter 3. Synthesis techniques of composite materials; Chapter 4. Properties evaluation of composite materials; Chapter 5. Composite materials. Allegations of specific works. Discussion board. Conclusions. Applications: 2. Determination of contact angle between liquid metal and reinforcing material. 3. Determination of superficial tension of matrix alloys. 4. The processing of composite materials with ceramic particles and the matrix from aluminum alloys. 5. Obtaining of foam-type composite materials with aluminum alloy matrix. 6. Obtaining of composite materials with HEA alloys particles. 7. Recoveries.

Assessment		Schedule	Percentage of the final grade (minimum grade)
Continuous assessment	Activity during tutorials/laboratory works/projects/practical work		30%
Final assessment	Final assessment form	Examination	70%
	Examination procedures and conditions: 1. exam tickets; task: subject 1; conditions: oral; weight in final grade: 50%; 2. exam tickets; task: subject 1; conditions: oral; weight in final grade: 50%;		

Course organizer	Lecturer dr. eng. Raluca-Maria Blanariu
Teaching assistants	Lecturer dr. eng. Raluca-Maria Blanariu