

COURSE GUIDE – short form

Academic year 2024-2025

Course name ¹	Metallic materials (1)					Course code	3SM06DS			
Course type ²	DS	Category ³	DI	Year of study	3	Semester	6	Number of credit points	4	

Faculty	Faculty of Materials Science and Engineering					Number of teaching and learning hours ⁴					
Field	Materials Engineering					Total	L	T	LB	P	IS
Specialization	Materials Science					100	28	-	28	-	44

Pre-requisites from the curriculum ⁵	Compulsory	Not applicable
	Recommended	Not applicable

General objective ⁶	Use of knowledge of physical chemistry, physical metallurgy, thermodynamics of alloys for smelting a metal load in the processing unit (and outside of it), in order to obtain a melt to pour raw cast iron parts, compliant in terms of quality and economic efficiency.
Specific objectives ⁷	Knowledge of cast iron grades, processing units specific to this alloy, analysis of the technological stages of charge smelting in a processing unit (and outside of it) necessary for the production of raw cast iron parts.
Course description ⁸	The course is taught by modern teaching methods and contains the following chapters: 1. Introduction (6 hours): Cast iron industry: past, present and future, Cast irons: Definition. Classification criteria. Grades; 2. Metal bath processing (12 hours): Liquid phase, Smelting of cast iron in the cupola, Smelting of cast iron in units with electric heating, Control of the chemical composition of the metal bath during the smelting; 3. Cast iron modification (6 hours): Inoculation, Modification; 4. Physic-chemical and mechanical properties of cast irons (4 hours).

Assesment			Schedule ⁹	Percentage in the final grade (minimum grade) ¹⁰
A. Final assessment form ¹¹ :	Class tests along the semester	0%		60% (minimum 5)
	Home works	0%		
	Other activities	%		
	Examination procedures and conditions: Oral exam., 2 subjects on the ticket.	100% (minimum 5)	week 14	
B. Seminar	Activity during seminar			
C. Laboratory	Activity during laboratory			40 % (minimum 5)
D. Project	Activity during project			

Course organizer	Lecturer PhD eng. Daniela Chicet	
Teaching assistants	Lecturer PhD eng. Daniela Chicet	

¹Course 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