Name of discipline	**Clinical pharmacology**			
Type	Compulsory,		Credits	2
Academic year	V		Semester	X
Number of hours	Course	16	Practice/laboratory work	16
	Seminar	16	Self-training	12
Component	Specialized			
Course holder	associate professor L.Ţurcan, associate professor L. Podgurschi			
Location	Associate Professor L. Podgurschi: SC MS RM, N 5, 51 Pushkin Street, et. 3, internal diseases department - gastroenterology; Associate Professor Lucia Ţurcan: Children's SCM V. Ignatenco, 149 Grenobl Street, pediatric department no. 2,; University assistant M. Chianu: SCM N1, str. Melestiu 20, et. 1; University assistant M. Mihalachi: SCR, str.N.Testemițanu 29,; University assistant T. Covalschi: Children's SCM V. Ignatenco, 149 Grenobl Street, intensive care department. University assistant I.Guţu: Institute of Emergency Medicine, str. Toma Ciorbă, N1, department of emergency medicine.			
Conditionings and prerequisites of:	Profound knowledge in the field of: a) medical and biological disciplines (anatomy, physiology, histology, biochemistry, physiopathology, morphopathology, microbiology, fundamental pharmacology) b) clinical (internal medicine, surgery, infectious diseases, pediatrics, endocrinology, neurology, obstetrics and gynecology, etc.) is required to master the clinical pharmacology.			
	Besides that, it is necessary for the possess the information technologies (use of the Internet, document processing, electronic tables and presentations, use of graphic programs) at an adequate level, the communication skills and teamwork, as well as being tolerant, compassionate and autonomous.			
Mission of the discipline	The basic goal of clinical pharmacology is to develop in students the ability to apply the knowledge gained about the pharmacokinetics, pharmacodynamics, compatibility and side effects of drugs, to achieve a rational and differentiated drug treatment of patients.			
Overview of the topics	Clinical pharmacology and current drug reforms. The concept of rational use of drugs. Original and generic drugs, biosimilar and orphan drugs. Bioequivalence of drugs. Notion of compliance and ways to increase it. Self-treatment. Pharmacokinetics, pharmacogenetics and clinical pharmacodynamics. Therapeutic drug monitoring: indications and interpretations. Clinical pharmacology of drugs used in diseases of the respiratory system. Clinical pharmacology of antiallergic drugs and immunomodulators. Clinical pharmacology of drugs influencing the secretion and motility of the digestive tract. Clinical pharmacology of drugs used in diseases of the liver, bile duct and pancreas. Clinical pharmacology of antiarrhythmic, antianginal and drugs used in heart failure. Clinical pharmacology of antihypertensive and antihypotensive drugs. Clinical pharmacology of hemostatic and antithrombotic drugs. Clinical pharmacology of diuretics, plasma volume substitutes and drugs with action on acid-base, hydroelectrolytic balance. Clinical pharmacology of antibiotics and chemotherapeutics with various chemical structure. Clinical pharmacology of antiviral, antituberculous and antifungal drugs. Clinical pharmacology of analgesic and anti-inflammatory drugs. Clinical pharmacology of psychotropic drugs (antipsychotics, anxiolytics, sedatives,			

	antidepressants, nootropics and CNS stimulants). Clinical pharmacology of hypnotic drugs, symptomatic anticonvulsants, antiepileptics, antiparkinsonian and drugs used in Alzheimer's disease. Clinical pharmacology of thyroid gland drugs, antidiabetics and glucocorticoids. Clinical pharmacology of venotropic, angioprotective, antimigraine, cerebral and peripheral vasodilators drugs. Clinical pharmacology of lipid-lowering and drugs used in obesity, osteoporosis. Complications of pharmacotherapy. Drugs side effects. Drug interactions.
Outcomes	• to know the belonging of the drugs to the pharmacotherapeutic groups and the classification according to the duration and potency of action, according to the clinical use and generations; • to characterize the pharmacological effects and their clinical manifestations; • to know the pharmacokinetics of drugs and the principles of use; • to acquire the indications and principles of selection and dosing of medicines; • to characterize adverse drug reactions and their prophylaxis principles; • to analyze the action of drugs in terms of all their pharmacological properties; • to select the most effective and harmless medicines, • toassess the possibility of using drugs for diagnosis, prophylaxis and treatment; • to use medicinal products under certain pathological conditions on the basis of pharmacodynamic, pharmacokinetic, chronopharmacological characteristics and the particularities of the action of medicinal products in different age groups, in patients with various comorbidities and in pregnant women, • to predict the interaction of drugs and their biotransformation in the body. • to train the skills necessary to evaluate the possibility of using medicines for the treatment and prevention of various diseases and pathological conditions; • to be able to implement the knowledge in the research activity.
Clinical skills	• **At the level of knowledge and understanding:** ➢ to identify clinical pharmacology departments and their importance; ➢ to define basic principles of pharmacokinetics, pharmacogenetics and clinical pharmacodynamics; ➢ to define fields of study of pharmacoeconomics, pharmacoepidemiology, pharmacovigilance, pharmacotoxicology, chronopharmacology and social pharmacology; ➢ to describe the principles of classification of drugs (by activity, duration of action, toxicity, clinical use, etc.); ➢ to describe mechanisms of action at molecular and systemic level, pharmacological effects and corresponding clinical manifestations; ➢ to describe indications, principles of selection and use of groups of drugs; ➢ to describe contraindications, side effects and precautions for groups of medicines and mandatory and essential drugs; ➢ to describe the etiotropic, pathogenetic and symptomatic action of the drugs in the pharmacotherapy of diseases and pathological conditions; ➢ to define individually the appropriate dosage regimen and the ways of administration of drugs depending on the disease and the pathology state of the body;

	➢ to describe the patient's medical history, to identify the drug surveillance system; ➢ to list the essential and vital important drugs; - to list the OTC drugs and self-medication; ➢ to identify the principles of elaboration and design of the national and institutional therapeutical form, diagnostic and treatment medical economic standards, the national and institutional clinical guidelines; ➢ to describe the principles of personalized medication. • **at the level of application:** ➢ to select the first choice (first line) drug for an optimized treatment; ➢ to assess the prescription of drugs to the patient, based on the pharmacokinetic, pharmacogenetic and pharmacodynamic properties of the drug, and as well as on the individual particularities of the patient; ➢ to sketch an optimal dosage regimen, selecting rational ways of administration depending on the pharmacodynamics, pharmacokinetic parameters of the drug, and the age, gender, and pathological conditions of the particular patient; ➢ to recommend the administration of the most effective and harmless drug associations in the particular clinical situation; ➢ to assess the development and use of methods to prevent or correct the side (secondary) effects of drugs; ➢ to apply the principles of P-drug selection and P-treatment in the particular patient; ➢ to determine the criteria of efficacy and harmlessness of the drug groups; ➢ to select the information about the drugs that is useful for the patient in order to improve compliance and observance of the administration regime; ➢ to apply in practice the surveillance system of drugs; ➢ to indicate the criteria for monitoring the effect of drugs; ➢ to sketch the possible drug interactions and their consequences. • **at the integration level:** ➢ to assess the importance and place of clinical pharmacology among clinical disciplines; ➢ to identify the necessity of clinical pharmacology in order to establish rational and harmless treatment; ➢ to analyze the results of the pharmacokinetic and pharmacodynamic investigations of the drugs; ➢ to select the necessary complex of investigative methods to assess the pharmacodynamic effects of drugs and the analysis of the obtained results; ➢ to analyze and synthesise the pharmacological and pharmacotherapeutic information from the specialty literature in accordance with evidence-based medicine; ➢ to formulate principles of ethics and deontology in performing pharmacotherapy; ➢ to select the criteria of efficacy and harmlessness of drugs for justifying the expected treatment; ➢ to analyze the pharmacotherapy of various diseases and illnesses based on unified diagnostic and treatment standards; ➢ to survey the efficacy and harmlessness of drugs in the pharmacotherapy process;

	➢ to implement the criteria for monitoring the drug treatment during the study of clinical disciplines; ➢ to develop scientific research projects in the field of clinical pharmacology.
Evaluation form	Examen