

COURSE GUIDE – short form

Academic year 2024-2025

Course name ¹	Modeling and simulation in materials processing (2)					Course code	4IPM15DS-1		
Course type ²	DS	Category ³	DI	Year of study	IV	Semester	VIII	Number of credit points	5

Faculty	Materials Science and Engineering	Number of teaching and learning hours ⁴						
Field	Materials Engineering	Total	L	T	LB	P	IS	
Specialization	Materials Processing Engineering	125	14	-	14	-	97	

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	Computer programming and programming languages. Using of computer in statistical analysis. Mathematical analysis. Numerical analysis

General objective ⁶	The association of knowledge, principles and methods from technical sciences domain with the principles and methods used in the analysis, modeling and optimization of technological processes
Specific objectives ⁷	<ul style="list-style-type: none"> • Knowledge of statistical and mathematical methods for the obtaining of mathematical models that describe the functional links between input and output variables of metallurgical processes. • Optimization of processes specific to the processing of metallic materials (thermal and thermo-chemical treatments, plastic deformation).
Course description ⁸	Optimization of plastic deformation and thermal treatment of steels. Optimization of forging technological process.

Assesment			Schedule ⁹	Percentage in the final grade (minimum grade) ¹⁰
A. Final assessment form ¹¹ :	Class tests along the semester	20%	Week 7	70% (minimum 5)
	Home works	20%	Week 14	
	Other activities	%		
	Examination procedures and conditions: Colloquium One subject in the course topics; oral presentation and answers to specialty questions	60% (minimum 5)	Week 14	
B. Seminar	Activity during seminar			% (minimum 5)
C. Laboratory	Activity during laboratory			30% (minimum 5)
D. Project	Activity during project			% (minimum 5)

Course organizer	Prof. phd. eng. Nicanor CIMPOEȘU
Teaching assistants	Lecturer phd. eng. Daniela Lucia 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