

COURSE GUIDE – short form

Academic year 2014 - 2015

Course name ¹	Mechanisms					Course code	203.DI.DID		
Course type ²	DID	Category ³	DI	Year of study	II	Semester	3	Number of credit points	7

Faculty	Mechanical Engineering	Number of teaching and learning hours ⁴					
Field	Automotive Engineering Mechanical Engineering Mechatronics and Robotics	Total	L	T	LB	P	IS
Specialization	SET, AR, MAIA, MCT, ROB, IM	98	56		28	14	

Pre-requisites from the curriculum ⁵	Compulsory	
	Recommended	Applied Mechanics, Mathematics

General objective ⁶	Understanding of the fundamental concepts of kinematics and dynamics of mechanisms.
Specific objectives ⁷	Skills for dimensional synthesis of linkages, cams and gear mechanisms to perform desired motion specifications. Ability to use modern engineering tools necessary for solving engineering problems.
Course description ⁸	<i>Introduction to Mechanisms</i> : basic concepts, link and joint types, kinematic chains, mechanisms mobility, linkage transformations, structure analysis. <i>Linkage Mechanisms</i> : kinematic analysis of planar and spatial mechanisms, kinetostatic analysis, synthesis of planar mechanisms. <i>Cam Mechanisms</i> : terminology and classifications, displacement diagrams, kinematic analysis, kinetostatic analysis, cam design. <i>Gear Trains</i> : terminology and gear types, the fundamental law of gearing, gear ratio, spur and helical gears, bevel gear, worm gears, epicyclic gear trains, design of compound gear trains. <i>Dynamics of mechanisms and machines</i> : dynamic models, phases of machine motion, flywheels, balancing of mechanisms and machines.

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	50 %
	Assignments			%
Final assessment	Final assessment form ¹¹	Exam	Exam period	50 %
	Examination procedures and conditions: 1. Written test; percent of the final grade 50 % 2. Presentation specific problems; percent of the final grade 50 %			

Course organizer	Professor Cezar Opreșan, Ph.D.	
Teaching assistants	Sn. lecturer Vasile Merticaru, Ph.D. Sn lecturer Florentin Buium, Ph.D.	

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