C O U R S E G U I D E – s h o r t f o r m

Academic year 2014 - 2015

Course name[1]	**Residual Stresses**					Course code		MDET.DI.DA.210	
Course type[2]	DA	Category[3]	DI	Year of study	II	Semester	2	Number of credit points	6

Faculty	of Mechanical Engineering	Number of teaching and learning hours[4]					
Field	Mechanical Engineering – Master studies	Total	L	T	LB	P	IS
Specialization	Diagnosis and Technical Expertise in Mechanical Engineering	154	28	-	14	-	112

Pre-requisites from the curriculum[5]		
	Compulsory	
	Recommended	

General objective [6]	Formation/development/profound study of capabilities necessary within the processes of designing, manufacturing, diagnosis, appraisement of mechanical structures in terms of or after breakdowns, taking into account the residual stresses existing in the parts. Knowledge and control of residual stress condition can lead to the increase of bearing capacity, service life, safety in exploitation and quality, as well as in the decrease of the breakdown number during machines, structures and equipment operation.
Specific objectives[7]	● Course: Within this discipline will be studied and assimilated the main causes of the formation of residual stresses, their effects, methods for their determination, as well as stress-relief methods. The discipline contributes to the preparation of specialists highly qualified for designing, investigations, appraisals and expertise in mechanical engineering. The principles exposed at the course, verified in practice and applied in designing, construction and maintenance of machines, equipment and structures, are able to confer a higher safety in operation at an acceptable price. ● Applications: Several methods for residual stresses determination will be assimilated and applied within the laboratory
Course description[8]	Residual stresses- definition, causes of their appearance, classification, generation, effects, principles of residual stress determination, destructive, semi-destructive and non-destructive methods for the determination of residual stresses, stress-relief methods.

Assessment			Schedule[9]	Percentage of the final grade (minimum grade)[10]
Continuous assessment	Class tests along the semester			
	Activity during tutorials/laboratory works/projects/practical work		Weeks 1 - 14	30 %
	Assignments		Week 14	30 %
Final assessment	Final assessment form[11]	Exam	Exam period	40 %
	Examination procedures and conditions: Oral exam 1. Approaching a subject concerning the general topic of residual stresses; percent of the final grade 50% 2. Approaching a subject concerning the methods for residual stress determination; percent of the final grade 50%			

Course organizer	Prof. dr. eng. AMARIEI Nicuşor	
Teaching assistants	Lecturer dr. eng. LEIȚOIU Bogdan	

[1]Course 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