

COURSE GUIDE – short form

Academic year 2024 - 2025

Course name ¹	THERMAL AND THERMOCHEMICAL TREATMENTS				Discipline code	4 SM 04			
Course type ²	DS	Category ³	DI	Year of study	4	Semester	7	Number of credit points	6

Faculty	Material Science and Engineering				Number of teaching and learning hours ⁴					
Field	Materials Engineering				Total	L	T	LB	P	IS
Specialization	SM				150	42	-	28	14	66

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	Chemistry, Physics, Study of materials

General objective ⁶	Study of technologies used for thermal and thermochemical treatments for finalizing properties of the material to be exploited
Specific objectives ⁷	Knowledge, analysis, efficient design and effective and appropriate use of thermal treatments and thermochemical technologies used in the industry of machinery
Course description ⁸	<p>I. Introduction. The purpose of heat treatments.</p> <p>II. The link between equilibrium diagrams and thermal treatments applied.</p> <p>III. Thermal parameters and specific temporal for heat treatments and thermochemical technologies.</p> <p>IV. Primary thermal treatment technology.</p> <p>V. Steels quenching technology; Quench implementing technology solution; Martensitic hardening technology; Shallow hardening.</p> <p>VI. Annealing technology.</p> <p>VII. Thermochemical treatments.</p>

Assessment		Schedule ⁹		Percentage of the final grade (minimum grade) ¹⁰
A. Final assessment form ¹¹ exam	Class tests along the semester	%	week	50 % (minimum 5)
	Home works	%		
	Other activities	%	week	
	Examination procedures and conditions: 1. Subject with open questions, working conditions oral, percent 100 %; 2. -, working conditions -, percent %; 3. -, working conditions -, percent %	100 % (minimum 5)	exam period	
B. Seminar	Activity during seminar		% (minimum 5)	
C. Laboratory	Activity during laboratory		25 % (minimum 5)	
D. Project	Activity during project		25 % (minimum 5)	
Course organizer	Lecturer Ph.D. Eng. Mirabela Minciuna			
Teaching assistants	Lecturer Ph.D. Eng. Mirabela Minciuna			

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