

# COURSE GUIDE – short form

Academic year 2018-2019

Course name <sup>1</sup>	<b>Vacuum deposition techniques I</b>				Course code	1 MATAE DA 04			
Course type <sup>2</sup>	DS	Category <sup>3</sup>	DI	Year of study	5	Semester	1	Number of credit points	6

Faculty	Materials Science and Engineering	Number of teaching and learning hours <sup>4</sup>					
Field	Materials Engineering	Total	L	T	LB	P	IS
Specialization	Advanced materials and experimental analysis techniques	70	28		14		28

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

General objective <sup>6</sup>	Initiating students into knowledge processes in vacuum deposition of thin films. It will deepen the knowledge of the state of vacuum, means for obtaining vacuum, phase transformations, means of obtaining vacuum.
Specific objectives <sup>7</sup>	<ul style="list-style-type: none"> <li>• Identifying the role of vacuum deposition techniques in the field of Materials Engineering.</li> <li>• learning and appropriate use of concepts vacuum deposition techniques;</li> <li>• Learning theoretical methods, procedures and devices usual deposition of thin films;</li> <li>• Learning theoretical methods and means of characterization of thin films deposited in vacuum.</li> </ul>
Course description <sup>8</sup>	Introduction Status vacuum Means of obtaining vacuum. Elements of kinetic theory of gases. Vacuum thermal evaporation. Ionization of gases and vapors. Physical Basis of magnetron cathode spraying Structure, composition, porosity and adhesion layer deposited by thermal evaporation Spraying. Physical Fundamentals of vacuum thermal evaporation

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	20%	week 7	70% (minimum 5)
	Home works	%		
	Other activities	%		
	Examination procedures and conditions: Probe 1: theoretical question; open questions of course, working conditions: oral; percent of the final grade: 30%; Probe 2: theoretical question; open questions of course, working conditions: oral; percent of the final grade: 30%; Probe 3: theoretical question; open questions in the lab, working conditions: oral; percent of the final grade: 40%	50% (minimum 5)		
B. Seminar	Activity during seminar			% (minimum 5)
C. Laboratory	Activity during laboratory			30% (minimum 5)
D. Project	Activity during project			% (minimum 5)

Course organizer	Sef lucr. Ioan Gabriel Sandu	
Teaching assistants	Sef lucr. Ioan Gabriel Sandu	

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<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

<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