

COURSE GUIDE – short form

Academic year 2021-2022

Course name ¹	Modeling and Simulation in Materials Science (1)				Course code	4SM03DS			
Course type ²	DS	Category ³	DI	Year of study	4	Semester	7	Number of credit points	3

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	75	14	-	14	-	47

Pre-requisites from the curriculum ⁵	Compulsory	-
	Recommended	-

General objective ⁶	Evaluation and technical problem-solving related materials processed by applying concepts, theories and experimental methods.
Specific objectives ⁷	<ul style="list-style-type: none"> • Understanding the notion of model and methods of modeling metallurgical processes in terms of complexity and the multitude of variables and parameters that characterize them. • Modeling metallurgical processes through the balance of materials and energy. • Knowledge of statistical-mathematical methods for obtaining statistical-mathematical models that describe the functional links between the parameters of metallurgical processes and their performance.
Course description ⁸	Technological processes. The concept of model and types of models. Applications of mathematical statistics to the processing and interpretation of experimental data. Empirical mathematical models.

Assesment		Schedule ⁹	Percentage in the final grade (minimum grade) ¹⁰
A. Final assessment form ¹¹ :	Class tests along the semester	-	70% (minimum 5)
	Homework	-	
	Other activities	-	
	Examination procedures and conditions: I. Subject with open questions; tasks: answer to open questions; working conditions: oral; percent of the final grade 100 % Onsite/online evaluation	100 % (minimum 5)	
Exam / Colloquium			
C. Laboratory	Activity during laboratory		30 % (minimum 5)

Course organizer	Prof. dr. eng. Romeu CHELARIU
Teaching assistants	Assistant dr. eng. Elena Ionela CHERECHEȘ

¹Course name from the curriculum

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

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

⁴Points 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)

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

⁶According to 7.1 from the Course guide – extended form

⁷According 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

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

¹⁰A minimum grade might be imposed for some assessment stages

¹¹Exam or colloquium