

Level: master			
Course title: Microwave Organic Synthesis			IHO-502
Status: elective			
ECTS: 6			
Requirements: none			
Learning objectives Acquiring knowledge about the microwave catalyzed reactions in organic synthesis, enabling students to apply the microwave methodology in organic synthesis, self-planning and execution of the microwave synthesis and critical analysis of the results. Qualifying for independent learning and further professional development.			
Learning outcomes Students should be able to demonstrate advanced knowledge and understanding of microwave organic synthesis; choose, plan, design and conduct microwave organic synthesis; accurately and clearly record, analyze and interpret the results with risk assessment and environmental impact; successfully communicate with professionals in the same or another scientific field or discipline; plan further professional development.			
Syllabus <i>Theoretical instruction</i> Theory of microwave radiation, conduction and dipolar polarization mechanism. The effect of microwaves on the heating, acceleration and yields of synthetic processes. Specific microwave effects. Microwave household oven and microwave reactors. Basic techniques of microwave synthesis: the reaction in the absence of solvent, phase-transfer catalysts, synthesis on inorganic supports. Water as a solvent, non-polar solvents and ionic solvents. Microwave synthesis in closed and open systems. <i>Practical instruction</i> Selected synthesis on a small scale in open and closed system microwave reactor <i>CEM Discover Bench Mate</i> .			
Weekly teaching load			Other:
Lectures: 2	Exercises: 2	Other forms of teaching:	