

COURSE GUIDE – short form

Academic year 2014-2015

Course name ¹	Elements of the Theory of Plasticity					Course code	IM.314.DO. DS-1		
Course type ²	DS	Category ³	DO	Year of study	III	Semester	6	Number of credit points	3

Faculty	Mechanical Engineering	Number of teaching and learning hours ⁴							
Field	Mechanical Engineering	Total	L	T	LB	P	IS		
Specialization	Mechanical Engineering	42	28			14	56		

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	Strength of Materials

General objective ⁶	The course provides a basis theory of plasticity for calculus in elasto-plastic range and plastic deformation
Specific objectives ⁷	<ul style="list-style-type: none"> • dislocations and plastic deformation • understanding and comparison of the yielding criteria for plane stress • stresses and strain in elasto-plastic range • residual stresses
Course description ⁸	<p>Plastic yielding criteria, introduction to plastic deformation, idealised flow curves.</p> <p>The simple torsion of a straight circular cylinder within the elasto-plastic range. Residual stresses in the torsion within the elasto-plastic range.</p> <p>The simple bending of a prismatic beam within the elasto-plastic range. Residual stresses in the bending within the elasto-plastic range</p> <p>The elasto-plastic state of a thin walled tube subjected to both internal and external pressure</p>

Assessment			Schedule ⁹	Percentage of the final grade (minimum grade) ¹⁰
Continuous assessment	Class tests along the semester		week 5, week10	15%
	Activity during tutorials/laboratory works/projects/practical work		weeks1-13	20%
	Assignments		weeks 2-12	15%
Final assessment	Final assessment form ¹¹	colloquium	week 14	50%
	Examination procedures: The written test theoretical topics and applications			

Course organizer	Associate Professor Florentina Mocanu	
Teaching assistants	Associate Professor Florentina Mocanu	

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