International Institute of Medical Education and Cooperation

SPECIALIST DEGREE PROGRAMME 31.05.01 'GENERAL MEDICINE'

COURSE (MODULE) 'Pharmacology'

OVERVIEW

Mode of study	full time
Faculty	International Institute of Medical Education and Cooperation
Department	Pharmacology
Year	3
Semester –	5, 6 – Pharmacology (252 ac.h.) *ac. h. – academic hours
Lectures –	30 ac.h.
Exam –	6 semester 36 ac.h
Practical classes	96 ac.h
Self-study	90 ac.h
Total workload	252 ac.h (7 credits)

The course (module) is devised according to FSES HE requirements approved on February, 9, 2016 by Order of Ministry of Health, Russian Federation) and vocational functions of General Practitioner (primary care physician, district doctor) Professional Standard.

1. THE COURSE AIM AND SCOPE

The aim is:

- to form students' skills in the competent selection of the most effective and safe medicines;
- to form alertness to adverse drug reactions, their prophylaxis and treatment;
- to form students' knowledge of pharmacology, principles of evidence-based pharmacology;
- to teach the basics of prescription workflow and the rules for writing prescriptions for medicines, storage and use of medicines.

The course focuses on:

- to acquaint students with the history of pharmacology; the contribution of famous scientists to the development of world pharmacology;
- to form knowledge about the role and place of pharmacology among other fundamental and medical sciences, about the development trends of the discipline;
- acquaint students with the stages of drug discovery and research, international standards in preclinical (GLP), clinical (GCP) research and production (GMP) of medicines;
- to teach students to analyze the effect of drugs based on their pharmacological effects, mechanisms of action, pharmacokinetic parameters;
- to teach students to recognize possible side and toxic effects and their clinical manifestations;
- to teach students the principles of writing prescription.

2. THE COURSE POSITION IN SPECIALIST DEGREE PROGRAMME 31.05.01 ‘GENERAL MEDICINE’

The course ‘Pharmacology’ is taught in the block of professional subjects of ‘General Medicine’

The background knowledge for the course has been taught in \at

- basic subjects ((Latin, Philosophy, Histology, Cell Biology (Cytology), Normal Physiology, Microbiology, Immunology, Anatomy);
- variable subjects (Bioorganic Chemistry).

3. OUTCOME COMPETENCIES OF THE COURSE

On completing the course a student is expected to

A student knows:

basic scientific concepts; basic medical and pharmaceutical terminology in Latin;

the mechanism of drugs action, medical indications and contraindications; unwanted effects and complications;

general principles of pharmacokinetics and pharmacodynamics of drugs, factors that change them, the main adverse and toxic reactions;

classification and characteristics of the main groups of drugs, pharmacodynamics and pharmacokinetics, indications and contraindications for the use of drugs; types of dosage forms, doses of individual drugs;

main adverse reactions of drugs, their identification, methods of prevention and correction;

general principles of drug prescriptions, generally accepted abbreviations and designations in recipes, the use of the Latin language, the rules for the storage and use of medicines;

classification and basic characteristics of addictive drugs, their pharmacodynamics and pharmacokinetics, indications and contraindications for use and side effects; signs indicating the non-medical use of narcotic and psychotropic drugs/

A student is able to

correctly and logically present educational material, lead a discussion, formulate a personal attitude to the problem;

prescribe drug treatment for medical use in the account of the list of vital essential medicines, as well as age, diagnosis and clinical picture of diseases;

evaluate the effectiveness and safety of drug treatment;

analyze the effects of drugs taking into account the pharmacological interactions and age of the patient;

competently lead the discussion, formulate an attitude to the problem; analyze the problems of the occurrence and prevention of addictive conditions to drugs, as a socially significant problem.

A student provides the ability to generalize, analyze, perceive information, set goals and choose ways to achieve it; technology for the acquisition, use and updating of humanitarian natural science, biomedical knowledge.

A student applies the skills of prescribing drug treatment with medicinal products for medical use, taking into account the list of vital essential medicines, as well as the age, diagnosis and clinical picture of diseases. Assess the effectiveness and safety of drugs;

the skills to choose a specific dosage form, dose and route of administration of drugs, taking into account the pathological condition;

skills for predicting the possible interaction of drugs with the combined use of various drugs.

skills of moral and ethical argumentation, skills of informing patients and their relatives about the mechanisms of action, side effects, contraindications to the use of drugs that cause dependence.

Learning outcomes	**Competency developed: a description of (compulsory) threshold level**	**Competency code**
1	2	3
General cultural competences (GCC)		
A student knows: basic scientific concepts; basic medical and pharmaceutical terminology in Latin. **A student is able to** correctly and logically present educational material, lead a discussion, formulate a personal attitude to the problem. **A student provides** the ability to generalize, analyze, perceive information, set goals and choose ways to achieve it; technology for the acquisition, use and updating of humanitarian natural science, biomedical knowledge.	the ability to abstract thinking, analysis, synthesis	ОК 1
General professional competences (GCC)		
A student knows the basics of health legislation and regulatory documents governing the activities of health authorities and institutions. **A student is able to** prescribe medications for certain diseases and pathological states in patients, based on their pharmaco-dynamics and pharmacokinetics. **A student provides** reading and writing skills in Latin for the terms used to write prescriptions.	readiness to keep medical records	ОПК-6

A student knows: the mechanism of drugs action, medical indications and contraindications; unwanted effects and complications; general principles of pharmacokinetics and pharmacodynamics of drugs, factors that change them, the main adverse and toxic reactions; classification and characteristics of the main groups of drugs, pharmacodynamics and pharmacokinetics, indications and contraindications for the use of drugs; types of dosage forms, doses of individual drugs; main adverse reactions of drugs, their identification, methods of prevention and correction; general principles of drug prescriptions, generally accepted abbreviations and designations in recipes, the use of the Latin language, the rules for the storage and use of medicines. **A student is able to** prescribe drug treatment for medical use in the account of the list of vital essential medicines, as well as age, diagnosis and clinical picture of diseases; evaluate the effectiveness and safety of drug treatment; analyze the effects of drugs taking into account the pharmacological interactions and age of the patient. **A student applies** the skills of prescribing drug treatment with medicinal products for medical use, taking into account the list of vital essential medicines, as well as the age, diagnosis and clinical picture of diseases. Assess the effectiveness and safety of drugs; the skills to choose a specific dosage form, dose and route of administration of drugs, taking into account the pathological condition; skills for predicting the possible interaction of drugs with the combined use of various drugs.	readiness for medical use of drugs and other substances and their combinations in solving professional problems	ОПК 8
Professional competences (GCC)		
A student knows classification and basic characteristics of addictive drugs, their pharmacodynamics and pharmacokinetics, indications and contraindications for use and side effects; signs indicating the non-medical use of narcotic and psychotropic drugs; **A student is able to** competently lead the discussion, formulate an attitude to the problem; analyze the problems of the occurrence and prevention of addictive conditions to drugs, as a socially significant problem. **A student applies** skills of moral and ethical argumentation, skills of informing patients and their relatives about the mechanisms of action, side effects, contraindications to the use of drugs that cause dependence	readiness to educate on the elimination of risk factors and the formation of skills for a healthy lifestyle	ПК-16

4. THE COURSE (MODULE) 'Pharmacology' SYLLABUS AND CONTENTS

Total workload is 7 credits (252 ac.h.)

№ п/п 1	Part (Module)	Семестр semester	Неделя семестра	Study forms (including self-study and workload in ac.h.)				Formative assessment *(weekly)* Summative assessment (*by semesters)*
				Lectures	Practical classes	Seminars	Self-study	
1	General principles of Pharmacology.	5		14	48	-	45	Q T C No formal control
2	Pharmacology of systems and organs.	6		16	48	-	45	Q T C Exam (36 ac.h.)
		5-6		30	96	-	90	Q T C Exam (36 ac.h.)

Q - Questions , T –Test , C – Cases,

Head of Pharmacology Department
Associate Professor

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