

Name of discipline	Pharmaceutical Chemistry		
Type	Compulsory	Credits	20
Academic year	III, IV	Semester	V, VI, VII, VIII
Number of hours	Course	120	Practice/laboratory work
	Seminar		Self-training
Component	Specialized		
Course holder	PhD, associate professor Uncu Livia – Pharmaceutical Chemistry 3 th year; PhD, Professor Valica Vladimir – Pharmaceutical Chemistry 4 th year		
Location	Malina Mica, 66		
Conditionings and prerequisites of:	Program: Pharmaceutical chemistry is a science with multidisciplinary preconditions, combining the knowledge of Inorganic Chemistry, Organic Chemistry, Analytical Chemistry, Physico-colloidal Chemistry, Biological Chemistry, Physico-chemical Methods of Analysis previously accumulated, and substantiating other specialized disciplines such as Analytical toxicology, Pharmaceutical Technology, Pharmacology, Pharmacognosy and Medical Chemistry.		
	Competences: Knowledge of chemical structures; skills of working with laboratory dishes and equipment; compliance with Laboratory Safety Rules; basic digital skills (internet use, document processing, use of text editors, electronic whiteboards and presentation applications), communication skills and teamwork.		
Mission of the discipline	<p>Pharmaceutical Chemistry is meant to study the methods of obtaining of medicinal substances, their physical and chemical properties, as well as the methods of analysis of medicinal substances; forms a methodology for assimilating the methods of obtaining and assessing the quality of medicinal substances based on the general and particular laws of Pharmaceutical Chemistry, as well as the correlation between chemical structure and pharmacological activity for the professional tasks of the pharmacist. Within each chemical and therapeutic class, medicinal substances are studied from the point of view of chemical structures and nomenclature, possibilities of obtaining, physico-chemical properties, essential biological properties, structural-activity relations, the way of pharmaceutical presentation. Another objective of the Pharmaceutical Chemistry course is known by the strategies applied to discover new bioactive molecules.</p> <p>The discipline of Pharmaceutical Chemistry provides the necessary data for the systematization of knowledge about the creation of medicinal substances from their obtaining to their introduction into curative practice, the study of their properties and their quality control.</p>		
Overview of the topics	General principles of pharmaceutical chemistry. Analytical Quality Control documents for medicinal products (European Pharmacopoeia, pharmacopoeial monographs). Principles and criteria for the quality of pharmaceutical substances. Pharmaceutical analysis: identification, determination of purity, methods of quantitative determination. Physico-chemical properties and analysis of inorganic, organic medicinal substances with various structures (aliphatic, alicyclic, aromatic, heterocyclic). Medicinal substances		

	inhaled anesthetics, local anesthetics, analgesics-antipyretics, anti-inflammatory, antiseptic, antibacterial, antiviral, antifungal, antimycobacterial, antimalarial, anthelmintic, antitrihomonase, antineoplastic, radiopharmaceutical. Properties and analysis of medicinal substances with action on the central nervous system, efferent innervation, cardiovascular system, blood, respiratory system, digestive system, uric acid metabolism; medicinal substances with diuretic and antidiabetic, antihistamine, hormonal, vitamin action. Application of physical, chemical, physico-chemical methods in the analysis and control of the purity of medicinal substances.
Outcomes	<ul style="list-style-type: none"> • to know the sources and methods of obtaining medicinal substances, their physical and chemical properties; • to know the main laws of the relationship between the chemical structure and the pharmacological properties, as a basic material that will be used for the synthesis of medicinal substances, to know the requirements regarding their purity and storage conditions; • to possess the general and specific methods of analysis of medicinal substances; • possess methods of pharmaceutical and pharmacopoeial analysis; • to respect the ethical and deontological principles in the relations with colleagues, medical workers and the public in the professional activity.
Clinical skills	<ul style="list-style-type: none"> • knowledge of medicinal substances based on the general laws of chemical and biological sciences, their specificity and the use of medicines in accordance with the particularities of pharmaceutical chemistry, in order to fulfill the professional tasks of the pharmacist; • obtaining, analyzing and standardizing medicinal substances of synthetic and vegetable origin; • application of theoretical knowledge in the analysis and control of medicinal substances; • analysis of medicinal substances by chemical, physical and physico-chemical methods; • knowledge and application of the requirements of normative acts in the field of analysis and control of medicinal substances; • possession of the computer as a working tool in the theoretical and practical activity; • establishing the correlation between the components of the analyst's activity process.
Evaluation form	Exam at the end of each semester (4 exams)