

# COURSE GUIDE – short form

Academic year 2014-2015

Course name <sup>1</sup>	<b>Automotive Mechatronics</b>					Course code	MCT.412. DO.DS-1		
Course type <sup>2</sup>	Ds	Category <sup>3</sup>	Di	Year of study	IV	Semester	7	Number of credit points	

Faculty	Mechanical Engineering	Number of teaching and learning hours <sup>4</sup>						
Field	Mechatronics and Robotics	Total	L	T	LB	P	IS	
Specialization	Mechatronics	56	28	-	28	-	-	

Pre-requisites from the curriculum <sup>5</sup>	Compulsory	Electrotechnics and electrical rotating machines . Fluid and pneumatic power. Automated systems and technical regulation. Sensory systems . Micro electromechanical systems (MEMS ). Components of mechatronics . Operation of mechatronic systems
	Recommended	Technical Drawing and infographics . Mechanisms . Machine parts . Computer Aided Design . Electrical Engineering and Electrical Machines. Automatic systems.

General objective <sup>6</sup>	General knowledge of the automobile as mechatronic system performance and general constructive principles .
Specific objectives <sup>7</sup>	<ul style="list-style-type: none"> <li>- Presentation of the main mechatronic systems in automotive components;</li> <li>- Engine and transmission management;</li> <li>- Mechatronics of the steering system;</li> <li>- Braking mechatronics;</li> <li>- Main operation of automotive sensors and actuators;</li> <li>- Presentation of safety systems in running on and stationary situations.</li> </ul>
Course description <sup>8</sup>	Overview on cars design. Basic components . Mechatronic systems in automotive components . Sensors and actuators in automotive technology . Construction and operation . Operation of injection devices . Safety braking systems . ABS . The stability of the chassis . Active suspension . Safety systems in running on and stationary situations.

Assessment			Schedule <sup>9</sup>	Percentage of the final grade (minimum grade) <sup>10</sup>
Continuous assessment	Class tests along the semester			20 %
	Activity during tutorials/laboratory works/projects/practical work			30 %
	Assignments			%
Final assessment	Final assessment form <sup>11</sup>	Exam		50 %
	Examination procedures and conditions: 1. Written test; percent of the final grade 60 % 2. Practical skills ; percent of the final grade 40 %			

Course organizer	Prof.eng. Flavian FARCAS ME Ph.D.	
Teaching assistants	Prof.eng. Flavian FARCAS ME Ph.D.	

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<sup>1</sup>Course name from the curriculum

<sup>2</sup> DF – fundamental, DID – in the field, DS – specialty, DC – complementary (from the curriculum)

<sup>3</sup> DI – imposed, DO –optional, DL – facultative (from the curriculum)

<sup>4</sup> 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)

<sup>5</sup> According to 4.1 – Pre-requisites - from the Course guide – extended form

<sup>6</sup> According to 7.1 from the Course guide – extended form

<sup>7</sup> According to 7.2 from the Course guide – extended form

<sup>8</sup> Short description of the course, according to point 8 from the Course guide – extended form

<sup>9</sup> For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period

<sup>10</sup> A minimum grade might be imposed for some assessment stages

<sup>11</sup> Exam or colloquium