C O U R S E G U I D E – s h o r t f o r m

Academic year 2024-2025

Course name[1]	THERMAL TREATMENTS					Course code		3.ISI.13.DD-1	
Course type[2]	DD	Category[3]	DO	Year of study	3	Semester	6	Number of credit points	3

Faculty	Material Science and Engineering	Number of teaching and learning hours[4]					
Field	Industrial Engineering	Total	L	T	LB	P	IS
Specialization	Safety Engineering in Industry	75	28	-	28	-	19

Pre-requisites from the curriculum[5]		
	Compulsory	-
	Recommended	-

General objective [6]	The discipline aims to create a logical chain starting from the mechanical characteristics of metallic materials, their position in relation to the ideal values and the ways of modifying these characteristics through heat treatment. The structure and properties of steels and cast irons are analyzed in particular, and implicitly the structural transformations developed through heat treatments. The theoretical and technological bases of the main thermal treatments are presented. The approach to heat treatment technologies is made so that the theoretical principles can be applied in solving practical problems specific to the industry.
Specific objectives[7]	• By carrying out practical work within the discipline, the premises for the effective participation of young students are created, starting with theoretical research, planning the experiment, establishing the experimental conditions, managing the technological process, acquiring and processing data, verifying the results through specific tests and complex analyses, finalizing the conclusions. It is appreciated that the described approach allows for an instructive, complete and useful process.
Course description[8]	thermal treatment, structure, properties, thermal cycle, annealing, stress relief, tempering, martensite, tempering; improvement, sipping, aging, steel, cast iron, alloy

Assesment			Sche-dule[9]	Percentage in the final grade (minimum grade)[10]
A. Final assessment form [11]: ~~Exam /~~ Colloquium	Class tests along the semester	%		60% (minimum 5)
	Home works	%		
	Other activities	%		
	Examination procedures and conditions:exam.oral Probe 1: working conditions; percent of the final grade %; Writing exam with 3 subjects from the theoretical part of the course.	100% (minimum 5)	Week 14	
C. Laboratory	Acttvity during laboratory			40% (minimum 5)

Course organizer	Asociate Professor PhD. Eng. Ioan Gabriel SANDU	
Teaching assistants	Asociate Professor PhD. Eng. Ioan Gabriel SANDU	

[1]Course name from the curriculum
[2] DF – fundamental, DID – 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