INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Internal Medicine Department

SYLLABUS
Hematology

2025-2026 academic year
for students of medical faculty
3 course 7 semester, 1-9groups
2 credits (60 h, including auditorial 36 h, independent work 24 h)

Lecturer: **Makimbetov Emil**
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Venue: Zoom

Practical classes: **Makimbetov Emil**
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Venue: Department in National Center of Oncology and Hematology

The Syllabus is considered
at the meeting of the department of internal medicine
Protocol № 1 dated 03.09.2024
Head of the department prof. Kudaibergenova N.T.

Course Objective: consists in mastering the knowledge of diseases of internal organs, as well as the principles of diagnosis, skills and abilities for the treatment and prevention of internal diseases.
After study of the discipline the student must:
Knowledge:
- issues of medical ethics and deontology;
- epidemiology, the influence of etiological factors and risk factors on the course and outcome of diseases of internal organs;
- modern theories of the pathogenesis of the main internal diseases in adults;
- modern classification, etiology, pathogenesis, clinical and laboratory investigation of the main diseases of internal organs;
- modern diagnostic methods, standards for the treatment of diseases of internal organs;
- therapeutic nutrition for internal diseases;
- examination of a patient with pathology of internal organs;
- principles of preventive measures - identification of risk factors, primary and secondary prevention of non-communicable diseases;
- rules for issuing certificates and certificates for work of patients with internal diseases.
Skill:
- communicate with patients in compliance with deontological norms and principles;
- get information about the disease, establish possible causes, taking into account the influence of social, hereditary, age and climatic factors on the body;
- assess the severity of the patient's condition and, if necessary, provide emergency care;
- make the right decision on the tactics of patient management;
- conduct functional, laboratory and instrumental studies, evaluate them;
- recognize the features of the clinical course, identify complications and concomitant diseases;
- conduct differential diagnosis, formulate and substantiate a clinical diagnosis;
- choose the tactics of management due to individual and pathogenetic characteristics;
- make a rehabilitation and prevention plan;
- monitor the patient in the intensive care unit;
- write a medical documentation in accordance with the law;
- analyze the scientific literature and prepare an essay on modern problems of diseases of internal organs.
Attitude:
- fundamentals of medical deontology and medical ethics;
- evaluation of the results of laboratory and special research methods (clinical, functional, morphological, biochemical, immunological, serological parameters of blood, urine, sputum, feces, cerebrospinal fluid, coagulogram indicators);
- interpretation of the results of functional examination of the respiratory system, cardiovascular system, gastrointestinal tract, liver, kidneys, central nervous system, blood system etc.;
- the method of management of internal diseases, pathological conditions, in accordance with the standard of medical care for diseases of internal organs;
- registration of medical documentation in the hospital and on an outpatient basis.
Pre-requisites.
Anatomy (macro-microanatomy)
Normal physiology
Pathological anatomy
Pathological physiology
Clinical Pharmacology
Propedtherapy
Post-requisites.
Surgical diseases
Occupational diseases
Oncology
Public health
Dermatovenereology
Outpatient conditions
Medical supervision
Family Medicine
Anesthesiology, Intensive Care, Emergency Conditions

THEMATIC PLAN OF LECTURES

№	Theme of lecture	Hours	Date
1	Hypoproliferative and hemolytic anemias. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
2	Thrombocytopenia, hemophilia. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
3	Leukemia. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
4	Lymphoma. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
5	Myeloproliferative diseases. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026
6	Multiple myeloma. Definition, etiology, pathogenesis, classification, clinical presentation, disease progression, complications, diagnosis, treatment, and prevention.	2	09.2025-05.2026

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1	Clinical analysis of patients with iron deficiency and megaloblastic anemia.	2	09.2025-05.2026
2	Clinical Review of Patients with Aplastic Anemia.	2	09.2025-05.2026
3	Clinical Review of Patients with Hemolytic Anemia	2	09.2025-05.2026
4	Clinical Review of Patients with Thrombocytopenia and Hemophilia.	2	09.2025-05.2026
5	Clinical Review of Patients with Hodgkin's Lymphoma.	2	09.2025-05.2026
6	Module 1.		
7	Clinical Review of Patients with Non-Hodgkin's Lymphoma	2	09.2025-05.2026
8	Clinical Review of Patients with Acute Leukemia.	2	09.2025-05.2026
9	Clinical Review of Patients with Chronic Leukemia.	2	09.2025-05.2026
10	Clinical Review of Patients with Myelodysplasia and Multiple Myeloma. Myeloproliferative Diseases	2	09.2025-05.2026
11	Hematology Emergencies. Review of Clinical Situations.	2	09.2025-05.2026
12	Module	2	09.2025-05.2026

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	Theme of independent work	Hours	Date
1	Thalassemia	2	09.2025-05.2026
2	Sickle cell anemia	2	09.2025-05.2026
3	Membranopathies	2	09.2025-05.2026
4	Enzymopathy	2	09.2025-05.2026
5	Thrombotic thrombocytopenic purpura	2	09.2025-05.2026
6	Lymphadenopathy	2	09.2025-05.2026
7	Splenomegaly	2	09.2025-05.2026
8	Mononucleosis	2	09.2025-05.2026
9	Hodgkins disease in children	2	09.2025-05.2026
10	High grade lymphoma	2	09.2025-05.2026
11	Paraproteinemia	4	09.2025-05.2026

Recommended reading for the discipline:

1. Basic:

№	Authors	Title	The year of publishing
1.	Harrison. Braunwald E.	Internal Medicine	2001
2.	Harrison. Braunwald E.	Principles of Internal Medicine	2001
3.	Harrison. Braunwald E.	Principles of Internal Medicine	2001
4.	Harrison. Braunwald E.	Principles of Internal Medicine	2005
5.	Harrison.Wiener Ch.M.	Principles of Internal Medicine. Self-Assessment and Board Review	2005
6.	Harrison. Fauci A.S.	Principles of Internal Medicine	2008
7.	Harrison's Kasper D.L.	Principal of Internal Medicine.	2015
8.	S Melmed, R Koenig, C Rosen., et al.	Textbook of Endocrinology	2017
9.	Harrison Liu KD, Chertow GM.	Principles of Internal Medicine	2022

1. Additional:

№	Authors	Title	The year of publishing
1.	Davidson. Haslett C.	Priciples and Practice of Medicine	2002
2.	Davidson. Boon N.	Priciples and Practice of Medicine	2006
3.	Davidson. Ralston S.	Priciples and Practice of Medicine	2018

Grading policy and procedures for all types of work

For the period of studying the discipline, the student gains points for the relevant parameters (per unit):
current score - 40 points
independent work - 20 points
control score (final assessment of knowledge per unit) - 40 points
Maximum score - 100 (40+20+40)

Grading system for student's achievements

Criteria for assigning grades for the course				
Maximum score	Intervals			
	« unsatisfactory»	« satisfactory»	«good »	«excellent»
40	0-23	24-30	31-35	36-40
Interval criteria	Does not complete homework or prepare for class, and is inactive in class. Unable to apply acquired knowledge to solving clinical problems.	Completes assignments, but with serious errors, is active in class, but does not differentiate the diagnosis of various diseases.	Completes homework, and is almost always prepared for class. Able to solve clinical problems, but with minor errors.	Completes homework, and correctly analyzes clinical problems involving various diseases
IWS-20	0-11	12-14	15-17	18-20
Interval criteria	assignments for independent work are not completed, or they contain numerous errors; the student has not met the requirements for composing the work	The tasks for independent work are completed, but with errors; 2 points are missing from the program.	assignments for independent work are completed, mostly without errors or with minor errors, one point is missing from the program	assignments for independent work are completed without errors, the material is fully prepared according to the sample
40	0-23	24-30	31-35	36-40

Interval criteria	The answer represents disjointed knowledge with significant errors regarding the question; - fragmentary and illogical presentation; the student does not understand the connection between the question being discussed and other subjects of the course; speech is illiterate; - significant errors in demonstrating exercises; incorrect choice of tactics for the given disease; - incorrect answers to additional questions.	The answer is incomplete, contains errors in detail, the ability to convey the meaning of generalized knowledge is not demonstrated, and the student's speech requires correction and adjustments; - the logic and consistency of presentation are impaired; the student is unable to independently identify essential and non-essential features and cause-and-effect relationships; - errors in the prescription and correct choice of treatment method; - numerous errors in patient management tactics; - the student is unable to answer most of the additional questions.	A complete, detailed answer to the question was given, demonstrating the ability to distinguish essential and non-essential features and cause-and-effect relationships; - the narrative is not logical enough, with isolated errors in details, which the student corrected with the teacher's assistance; - insufficient confidence and speed in demonstrating the exercises; - isolated errors in technique; - answers to additional questions are correct, but not sufficiently complete and clear.	A complete, detailed answer to the question posed is provided; - the answer has a clear structure and logical sequence, reflecting the essence of the concepts, theories, and phenomena being explored; - the exercises are selected and performed correctly; - answers to additional questions are clear and concise;

Conduct Policy: (lateness, absence, behavior in the auditorium, late submission of work).

- Punctuality and completion of tasks.
- Mandatory attendance of classes.
- Attending class in a clean medical uniform.
- Eliminating conversations on a cell phone in the classroom.
- Active participation in the learning process.
- Doing homework on time.
- Academic detention at the time specified by the teacher.

For violations of the Conduct Policy, the total points for discipline might be reduced to 1-10 points.

Academic Ethics Policy.

- Be tolerant, respect the opinions of others.
- Formulate objections in the correct form.
- Constructively support feedback in all classes.
- Plagiarism and other forms of dishonest work are unacceptable. Plagiarism includes the following: the absence of references when using printed and electronic materials, quotes, thoughts and works of other authors or students.
- Prompting and cheating during tests, exams, classes is unacceptable as well as passing an exam for another student, unauthorized copying of materials.

For violations of the Academic Ethics Policy, the total points for the discipline may be reduced to 1-10 points.

Guidelines for the lessons of the discipline

Key questions covered in lesson 1: Clinical Review of Patients with Iron Deficiency and Megaloblastic Anemia.

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:

[1]pp.2875-2900, 2941-2979

[2]pp.33-73

Key questions covered in lesson 2: Clinical Review of Patients with Aplastic Anemia.

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.3035-3074
[2]pp.288-297

Key questions covered in lesson 3: Clinical Review of Patients with Hemolytic Anemia

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.2979-3032
[2]pp.73-88

Key questions covered in lesson 4: Clinical Review of Patients with Thrombocytopenia and Hemophilia.Pathogenesis of disease

1. Clinical features
2. Investigation
3. Principles of treatment.

Recommended reading for the class:
[1]pp.3432-3459
[2]pp.330-345

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.
5. Module 1 (MCQ)

Recommended reading for the class:
[1]pp.3459-3491
[2]pp.345-362

Key questions covered in lesson 5: **Clinical Review of Patients with Hodgkin's Lymphoma.**

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.3263-3276
[2]pp.245-253

Key questions covered in lesson 7: Clinical Review of Patients with Non-Hodgkin's Lymphoma

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.3220-3263
[2]pp.253-272

Key questions covered in lesson 8: Clinical Review of Patients with Acute Leukemia.

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.3174-3194, 3100-3139
[2]pp.178-191, 223-234

Key questions covered in lesson 9: Clinical Review of Patients with Chronic Leukemia.

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp.3194-3220, 3139-3174
[2]pp.191-200, 234-245

Key questions covered in lesson 10: Clinical Review of Patients with Myelodysplasia and Multiple Myeloma. Myeloproliferative Diseases

1. Pathogenesis of disease
2. Clinical features
3. Investigation
4. Principles of treatment.

Recommended reading for the class:
[1]pp. 3317-3356
[2]pp. 272-288

Key questions covered in lesson 11: Emergencies in Hematology. Review of Clinical Situations.Pathogenesis of disease

5. Clinical features
6. Investigation
7. Principles of treatment.

Recommended reading for the class:
[1]pp.3035-3074,
[2]pp. 214-223,

Methodological instructions for the implementation of independent work on the discipline.

Theme of independent work	Instructions
Thalassemia	To create a comparative table
Sickle cell anemia	
Membranopathies	
Enzymopathy	
Thrombotic thrombocytopenic purpura	To prepare PPT
Lymphadenopathy	Write a summary
Splenomegaly	Write a summary
Mononucleosis	Write a summary
Hodgkins disease in children	To prepare PPT
High grade lymphoma	To prepare PPT
Paraproteinemia	To prepare PPT