MINISTRY OF HEALTH OF THE REPUBLIC OF UZBEKISTAN
BUKHARA STATE MEDICAL INSTITUTE NAMED AFTER ABU ALI IBN SINO
DEPARTMENT OF HEMATOLOGY, CLINICAL LABORATORY DIAGNOSTICS, NEPHROLOGY AND HEMODIALYSIS

"APPROVE"
Vice Rector for Academic Affairs
prof. G. J. Jarilkasinova
" 2 " 2025

HEMATOLOGY
MODUL WORKING PROGRAMM
(3- COURSE)

Education: 900000 - Health and welfare
Area of expertise: 910000 - Health
Direction of education: 60910200 - General Medicine

Bukhara- 2025

The working program of this module was compiled by the teaching staff of the department on the basis of the annexes of the Order of the Minister of Innovation No. 259 of June 9, 2023 and on the basis of Appendix 4.2 of the Order of the Minister of Health of the Republic of Uzbekistan No. 12.08.209 of 2019.

Developers:
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Ismatova M.N. – Associate Professor of the Department of Faculty and Hospital Therapy, PhD
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The work program of this module was reviewed and approved at the department meeting No. 1.

Protocol No. "26" " 08 " **2025**

Head of the department _____ N.Sh.Akhmedova

The educational and methodological documents of the department were reviewed and approved by the Academic Council of the Institute.

Protocol No. "27" " 08 " **2025**

Head of the Department of the Registration Office: **O.B. Rakhmatov**

Lead Specialist of the Sector for Coordination of the Educational Process: **Adilova R.Kh.**

Introduction

The purpose of teaching science isdeveloping skills in diagnosing and treating common blood diseases.

The program reflects the current state of development of various aspects of the science of hematology.

Module tasks:

- promotion of healthy lifestyles;
- etiology, pathogenesis, classification, course, complications, principles of treatment, measures of primary and secondary prevention of anemia;
- etiology, pathogenesis, classification, diagnosis, principles of treatment, prevention of leukemia;
- etiology, pathogenesis, classification, diagnosis, principles of treatment, prevention of hemorrhagic diathesis;
- formation of knowledge on the basics of clinical transfusion.

Module according to from students knowledge, skill and qualifications requirements:

Student:

- iron deficiency anemia, vitamin B12-deficiency anemia, folic deficiency anemia, aplastic anemia, thalassemia, etiology, pathogenesis, clinic, diagnosis, principles of treatment, prevention;
- etiology, pathogenesis, clinic, diagnosis, treatment principles, prevention of acute leukemia, chronic myeloid leukemia, chronic lymphocytic leukemia, multiple myeloma, erythremia;
- idiopathic thrombocytopenic purpura, hemorrhagic vasculitis, hereditary angiomatosis, hemophilia) etiology, pathogenesis, clinic, diagnosis, principles of treatment, prevention;
- classification and characteristics of blood products and blood substitutes
- have an idea about the basic principles of transfusion therapy;
- collecting an anamnesis of a hematological patient;
- determine the main clinical and hematological criteria for common blood diseases;
- substantiation and establishment of primary clinical diagnosis in patients with blood diseases;
- drawing up an individual plan for examining a hematological patient;
- interpretation of the results of laboratory and instrumental examination of a hematological patient;
- appointment of principles for the treatment of common blood diseases;
- appointment of preventive measures for general diseases of the blood system;
- determine the blood type and Rh factor of the donor and recipient;
- know and be able to use the promotion of a healthy lifestyle;
- primary and clinical diagnostics of common blood diseases;
- individual examination plan and principles of treatment of common blood diseases;
- interpretation of the results of laboratory and instrumental examination of a hematological patient;
- determination of the blood group;
- determination of the Rh factor by the express method;
- check the blood of the donor and recipient by group, Rh factor and individual compatibility,
- must have the skills and abilities to conduct bioscreening and transfusion of blood components, blood substitutes.

Semester	Classroom hour	Lecture (hour)	Practical and clinical (seminar, laboratory etc.)	self-sufficiency body work	General load volume
VI	46	8	38	44	90

3.2. Lectures

No.	Lecture topic	Hour	Competency codes
6th semester			
1	Anemia	2	UKK 2
2	Acute leukemia.	2	UKK 5
3	Chronic leukemia	2	UKK 3
4	Hemorrhagic diathesis	2	UKK 4
	Total:	8	

Organization of lectures (form, type, equipment):

The lecture is conducted by academic groups in an auditorium equipped with multimedia equipment

Content of lecture materials

Topic 1: Anemia

Anemia classification. Iron-deficiency anemia. Etiopathogenesis, clinic, diagnosis, treatment, principles of prevention, indicators of iron metabolism. Iron deficiency anemia in pregnant women. Vitamin B12 and folate deficiency anemia. aplastic anemia. Anemia of chronic disease. hemolytic anemia. Hereditary hemolytic anemia (microspherocytic anemia, anemia with deficiency of glucose-6-phosphate dehydrogenase, thalassemia, sickle cell anemia). Acquired hemolytic anemia. Autoimmune hemolytic anemia etiopathogenesis, clinic, diagnosis, treatment, principles of prevention, Chelation therapy.
References: A: 1,2,3.

Topic 2. Acute leukemia. chronic leukemia

Acute leukemia. Classification, etiopathogenesis, clinic, diagnosis, treatment and prevention of leukemia. principles. Acute myeloid leukemia, acute lymphoblastic leukemia, acute promyelocytic leukemia, acute undifferentiated leukemia. Chronic myeloid leukemia, chronic lymphocytic leukemia. True polycythemia. Multiple myeloma.
References: A: 1,2,3.
2:1.

Topic 3. Chronic leukemia.

Chronic leukemia Classification, etiopathogenesis, clinic, diagnosis, treatment and prevention of leukemia. principles. Chronic myeloid leukemia, chronic lymphocytic leukemia. True polycythemia. Multiple myeloma.
References: A: 1,2,3.
2:1.

Topic 4. Hemorrhagic diathesis.

Classification of hemorrhagic diathesis. Idiopathic thrombocytopenic purpura, Symptomatic autoimmune thrombocytopenia, Glanzman's disease, Acquired thrombocytopathies, Randu-Osler's disease, Shenlein-Genoch's disease, Hemophilia. Etiopathogenesis, clinic, diagnosis, principles of treatment and prevention
Links: A: 1,2,3

3.3. Organization of practical (seminar, laboratory) classes

No.	The subject of practical and clinical studies	Hour	Competency codes	Demonstration material
		practical		
1	Introduction to Hematology. Anemia resulting from blood loss. Anemia caused by impaired blood formation. Iron deficiency anemia, Vitamin B12 deficiency anemia, and folate deficiency anemia.	4	UK 4	Computer, slayd, multimedia
2	Anemias resulting from increased hemolysis. Congenital and acquired hemolytic anemias. AIHA (Autoimmune Hemolytic Anemia), Thalassemia, autoimmune hemolytic anemia.	6	UK 4	Computer, slayd, multimedia
3	Aplastic anemia. Anemias following chronic diseases.	4	UK 2	Computer, slayd, multimedia
4	Concept of Leukemias. Acute Leukemias.	4	UKK 3	Computer, slayd, multimedia
5	Chronic leukemias. Chronic myeloid leukemia, chronic lymphocytic leukemia.	4	UKK 5	Computer, slayd, multimedia
6	Chronic leukemias. Erythremia and myeloma disease.	6	UKK 5	Computer, slayd, multimedia
7	Hemorrhagic diatheses. Thrombocytopenia and thrombocytopathies.	6	UKK 4	Computer, slayd, multimedia
8	Hemorrhagic diatheses. Vasopathies and coagulopathies.	4	UKK 6	Computer, slayd, multimedia
	Total:	38		

IV. Educational Technologies and Methods:

1. **Lectures;**
2. **Interactive case studies;**
3. **Seminars (logical thinking, quick Q&A);**
4. **Group work;**
5. **Presentations;**
6. **Individual projects.**

5. Form and content of the organization of independent work
Self-study topics in hematology

No.	Subject	Hour	Teaching method
1	Differential diagnosis of iron deficiency anemia.	6	Document

2	Sideroachrestic anemia, etiology, pathogenesis, clinic, diagnosis, principles of treatment.	6	Presentation
3	Fanconi anemia etiology, pathogenesis, clinic, diagnosis, treatment. principles.	6	Document
4	Acute promyelosticular leukemia, etiology, pathogenesis, clinic, diagnosis, principles of treatment.	6	Presentation
5	Symptomatic erythrocytosis. Symptomatic thrombocytopathy, etiology, pathogenesis, principles of clinic, diagnostics, treatment.	6	Document
6	DIC- syndrom	6	Presentation
7	Hemocomponent therapy for blood diseases	6	Document
8	Indications and contraindications for donation.	2	Presentation
	Total:	**44 h**	

List of forms of self-study and types of work on modules:

Independent work recommended for the hematology module is performed differently in the modular system:

- preparation of information (abstract) on a given topic;
- work and lecture on special or scientific literature (monographs, articles) on sections or topics of the module;
- preparation of scientific articles, abstracts of conferences;
- solution of situational problems focused on situational and clinical problems;
- case studies (case studies based on real clinical situations and clinical situations);
- development and improvement of graphic organization;
- compiling and solving crossword puzzles;
- preparation of presentations and videos and wide use in independent workflow, etc.

General instructions and recommendations for organizing self-study and independent work:

Independent work on the module of hematology is carried out in the classroom and after school hours.

The following forms are used to organize student's independent work:

- in addition to classroom training, practical skills confirmed in mock-up and simulation rooms / centers are carried out under the supervision of a teacher in quantitative and qualitative terms and are reflected in the notebooks for acquiring practical skills;
- to carry out and implement standardized supervision of the patient (patient) under the supervision of a duty doctor-teacher on the basis of an approved list in dispensary duty organized outside the classroom in clinics of medical universities and clinical training bases, write an analysis of drug treatment and reflect in duty notebooks;
- implementation of practical skills, confirmed during extracurricular duty, organized in polyclinics of medical higher educational institutions and clinical training bases under the guidance of a duty doctor-teacher in quantitative and qualitative terms and their reflection in duty notebooks;

- participation in the supervision of patients together with the attending physician or the doctor on duty;
- holding talks and lectures on the principles of promoting a healthy lifestyle among the population;
- independent development of some theoretical topics with the help of educational literature;
- preparation of information (abstract) on a given topic;
- work and lecture on special or scientific literature (monographs, articles) on sections or topics of the module;
- solution of situational problems focused on situational and clinical problems;
- CASE solution (case study based on real clinical situations and clinical situations).

VI. Learning Outcomes (Formed Competencies)

GC 1. Ability to think abstractly, analyze and synthesize events;
GC 2. Ability to use the basics of philosophical knowledge to form a worldview;
GC 3. Ability to act in non-standard situations, readiness to take social and moral responsibility for decisions made;
GC 4. Competence in self-development, understanding, learning, and using creative potential;
GC 5. Readiness to apply first aid techniques and protection methods in emergency situations;
PC 1. Readiness to solve standard professional tasks considering information and bibliographic sources, biomedical terminology, information and communication technologies, and basic requirements of information security;
PC 2. Readiness for oral and written communication in Russian and foreign languages to solve professional problems;
PC 3. Preparation for medical documentation management;
PC 4. Readiness to use medicines and their combinations for medical purposes in solving professional problems;
PC 5. Readiness to organize primary medical care and provide initial sanitary assistance to patients;
PC 6. Readiness to use designated medical instruments during medical care.

Note:

1. GC – General Competency
2. PC – Professional Competency

VII. Requirements for Credit Acquisition:

Complete mastery of theoretical and methodological concepts related to the subject, ability to accurately reflect analysis results, independent reflection on studied processes, completion of assigned tasks and exercises, submission of a written final assessment.

Basic and additional educational literature and sources of information

Main:

1. Stuklov N.I., Kozinets G.I., Tyurina N.G. Textbook of hematology. Moscow. - Practical medicine.2018
2. Ragimov A.A., Sherbakova G.N. Infusion-transfusion therapy. Study guide. Moscow.2016
3. Blindar V.N., Zubrikhina G.N. Hematological method issledovaniya. Management for doctors. Moscow. 2016 g.
4. Vorobev A.I. Management of Hematology. Leadership. Moscow. 2005.

Additional:

1.Volkova S.A. Fundamentals of clinical hematology. Textbook - Nizhny Novgorod. Lower GMA 2013
2. Mikhailov V.G. Hermatology course 2002
3.Naimitdinov S.T. Fundamentals of clinical hematology. Textbook. 1998

Methodological support published in the department:

1. Boltayev K.J., Akhmedova N.Sh. Hemoblastoses. Study guide. 2018
2. Boltayev K.J., Akhmedova N.Sh. Hematopoietic anemias. Study guide. 2022
3. Sulaymonova G.T., Boltayev K.J. Anemias on the background of chronic heart failure. Monograph. 2022

Sites:

1. www.tma.uz
2. www.zyonet.uz
3. www. info@ minzdrav.uz
4. www.info@tma.uz
5. http://www.rusmedserv.com/ hematology/,
6. www.ziyonet.uz
7. www.medlincs.ru
8. www.medbook.ru.
9. http://www.edu.uz
10. http://www.pedagog.uz
11. www.lex.uz