

Name of discipline	Complex compounds with application in pharmacy		
Type	Optional	Credits	2
Academic year	II	Semester	IV
Number of hours	Course	15	Practice/laboratory work
	Seminar		Self-training
Component	Fundamental		
Course holder	Melnic Silvia, PhD, associate professor		
Location	Chişinău, 66 Malina Mică street, building 2.		
Conditionings and prerequisites of:	Program: The study requires some level of mathematics and physics. These disciplines are a part of the language of chemistry, and a lack of familiarity with that language can become a barrier to success in understanding. The course assumes previous knowledge of inorganic and organic chemistry.		
	Competences: The ability to perform experiments, the ability to correctly understand and apply working methods in compliance with labor protection rules; digital skills; the ability to communicate and work in a team; qualities - tolerance, compassion, autonomy.		
Mission of the discipline	Discipline <i>Complex compounds with application in pharmacy</i> , aims to acquire basic knowledge in the field of modern coordinative chemistry and to understand its close relationship with pharmaceutical chemistry, drug analysis, catalysis, biochemistry. The task of the discipline is to familiarize the student with modern concepts about coordination compounds, the relationship between the structure and reactivity of different types of coordination compounds, and their areas of use.		
Overview of the topics	General notions of coordination chemistry: complex compound, complex generator (central atom), ligands, coordination number. Formulation and nomenclature of complex combinations. Classification. Isomerism. Stability. The chemical bond in coordinative compounds. Valence bonding method. Crystalline field theory. Reactivity of coordination compounds. Methods of synthesis of complex compounds. Biocomplexes. Application of coordination compounds in the qualitative and quantitative chemical analysis of medicinal substances. Complex compounds as drugs. Synthesis and study of new coordination compounds with improved activity. Methods of investigation of coordination compounds: IR spectroscopy, UV-vis, X-ray, magnetochemistry, thermogravimetry, etc.		
Outcomes	<ul style="list-style-type: none"> • Knowledge of the physical-chemical properties of complex combinations used as active principles of drugs. Design of new complexes with improved activity. • Knowledge of the relationship between the composition, structure and biological activity of coordination compounds. • Application of basic knowledge in the field of coordination chemistry required for qualitative and quantitative chemical analysis of medicinal substances. • Applying the knowledge gained for processing drug analysis data. 		
Practical skills	<ul style="list-style-type: none"> • Appreciate the importance of complex compounds for the design, analysis and study of medicinal substances; • To describe the physical-chemical properties of the coordination compounds used as active principles of drugs; 		

	<ul style="list-style-type: none">• Describe coordination compounds used in drug analysis;• Describe coordination compounds used in the design and preparation of drugs.• To use basic knowledge in the field of coordination chemistry for the quantitative analysis of medicinal substances;• To apply the characteristic reactions of the coordination compounds to the identification of the composition of the medicinal substances;
Evaluation form	Exam – semester II, Exam – semester III.