

Study program / course: Mechanical Engineering				
Type and level of study: Academic studies (bachelor degree)				
Course: Fluid Power				
Lecturers: Gordić R. Dušan, Šušteršič M. Vanja				
Status of course: obligatory for module M ₄ , VI semester				
Number of ECTS: 6				
Precondition: Passed exams: Thermodynamics, Fluid Mechanics				
The objective of course To introduce to students basic principles of fluid power (industrial hydraulics, oil hydraulics and hydropower transmissions): basic symbols of components, principles of its functioning, mathematic modelling (stationary analysis) of the components and basic hydraulic systems and hydropower transmissions.				
The outcome of course Upon the completion of the course students will be capable to: 1. understand the basic principles of operation and mathematic modelling of fluid power hydraulic components, 2. understand the ways of components selection in hydraulic fluid power system design, 3. choose and integrate commercially available components in hydraulic fluid power systems that are most frequent in industrial, process and mobile machineries, 4. apply learned technical principles, ideas and theories into real-life applications.				
Syllabus Theoretical study Working fluids and its physical properties, Recapitulation of basic principles of one-dimensional steady flow, Positive displacement hydraulic machinery (pumps, hydromotors, hydrocylinders), Valves (directional control, pressure, flow, check), Auxiliary components (accumulator, hoses and tubing, reservoir, filters, gaskets), Principles of design and production of basic hydraulic systems, Hydrodynamic transmissions				
Practical classes: Exercises include auditory (solving of concrete mathematical problems related to stationary modelling of components) and laboratory (analysis of physical models of components and presentation of basic hydraulic systems)				
Recommended reading 1. Gordić, D.: Fluid Power Hydraulics, MFKG, 2007., Kragujevac (In Serbian) 2. Vuković, V.: Introduction to hydro-pneumatic technique, STYLOS, Novi Sad, 1998. (In Serbian) 3. Šušteršič, V.: Hydropower transmissions, script, available electronically (In Serbian)				
The number of hours of active teaching:				Other classes: 1
Theory: 3	Practical classes: 0.6	Other forms of teaching: 0.4	Research study: 0	
Methods of teaching Lecturing include theoretical classes and exercises (auditory and laboratory). Lecturing is covered with multimedia. Evaluation of knowledge is performed through colloquiums and homework during the semester.				
Evaluation of knowledge (the maximum number of points 100)				
Pre-final exam obligations	points	Final exam	points	
Activities during the classes:	10	Written exam:		
Colloquiums:	30	Oral exam:	45	
Homework:	15			