



Non-Commercial Educational Institution
Educational-Scientific-Production Complex
«International University of Kyrgyzstan»

Quality Management System
Academic and methodological complex of the discipline
«Nephrology»
MEP of «General Medicine» ISM IUK

INTERNATIONAL UNIVERSITY OF KYRGYZSTAN
INTERNATIONAL SCHOOL OF MEDICINE
Department of Therapy



Syllabus

OF THE DISCIPLINE
«HEMATOLOGY»

Main educational program

specialty of **560001 General Medicine (for foreign citizens)**
(code, direction name / specialty)

qualification of the graduate: general practitioner
(the qualification of the graduate is indicated in accordance with SES HPE)

Full-time education

Course 3

Semester 6

Credit / Exam (6)

Total curriculum credits 2

Work program developer: PhD. Churakaev M.V.
(position, full name)

Head of the Department Baitova G. M.
(full name, signature)

Bishkek 2021



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The work program of the academic discipline

1.1. Explanatory note

- **Mission of the ISM IUK** – *training of competent specialists in the field of medicine, consistent with international standards and traditions of medical ethics, ready for continuous professional growth using modern achievements of science and practice, to solve public health problems.*

Annotation of the academic discipline

The AMC for the "Hematology" discipline is compiled in accordance with the Regulations on the Academic and Methodological Complex of the discipline, approved by the Protocol of the Academic Council No. 6 of October 20, 2020, by the Addendum to the Regulations on the modular grade-rating system for assessing the knowledge of students in the NCEI ESPC "IUK" (Protocol No. 42 of 07.26.2018, as well as on the basis of the State educational standard of higher professional education in the direction of "Medicine", approved by the Government Decree of 2015. The AMC of the "Hematology" discipline was developed for third-year students in the direction of "General Medicine" 560001 in compliance with the requirements of the State Educational Standard of Higher Professional Education of the Ministry of Education and Science of the Kyrgyz Republic.

There is not a single condition and disease in which the bone marrow are not "interested". In this case, most often, the dysfunction is masked by the symptoms of the underlying disease, or it proceeds latently. Timely identification of the main renal symptoms, verification of the disease and adequate treatment will not only improve the patient's quality of life, but will reduce the rate of progression of chronic renal failure of the natural outcome of all chronic diseases. Studying the discipline of nephrology will expand the understanding of the causes, the variety of manifestations, the subtleties of choosing therapy for various, currently most frequent injuries. This knowledge will be useful in any branch of medicine, regardless of the chosen specialization in the future.

The study of the discipline in the 3rd year is necessary for the preparation of a general practitioner who knows the basics of clinical research of a hematological patient with subsequent symptoms and syndromes, who knows the basics of etiology, clinical picture, classification, treatment of the main, most common diseases of the bone marrow and spleen and their prevention.

• Goals and objectives of the discipline



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The purpose of the training: to work out the skills of recognizing diseases, understanding their causes and mechanisms of development, choosing the tactics of patient management.

Tasks: to be able to identify the main renal syndromes, draw up a plan for laboratory and instrumental examination of the patient, formulate a diagnosis in accordance with modern classifications, outline a rational pharmacotherapy of the disease

• **Place of discipline in the structure of MEP (prerequisites, postrequisites).**

Requirements for the preliminary preparation of the student:

To study this academic discipline (module), you need the following knowledge, skills and abilities formed by previous disciplines:

- Pathophysiology, clinical pathophysiology
- Propedeutics of internal diseases
- Pharmacology
- Pathological anatomy
- Psychology and pedagogy
- Normal physiology

Subsequently, the knowledge gained in the course of studying the discipline "Hematology" will be necessary in the study of disciplines: "Internal medicine", "Polyclinic therapy", production practice "Physician assistant".

Competencies of students, formed as a result of mastering discipline, the planned results of mastering the discipline.

The study of this academic discipline is aimed at the formation of the following students general cultural (GC), general professional (GPC) and professional (PC) competencies:

	code / content of competency	As a result of studying the academic discipline, students must to:
2	PC-2 - is able and ready to conduct and interpret a survey,	know: - the basics of organizing outpatient and inpatient care for children, adolescents and adults,



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	physical examination, clinical examination, the results of modern laboratory and instrumental studies, to write a medical record of an adult outpatient and inpatient.	modern organizational forms of work and diagnostic capabilities of outpatient services; be able to: - collect anamnesis; interview the patient and his relatives, conduct a physical examination of the patient of various ages (examination, palpation, auscultation, blood pressure measurement, determination of pulse characteristics, respiratory rate, etc.); master: - methods of general clinical examination of patients;
3	PC-3 - is able to conduct pathophysiological analysis of clinical syndromes, substantiate pathogenetically justified methods (principles) of diagnosis, treatment, rehabilitation and prevention among adults and children, taking into account their age and sex groups;	know: - the concepts of etiology, pathogenesis, morphogenesis, pathomorphosis of the disease in an adult and adolescent, the principles of classification of diseases; basic concepts of general nosology; be able to: - interpret the results of the most common methods of laboratory and functional diagnostics, thermometry to identify pathological processes in human organs and systems; master: - interpretation patients' results of laboratory, instrumental diagnostic methods;
Diagnostic activity:		
6	PC-13 - is able to identify in patients the main pathological symptoms and syndromes of diseases, using knowledge of the basics of biomedical and clinical disciplines, taking into account the course of pathology in organs, systems of the body as a whole, to analyze the patterns of functioning of organs and	know: - functional systems of the human body, their regulation and self-regulation when exposed to the external environment in normal and pathological processes; the structure and function of the immune system in adults and adolescents, its age characteristics, mechanisms of development and functioning, the main methods of immunodiagnostics, methods for assessing the immune status and indications for the use of immunotropic therapy;



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	<p>systems in various diseases and pathological processes, use the algorithm for making a diagnosis (main, concomitant, complications), taking into account the ICD-10, carry out the main diagnostic measures to identify urgent and life-threatening conditions;</p>	<p>be able to: - analyze the histophysiological assessment of the state of various cellular, tissue and organ structures in patients;</p> <p>master: - interpretation patient's results of laboratory, instrumental diagnostic methods;</p>
Treating activity:		
7	<p>PC-14 - is able to perform basic therapeutic measures for the most common diseases and conditions in adults and children;</p>	<p>know: - the clinical picture, features of the course and possible complications of the most common diseases occurring in a typical form in children, adolescents and adults;</p> <p>be able to: - to substantiate the need for clinical and immunological examination of a sick adult and adolescent, to analyze the effect of drugs in terms of the totality of their pharmacological properties and the possibility of their use for therapeutic treatment of patients of different ages;</p> <p>master: - an algorithm for setting a preliminary diagnosis of patients with their subsequent referral for additional examination and to specialist doctors; an algorithm for setting a detailed clinical diagnosis.</p>

Requirements for the level of preparation of the student who completed the studying the program of this discipline.

As a result of studying the basic part of the cycle, the student have to:

know:

- the definition of the disease, etiology, risk factors (RF), pathogenesis, pathomorphology, classification, clinical picture, laboratory and instrumental diagnostics, principles of treatment;

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- the etiology, pathogenesis, clinic, diagnostic methods and emergency care of urgent conditions;
- to list the complications of diseases.
- the principles of drug therapy, indications and contraindications for the use of drugs (Treatment Agent).
- the prognosis of diseases, RF of development of life-threatening conditions.

Understand:


- the pathogenesis of the formation of certain syndromes and symptoms in nephrology, pathomorphology of the main syndromes;
- the results of laboratory and instrumental diagnostic methods;
- the principles of emergency care for hematological patients;
- the principles of drug therapy and principles of treatment control.

Able to use:

- the methods of physical examination for making a preliminary diagnosis and determining a plan for the examination of a hematological patient;
- the results of laboratory and instrumental studies in determining the tactics of treatment;
- the data of an objective examination and the results of the patient's study in writing a student's medical history with a substantiation of the clinical diagnosis.

Able to carry out:

- the recognition and correct diagnosis of the most common hematological syndromes in their typical course;

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- the assessment of the activity of the pathological process, its form, stage and phase of the course in accordance with the officially approved classifications, the severity of complications;
- the drawing up a plan for laboratory and instrumental examination to confirm the alleged diagnosis and interpret the results obtained;
- the formulation a detailed clinical diagnosis, guided by the modern classification of diseases;
- the detailed diagnosis in a particular patient, exactly, the etiology, mechanism of development and pathomorphology of the disease, to highlight complications.

Able to analyze:

- the substantiation of the underlying disease of the clinical diagnosis in a particular patient with an assessment of the examination results and identify the criteria for the diagnosis of this disease;
- the substantiation of the etiology of the disease in the patient;
- the appointment of adequate individual therapy by filling out the "Prescription sheet" and "Temperature sheet" of the supervised patient;
- the clinical manifestations of some emergency conditions, to carry out a detailed condition, urgent diagnostics and have the skills to provide emergency medical care.

Able to evaluate:

- the scheme of non-and drug treatment of the patient in accordance with the diagnosis and morphological changes, including determining the indications and therapeutic contraindications for surgical intervention, and its urgency;
- the prognosis of the disease for the life of a particular patient;

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- measures of primary and secondary prevention; the latter (including) in the supervised patient;

Master:

- the methodology for collecting complaints and anamnesis of the patient;
- the methods of propaedeutics of various body systems: examination, palpation, percussion and auscultation of internal organs;
- the skills of interpreting the anamnesis data, objective examination of the patient, his laboratory and instrumental data;
- the skills of presenting an independent point of view, analysis and logical thinking, public speech, ethical argumentation, conducting discussions and round tables, the principles of medical deontology and medical ethics;
- the skills of informing the patient and their relatives;
- the foreign language in the volume for communication and obtaining information from foreign sources.

1.2. Recommended educational technologies

The following types of educational work are used: lecture-visualization, lecture, press conference, trainings, debates among students, master classes, discussions of various formats, business and role-playing educational games, small group method, classes using simulators, dummies, imitators, analysis of clinical cases, preparation and defense of medical history, participation in research work, conducting subject Olympiads, preparation and defense of abstracts.

1.3. The scope of the discipline and types of academic work

Form of education – full time



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Academic plan for 2015	5 sem.	Total	
		in hours	in credits
Total labor intensity	60	60	2
Classroom works	36	36	1
Lectures	18	18	0,5
Practical classes	18	18	0,5
Independent work	12	12	0,3
SIWT	12	12	0,3
Type of final control			Exam

1.4. Structure of Discipline

Course	Semester	Number of Credits	Quantity of Academic hours		Independent work		Total hours
			Lecture	Practical classes	SIW	SIWT	
3	5		18	18	12	12	60
TOTAL			18	18	12	12	60

1.4.1. Thematic plan for studying the Discipline.

№	Name of sections and topics of disciplines (lectures and practical classes)	Quantity of academic hours			Individual work			Formed Competencies	Used edu. techs, means and methods of edu.	Form of control
		Lectures	Practical classes	Total classroom hours	SIWT	SIW	TOTAL HOURS			



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1	Diagnostic techniques in the assessment of haematological disorders (lec., prac.) Haematopoiesis through development and into adult life (SIWT)	1	2	3	1	1	5	PC-2, PC -3, PC-13, PC -14	video lecture, debate, brainstorming	Testing, case studies, assessing the development of practical skills (abilities)
2	Common approach to the patient with anemia (lec., prac.)	2	2	4	2	2	6	PC-2, PC-3, PC-13, PC-14	Video lectures	
3	Iron metabolism and its disorders (lec., prac.) Iron storage disease (SIWT)	1	2	3	1	1	5	PC-2, PC-3, PC-13, PC-14	Debates, video lectures	Testing, case studies, assessing the development of practical skills (abilities)
4	Megaloblastic and macrocytic anaemia (lec., prac.) Folate deficiency anemia (SIW)	1	2	3	1	1	5	PC-2, PC-3, PC-13, PC-14	Video lectures, brainstorming	Testing, case studies, assessing the development of practical



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5	Anaemia of inflammation (lec., prac.)	2	2	4	1	1	6	PC-2, PC-3, PC-13, PC-14	Video lectures, debates	Testing, case studies, assessing the development of practical skills (abilities)
6	Hemolytic anemia. Congenital hemolytic anemia. Hereditary spherocytosis. (SIWT) Hereditary elliptocytosis. (SIWT) Glucose- 6- phosphate dehydrogenase deficiency (SIWT) Favism (SIWT)	2	2	4	1	1	6	PC-2, PC-3, PC-13, PC-14	Video lectures, debates	Testing, case studies, assessing the development of practical skills (abilities)
6	Bone marrow failure. Aplastic anaemia. (lec., prac.) Complete bone marrow failure. Pancytopenia. (SIWT)	2	2	4	1	1	7	PC-2, PC-3, PC-13, PC-14	Video lectures, debates, brainstorming	Testing, case studies, assessing the development of practical skills (abilities)
7	Evaluation of the patient with a bleeding tendency. (lec., prac.)	1	2	3	1	1	6	PC-2, PC-3, PC-13, PC-14	Video lectures, debates	Testing, case studies, assessing the



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8	Chronic renal failure. Modern concepts of etiopathogenesis of chronic renal failure. Clinic, diagnosis of chronic renal failure (lec, praC) APS and disseminated intravascular coagulation syndrome in hematological practice (SIWT)	1	2	3	1	1	5	PC-2, PC-3, PC-13, PC-14	Video lectures	Testing, case studies, assessing the development of practical skills (abilities)
9	Common approach to the patient with leukocytosis (lec, prac)	1	2	3	1	1	5	PC-2, PC-3, PC-13, PC-14	Video lectures	Testing, case studies, assessing the development of practical skills (abilities)
	Total for the semester	18	18	36	12	12	60			Control work, tests
	TOTAL	18	18	36	12	12	60			

1.4.2. Organization of Student's Individual Work

<i>N_o</i>	SIW topic	The task for the SIW (essay, report, abstract, tables, presentation, note-taking, extracts, crossword puzzles, studying the medical history, solving situational problems, exercises, cases, preparing for	Recommended Literature	Deadlines (week number)
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		business games, testing on the topic)		
1.	Haematopoiesis through development and into adult life (SIW)	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	2
2.	Iron storage disease (SIW)	solving situational problems, presentation	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	3
3.	Folate deficiency anemia	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	4
4	Congenital hemolytic anemia. Hereditary spherocytosis.	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol	5



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			Macleod's Clinical examination 13th Edition	
5	Congenital hemolytic anemia. Hereditary elliptocytosis.	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	6
6	Glucose- 6- phosphate dehydrogenase deficiency (SIW)	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	7
7	Favism (SIW)	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	8
8	Complete bone marrow failure. Pancytopenia.	solving situational problems, presentation, report, film demonstration	1. Anthony S.Fauci, Braunwald, Kasper, Longo, Jameson, Loscalzo Harissons Principles of Internal Medicine 2012, 17th Edition 2. Graham Douglas&FionaNicol Macleod's Clinical examination 13th Edition	9



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1.4.3. EDUCATIONAL – METHODOLOGICAL AND INFORMATIONAL SUPPORT OF THE DISCIPLINE

List of recommended literature:

1. Mary Louise Turgeon Clinical Hematology Theory and Procedures. Enhanced 6th edition. Jones & Bartlett Learning, LLC, an Ascend Learning Company. 2018. P.2354
2. Hematology 2020 by the American Society of Hematology Educ Program. ISSN 1520-4391. 2020. P. 694
3. Begemann, Herbert. Atlas of clinical hematology / H. Begemann, J. Rastette. 4th completely rev. ed. ISBN-13: 978-3-642-97157-0. Springer-Verlag Berlin Heidelberg, 1989. P 319.
4. Hoffbrand's Essential Haematology, 8th Edition. ISBN: 978-1-119-49590-1. Wiley-Blackwell – 2019. P 432.
5. Mike Leach, Barbara J. Bain. Haematology: From the Image to the Diagnosis. ISBN: 978-1-119-77752-6. Wiley-Blackwell – 2021. P 304.
6. The Merck Manual. Руководство по медицине. Диагностика и лечение /гл. ред. Марк Х. Бирс. - 2-е изд. - М. : Литтерра, 2011. -3744 с.
7. David A. Warrell, Timothy M. Cox, John D. Firth. Oxford Textbook of Medicine (5 edn). Print ISBN-13: 9780199204854. Oxford University Press – 2018.

JOURNALS

1. BMC Hematology
2. Clinical and Experimental Hematology
3. International Urology and Hematology
4. Journal of Artificial Organs
5. Hong Kong Journal of Hematology
6. Clinical Queries: Hematology
7. Journal of American society of Hypertension

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8. Journal of Cardiothoracic- Renal research

9. Indian Journal of Transplantation

10. Pediatric Hematology