

COURSE GUIDE – short form

Academic year 2017 - 2018

Course name ¹	SURFACE ENGINEERING					Codul disciplinei	5 TAIPM 07			
Course type ²	DS	Category ³	DI	Year of study	1M	Semester	2	Number of credit points	6	

Faculty	Material Science and Engineering					Number of teaching and learning hours ⁴					
Field	Materials Engineering					Total	L	T	LB	P	IS
Specialization	TAIPM					42	28	-	14	-	70

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	

General objective ⁶	Discipline prepare the specialists in the field of design, control and exploitation of treatments for the surface and near-surface regions.
Specific objectives ⁷	Knowledge of the phenomena that underlie the field of treatments specific for surface engineering, of the different procedures and conditions specific to modified the surface properties must be for aesthetics, oxidation resistance, hardness, or other considerations.
Course description ⁸	<p>Surface engineering is "treatment of the surface and near-surface regions of a material to allow the surface to perform functions that are distinct from those functions demanded from the bulk of the material." These surface-specific functions include protecting the bulk material from hostile environments, providing low - or high - friction contacts with other materials, serving as electronic circuit elements, and providing a particular desired appearance. This Course describes surface modifications for applications such as structural components, in which the bulk material properties are the primary consideration and the surface properties must be modified for aesthetics, oxidation resistance, hardness, or other considerations.</p> <p>The techniques covered may be divided broadly into three categories:</p> <ul style="list-style-type: none"> - Techniques to prepare a surface for subsequent treatment - Techniques to cover a surface with a material of different composition or structure - Techniques to modify an existing surface topographically, chemically, or microstructurally

Assessment		Schedule ⁹	Percentage of the final grade (minimum grade) ¹⁰
Continuous assessment	Class tests along the semester -	week	%
	Activity during tutorials/laboratory works/projects/practical work		40 %
	Assignments -	week	%
Final assessment	Final assessment form ¹¹	exam	60 % (minimum 5)
	Examination procedures and conditions: 1. Subject with open questions ; tasks answer to open questions ; working conditions oral; percent 50 %; 2. Subject with open questions ; tasks answer to open questions ; working conditions oral; percent 50 %; 3. - ; tasks - ; working conditions - ; percent %;		

Course organizer	Professor Ph.D. Eng. Dan Gelu GALUSCA	
Teaching assistants	Professor Ph.D. Eng. Dan Gelu GALUSCA	

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