

COURSE GUIDE – short form

Academic year 2024 – 2025

Course name ¹	INDUSTRIAL SYSTEMS FOR HEAT TREATMENTS AND UNCONVENTIONAL THERMOCHEMICAL TREATMENTS				Discipline code	SITM IA 203			
Course type ²	DA	Category ³	DI	Year of study	2	Semester	3	Number of credit points	5

Faculty	Material Science and Engineering				Number of teaching and learning hours ⁴					
Field	Mechanical Engineering				Total	L	T	LB	P	IS
Specialization	SITM				125	28	-	14	-	83

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	

General objective ⁶	Heat and thermochemical treatments using laser, plasma, electron beam or other advanced methods used in materials processing.
Specific objectives ⁷	Knowledge, analysis, design and efficient used and effective and appropriate use of heat treatments and thermochemical technologies used in machinery industry.
Course description ⁸	<p>Introduction</p> <p>I. The opportunity of special heat treatment processes and unconventional used in machinery industry.</p> <p>II. Heat and thermochemical treatment in the ultrasound field.</p> <p>III. Heat treatment in magnetic field.</p> <p>IV. Heat and thermochemical treatment with plasma heat.</p> <p>V. Heat treatment with fast and ultrafast heating.</p> <p>VI. Heat and thermochemical treatment in fluidized bed.</p>

Assessment		Schedule ⁹		Percentage of the final grade (minimum grade) ¹⁰
A. Final assessment form ¹¹ Exam	Class tests along the semester	%	week	75 % (minimum 5)
	Home works	25 %	Week 7	
	Other activities	%	week	
	Examination procedures and conditions: 1. -, working conditions -, percent %; 2. -, working conditions -, percent %; 3. -, working conditions -, percent %	75 % (minimum 5)	exam period	
B. Seminar	Activity during seminar			% (minimum 5)
C. Laboratory	Activity during laboratory			25 % (minimum 5)
D. Project	Activity during project			% (minimum 5)
Course organizer	Lecturer Eng. Ph.D. Bălțatu Mădălina Simona			
Teaching assistants	Lecturer Eng. Ph.D. Bălțatu Mădălina Simona			

¹Course name from the curriculum

² DF – fundamental, DD – in the field, DS – specialty, DC – complementary (from the curriculum)

³ DI – imposed, DO – optional, DL – facultative (from the curriculum)

⁴ Points 3.8, 3.5, 3.6a,b,c, 3.7 from the Course guide – extended form (L-lecture, T-tutorial, LB-laboratory works, P-project, IS-individual study)

⁵ According to 4.1 – Pre-requisites - from the Course guide – extended form

⁶ According to 7.1 from the Course guide – extended form

⁷ According to 7.2 from the Course guide – extended form

⁸ Short description of the course, according to point 8 from the Course guide – extended form

⁹ For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period

¹⁰ A minimum grade might be imposed for some assessment stages

¹¹ Exam or colloquium