

# COURSE GUIDE – short form

Academic year 2021-2022

Course name <sup>1</sup>	<b>Modeling and Simulation in Materials Science (2)</b>					Course code	4SM09DS		
Course type <sup>2</sup>	DS	Category <sup>3</sup>	DI	Year of study	4	Semester	8	Number of credit points	4

Faculty	Faculty of Materials Science and Engineering	Number of teaching and learning hours <sup>4</sup>					
Field	Materials Engineering	Total	L	T	LB	P	IS
Specialization	Materials Science	100	28	-	42	-	30

Pre-requisites from the curriculum <sup>5</sup>	Compulsory	-
	Recommended	-

General objective <sup>6</sup>	Combining the knowledge, principles and methods of the technical sciences of the field with the principles and methods used in the analysis, modeling and optimization of metallurgical processes.
Specific objectives <sup>7</sup>	<ul style="list-style-type: none"> <li>Knowledge of statistical and mathematical methods for obtaining mathematical models describing functional relations between the input and output variables of metallurgical processes.</li> <li>Optimization of metallurgical processes by specific methods.</li> </ul>
Course description <sup>8</sup>	First-order factorial experimental programs. Second-order factorial experimental programs. Optimization without constraints of the metallurgical processes. Optimization with constraints of the metallurgical processes through linear programming.

Assesment		Schedule <sup>9</sup>	Percentage in the final grade (minimum grade) <sup>10</sup>
A. Final assessment form <sup>11</sup> :	Class tests along the semester	-	70 % (minimum 5)
	Home works	-	
	Other activities	-	
	Examination procedures and conditions: 1. Subject with open questions; tasks: answers to open questions; working conditions: oral; percent of the final grade 50 % 2. Subject with open questions; tasks: answers to open questions; working conditions: oral; percent of the final grade 50 %	100 % (minimum 5)	
B. Seminar	Activity during seminar		-
C. Laboratory	Activity during laboratory		30 % (minimum 5)
D. Project	Activity during project		-

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

<sup>1</sup>Course name from the curriculum

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

<sup>3</sup>DI – imposed, DO – optional, DL – facultative (from the curriculum)

<sup>4</sup>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)

<sup>5</sup>According to 4.1 – Pre-requisites - from the Course guide – extended form

<sup>6</sup>According to 7.1 from the Course guide – extended form

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<sup>7</sup> According to 7.2 from the Course guide – extended form

<sup>8</sup> Short description of the course, according to point 8 from the Course guide – extended form

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

<sup>10</sup> A minimum grade might be imposed for some assessment stages

<sup>11</sup> Exam or colloquium