

COURSE GUIDE – short form

Academic year 2014-2015

Course name ¹	AUTOMOTIVE ELECTRIC AND ELECTRONIC EQUIPMENT					Course code	AR 311		
Course type ²	DS	Category ³	DI	Year of study	3	Semester	6	Number of credit points	5



Faculty	MECHANICAL				Number of teaching and learning hours ⁴				
Field	Automotive Engineering				Total	L	T	LB	P IS
Specialization	Road Vehicle				70	42		28	

Pre-requisites from the curriculum ⁵	Compulsory	Mathematics, Physics, Electronics, Electrical Engineering
	Recommended	Automotive Fundamentals: Computation, Design and Construction; Vehicle Dynamics; Control Theory

General objective ⁶	The course of "AUTOMOTIVE ELECTRIC AND ELECTRONIC EQUIPMENT" is structured as a specialized teaching discipline for the students involved in Ground Vehicle Engineering area. The course main targets ensure to the students the knowledge concerning the operating principles of main electrical and electronic on board equipment in a modern car. The course presents the electrical and electronic devices and equipment used to start, supply management, ignition for MAS, operation control and reducing emissions, setting regulators, parameters adaptation and OBD self-diagnostics for internal combustion engine performance.
Specific objectives ⁷	<ul style="list-style-type: none"> Alkaline Battery; Vehicle starting system; Battery Ignition System On board power generations; Alternator theory, Ignition System, Spark plugs Gasoline Engine Management Diesel direct injection systems; Common Rail systems Control and monitoring of exhaust gas emissions Vehicle lighting systems Vehicle network, CAN, LIN, FlexRay, MOST On board Diagnosis OBD
Course description ⁸	Specialized discipline " AUTOMOTIVE ELECTRIC AND ELECTRONIC EQUIPMENT" offers to the students a knowledge base (cognitive competence) in the technical field of automotive engineering, especially directed to the construction and operation of electrical/electronic control obtaining as results competent professional extensive professional interest in activities such as the construction and operation of motor vehicles, insurance, technical expertise, troubleshooting, testing and diagnosis of ground vehicles, promoting issues of PhDs, etc. Program participants contribute to projects and gain experience that complements their courses of study.

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			40%
	Assignments			%
Final assessment	Final assessment form ¹¹			60%
	Examination procedures and conditions: 1. ; tasks ; working conditions ; percent of the final grade % 2. ; tasks ; working conditions ; percent of the final grade %			

	3.	
--	----	--

Course organizer	Assist. Prof. PhD.Eng. Radu Drosescu	
Teaching assistants	Assist. Prof. PhD.Eng. Radu Drosescu	

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