

Course title: Kinetics and chemical thermodynamics						
	Specialty	Semester	Number of ECTS	Number of hours in the class	Form	
	Foreign students	winter	3	30	Lab class	
Name of lecturer: Dr. Dagmara Jacewicz						
Objective of the course (expected learning outcomes and competences to be acquired)						
<p>- a continuation and extension of the course of inorganic, physical and coordination chemistry</p> <p>- the aim of the course is to acquaint students with the fundamental procedures of the examination of the chemical compounds that are generally used in various chemical industries, in a scientific research and in a quality control laboratories</p> <p>- this laboratory is intended to familiarize students with a designing of an experiment, an interpretation of the data and the methods of a visualization and a presentation of the results</p> <p>- a presentation the most important contemporary issues related to the study of the kinetics and thermodynamics of chemical complexes</p> <p>- a development of the ability for planning and carrying out a single-handed experiments as well as for interpreting obtained data</p>						
Prerequisites: none						
Teaching methods: Laboratory experiments						
Course contents						
The kinetic and thermodynamic properties of coordination compounds. Stable and unstable complexes, inert and labile complexes. Factors affecting stability of complexes. The thermodynamic parameters of chemical reactions. The spectroscopic properties of complexes. Kinetics and reaction mechanisms in coordination compounds, conformational changes between reactant and product complexes. The thermal properties of transition metal complexes. Thermogravimetric analysis. Differential thermal analysis. Calorimetry.						
Recommended reading:						
<p>A. Primary literature:</p> <p>A.1. Literature used during classes:</p> <p>Materials provided by tutors</p> <p>S. Gaisford, M. A. A. O'Neill, "Pharmaceutical Isothermal Calorimetry", Informa Healthcare USA, Inc., NY (2007)</p> <p>J. Keeler, "Kinetics of Chemical Reactions", University of Cambridge, Department of Chemistry, 25, IA Chemistry 2002/03</p>						
Assessment methods:						
<ul style="list-style-type: none"> • Mid-term tests • Reports 						
Language of instruction: English						