

COURSE GUIDE – short form

Academic year 2014-2015

Course name ¹	Advanced FEA, AFEA					Course code	MDET.DO .DA.206-1		
Course type ²	DID	Category ³	DO	Year of study	2	Semester	2	Number of credit points	6

Faculty	Mechanical Engineering	Number of teaching and learning hours ⁴						
Field	IM	Total	L	T	LB	P	IS	
Specialization	DETIM	122	28	-	14	-	80	

Pre-requisites from the curriculum ⁵	Compulsory	-
	Recommended	Experimental Stress Analysis

General objective ⁶	AFEA is to develop general or professional skills using the Finite Element Analysis, FEA, in order to study the behavior of some components in Mechanical Engineering.
Specific objectives ⁷	<ul style="list-style-type: none"> It shows specific aspects of modeling of nonlinear problems in Mechanical Engineering. It shows the concepts: CFD, multiphysics, MES, Mechanical Event Simulation.
Course description ⁸	I.Theoretical basis of FEA applied in Mechanical Engineering. II. Material models. III. FEA non-linear. IV. Python language V. Internet Resources and E-learning in the fields of FEA-CAE. VI. CFD, The concepts: „ <i>Multiphysics</i> “. MES, “ <i>Mechanical Event Simulation</i> ” VII. The structures optimization by use of FEA.

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		Week 1-12	50%
	Assignments		Week 11-12	25%
Final assessment	Final assessment form ¹¹		Week 13-14	25%
	Examination procedures and conditions: 1 Oral answer ; percent of the final grade 10 % 2 Practical demonstration ; percent of the final grade 15 % .			

Course organizer	Assoc. Prof. Dr. Eng. Mihail Aignatoaie	
Teaching assistants	Assoc. Prof. Dr. Eng. Mihail Aignatoaie	

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