Level: master

Course title: Biologically active compound and xenobiotics

Status: elective

#### **ECTS**: 5

### Requirements: none

#### Learning objectives

- Obtaining systematic knowledge and understanding of the principles of biologically active effects elements and biotransformation of xenobiotics.
- The application of knowledge in the modern chemical industry, where the students are prepared for the modern work in their profession.
- Development of critical awareness about new information in the processed scientific area.

## Learning outcomes

Students should be able to understand the importance of biologically active compounds and xenobiotics and their effects on a number of pathological conditions in biological systems; to automatically choose the appropriate methodology in solving unfamiliar problems, plan and carry out the experiments; accurately and clearly record, analyze and interpret the results and formulate appropriate conclusions of possible products of chemical reactions of biologically active elements based on the knowledge of the reaction mechanisms; successfully communicate with the researchers in the same or related scientific field; search appropriate literature independently and write the articles on the selected topic.

# Syllabus

# Theoretical instruction

The study of the chemical structure, chemical and physical properties of biologically active elements and their compounds. The theory of oxygen toxicity and biological effects of toxic forms of oxygen. Xenobiotics - definition, classification, structure and properties. Their role in the body and mechanisms of action. Influence of xenobiotics on oxidative stress. Toxicity of xenobiotics, the possibility of their transformation into radical forms, which result in the appearance of a number of pathological conditions in the body.

## Practical instruction

It complies with the lectures and will include literature processing data based on the specified topics and discussion of the subject.

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