Course Unit Descriptor

Study Programme: Energy And Process Engineering
Course Unit Title: Hydraulic and Pneumatic Systems
Course Unit Code: M35I42
Name of Lecturer(s): Tašin Slobodan, Bikić Siniša
Type and Level of Studies: Master Academic Degree
Course Status (compulsory/elective): elective
Semester (winter/ summer): summer
Language of instruction: english
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated: 4
Prerequisites: none
Course Aims:. Acquiring knowledge and skills necessary for the design and analysis of complex oil-hydraulic and pneumatic systems.
Learning Outcomes: Design and analysis of complex oil-hydraulic and pneumatic systems in water supply and water treatment plants, petrochemical plants and plants for processing and distribution of natural gas.
Syllabus. Definition of hydraulic and pneumatic systems. Basic components of hydraulic and pneumatic systems. Developing hydraulic and pneumatic systems: defining the task, determining the type of transmission, defining the process as a whole and in phases, setting up the circuit diagram, labelling. Basic hydraulic and pneumatic circuit diagrams: circuit diagrams with switch valves, speed control circuit diagrams, time-dependent control circuit diagrams, pressure-dependent control circuit diagrams, travel-dependent circuit diagrams, guided/ logical control circuit diagrams, self-sustaining circuit diagrams, Hydraulic and pneumatic servo systems. Electro-hydraulic and electro-pneumatic systems. Hydraulic systems with volume control of the drive and/or the actuator.
Required Reading: Relevant literature in English, tbd

Weekly Contact Hours: 2	**Lectures: 2**	**Practical work: 1**

Teaching Methods: Lectures, numerical practice, computational practice, laboratory practice.
Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Attendance			
Computer exercises			
Tests (4x)			