

Study Programme: Energy And Process Engineering			
Course Unit Title: Energy storage			
Course Unit Code: M35I41			
Name of Lecturer(s): Stepanov Borivoj			
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: The increasing use of renewable energy sources requires more intensive and more efficient energy storage. In this course, students will learn about the available technologies for the storage of all types of energy.			
Learning Outcomes: Acquisition of theoretical and practical knowledge of energy storage technologies. Students will be trained to assess the needs and potential of energy storage in power systems.			
Syllabus. Primary energy storage (solid fuels, liquid fuels, gaseous fuels), Thermal energy storage (technology based on water, molten salt technology); Steam accumulator; storage of mechanical energy (spring, compressed air energy storage, flywheel energy storage, hydraulic accumulator, storage potential energy of water), storage of electricity (electrochemical forms of energy storage, batteries, fuel cells); electric energy storage (capacitors), storage of biological energy (starch, glycogen).			
Required Reading: Relevant literature in English, tbd			
Weekly Contact Hours: 2		Lectures: 2	Practical work: 0
Teaching Methods: Lectures and theoretical exercises. The exam is written. The rating is based on the success of the oral and written exam, and the presence in lectures and exercises.			
Knowledge Assessment (maximum of 100 points):			
Pre-exam obligations	points	Final exam	points
Attendance			
Computer exercises			
Tests (4x)			

