Level: master

Course title: Inorganic reactions mechanism

# Status: elective

# **ECTS**: 6

Requirements: Inorganic Chemistry II and Physical Chemistry I

### Learning objectives

- Gaining knowledge about the reaction mechanisms of formation of coordination and organometallic compounds.
- Expanding knowledge about homogeneous catalysis in the formation of complex compounds.
- Introduction to the activation and reactions of coordinated ligands.
- Expanding knowledge of redox reactions in the formation of complex compounds.
- Gaining knowledge about the kinetics of synthesis of complex compounds.

## Learning outcomes

Students should be able to:

1. explain the most important mechanisms of the formation of coordination and organometallic compounds;

2. explain the role of catalysts in the formation of complex compounds;

3. list and explain the role of redox reactions in the formation of complex compounds;

4. demonstrate knowledge about kinetics of formation of coordination compounds

5. plan conditions and implement appropriate control algorithms for obtaining the desired coordination compound.

### Syllabus

Theoretical instruction

The basic kinetic principles. Ligand substitution reaction in octahedral, square-planar and tetrahedral complexes. Trans-metallation. Mechanisms of homogeneously catalyzed reactions. Redox reactions.

#### Practical instruction

Investigation of the mechanism of a chosen protolytic reaction, ligand substitution reaction and a fast redox reaction.

Weekly teaching load				Other:
Lectures:	Exercises:	Other forms of	Student research:	
2	2	teaching: 1		