

COURSE GUIDE – short form

Academic year 2014 – 2015

Course name ¹	Hybrid vehicles and unconventional propulsion systems					Course code	ISPA.409.DI.DS		
Course type ²	DS	Category ³	DI	Year of study	IV	Semester	8	Number of credit points	4

Faculty	of Mechanical Engineering	Number of teaching and learning hours ⁴					
Field	Automotive Engineering	Total	L	T	LB	P	IS
Specialization	Automotive Vehicles Propulsion Systems Engineering	98	28			14	56

Pre-requisites from the curriculum ⁵	Compulsory	Basics of internal combustion engines 1, Electrical Engineering and Electrical Machines
	Recommended	Heat Engineering and heating

General objective ⁶	The course "Hybrid vehicles and unconventional propulsion systems" aims to familiarize students with the propulsion systems of motor vehicles other than those based on classical internal combustion engines. The major objective of the course is to demonstrate that considering all conditions imposed tougher pollution builders get interesting hybrid propulsion systems engine - electric motor, electric propulsion, or MAGLEV. Variants are discussed and combined gas turbine - electric drive or hydraulic systems, which is suitable for recovery braking energy. The focus is on highlighting the advantages and disadvantages of each system, especially in economically and technically.
Specific objectives ⁷	The knowledge gained by students in the course "Hybrid vehicles and unconventional propulsion systems" are in close accordance with the objectives of the curriculum specialization ISPA (propulsion systems), diversification of propulsion is a major requirement in building cars. The course provides students with computing energy efficiency schemes and therefore economic, the different types of propulsion, shows how various systems can be combined in order to achieve the proposed objectives, or imposed by the beneficiaries.
Course description ⁸	The course includes the following major sections: -Propellants based on gas turbine -Gas turbine engines and gas generator sets free (TGPL) -Pila Fuel -Driving electric motor vehicles -Air-cushion vehicles -Propulsion magnetic pillow – MAGLEV -Inland suspended guide

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 – week 14	20%
	Assignments		Week 1 – week 14	30%
Final assessment	Final assessment form ¹¹	Exam	Session	50%
	Examination procedures and conditions: 1. ; tasks ; working conditions ; percent of the final grade 50%			

	2. ; tasks ; working conditions ; percent of the final grade 50%	
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Course organizer	Professor, PhD. Eng. Edward RAKOSI	
Teaching assistants	Lecturer, PhD. Eng. Sorinel Gicu TALIF	

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