

Course Unit Descriptor

Study Programme: Mechanization and Construction Engineering			
Course Unit Title: Mechanisms in Mechatronics			
Course Unit Code: H570			
Name of Lecturer(s): Čavić Maja			
Type and Level of Studies: Master level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction: English			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated: 5			
Prerequisites: None			
Course Aims: Introduction to specific mechanisms, improvement of skills of dynamic analysis and mechanisms synthesis.			
Learning Outcomes: Ability to apply specific mechanisms in practical problems as well as performing dynamic analysis of mechanisms in real conditions. Application of mechanisms synthesis methods in practical problems.			
Syllabus: Transmissions with variable gear ratio. Harmonic drive. Planetary-differential gears. Freewheel mechanism. Cam mechanisms. Mechanisms with intermittent motion. Clutch and brake mechanisms. Universal joint. Fundamentals of spatial mechanisms. Reduced mass and moment of inertia. Reduced power and torque. Equations of mechanism motion. Speed control of mechanical systems. Flywheel sizing. General conditions of mechanism efficiency. Mechanism synthesis for the prescribed kinematic task. Graphical and analytical synthesis methods of mechanisms for motion generation, path generation and mechanisms for function generation. Mechanism synthesis for the prescribed dynamic task. Cam mechanisms synthesis.			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 5		Lectures: 2	Practical work: 3
Teaching Methods: Lectures, graphic and computer practical classes, consultation.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Group assignment		Examination Assignment	
Exercises			
Test			
Test			
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam, project presentation, seminars, etc.			