Name of the discipline	**Sources and methods of obtaining of drugs**			
Type	Optional		Credits	2
Year of study	II		semester	III
Number of hours	course	15	Practical/laboratory work	
	SEMINARS	30	Individual work	15
compound	Specialized			
Course holder	PhD in Pharmaceutical Sciences, Associate Professor Uncu Livia			
location	Malina Mica, 66			
Prerequisites and requirements of:	Program: knowledge of general, inorganic, organic chemistry, biological chemistry, physiology, molecular biology, microbiology.			
	Competencies: Knowledge of chemical structures; physiological and pathological processes in the human body; biochemical processes and biochemistry of xenobiotics; structure of biologically active compounds; structure of cells, membrane tissues; characterization of pathogenic microorganisms.			
The mission of the discipline	Discipline that integrates the knowledge of fundamental and general disciplines and shows their practical value in the rational design and synthesis of the drug. Knowledge of the sources of obtaining, the principles of selecting the method, equipment and the particularities of controlling the substances obtained, helps to understand the process of creating a drug, by forming cause-effect relationships. This knowledge is indispensable for activation in the pharmaceutical industry. At the same time, understanding the particularities of obtaining biological drugs correlates with the new requirements for the formation of the professional skills of the future pharmacist. The mission of the discipline is to provide students with knowledge about the sources of obtaining medicines, as well as developing skills in understanding the processes and methods of rational drug design.			
The topic presented	The main stages in the creation of medicinal preparations. Relationships between the structure of the substance molecule and its action on the body. Sources and methods of obtaining medicinal substances. Empirical and directed search. Principles of chemical synthesis and methods used. Sources, reagents, apparatus and conditions necessary for obtaining synthetic drugs. Synthesis of the main classes of drugs (inorganic, aliphatic, alicyclic, aromatic, heterocyclic compounds). Calculation methods applied in chemical synthesis. Semi-synthesis methods. Sources, reagents, apparatus and conditions necessary for obtaining drugs. Synthesis of antibiotics. Biosynthetic and semi-synthetic penicillins. Plant and animal sources and methods for obtaining medicinal substances. Medicines and food supplements of plant and animal origin. Biological medicines. Sources and particularities of obtaining and control. Preparations from animal extracts. Biological hormonal preparations. Blood and blood products. Vaccines. Immunological products.			
Study purposes	• to know general methods and procedures for rational drug design, factors influencing drug action, biological drugs;			

	• to determine the vegetable, mineral, and animal sources of obtaining medicines; • to describe the steps of synthesis/extraction of compounds with a medicinal role; • be able to identify and avoid the main types of errors frequently encountered when obtaining medicines; • to know the stages of drug development.
Purchased practical skills	• defining and characterizing all sources of obtaining medicines; • knowledge of various methods of obtaining medicines: pure chemical synthesis, semi-synthesis, extraction, biotechnologies, etc. • communication skills, information accumulation and presentation.
Evaluation form	End of semester exam