INTERNATIONAL HIGHER SCHOOL OF MEDICINE

INTERNAL MEDICINE DEPARTMENT

SYLLABUS

Nephrology

2026-2027 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:	Budaichieva Asel Bektashevna
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Venue:	Republic endocrinology center, National Hospital

The Syllabus is considered
at the meeting of the department of internal medicine
Protocol № 1 dated 28.08.2026
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	Acute Glomerulonephritis. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2026-05.2027
2	Chronic Glomerulonephritis. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2026-05.2027
3	Nephrotic Syndrome. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2026-05.2027
4	Renal Amyloidosis. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2026-05.2027
5	Chronic Pyelonephritis. Definition, Etiology, Pathogenesis, Classification, Clinical Features, Disease Course, Complications, Diagnosis, Treatment, and Prevention.	2	09.2026-05.2027
6	Acute Kidney Injury. Definition, etiology, pathogenesis, classification, clinical picture, course of the disease, complications, diagnosis, treatment and prevention.	2	09.2026-05.2027

THEMATIC PLAN OF PRACTICAL CLASSES

№	Theme of practical class	Hours	Date
1	Acute Glomerulonephritis. Diagnosis with a Case Study.	2	09.2026-05.2027
2	Chronic Glomerulonephritis (CGN). Diagnosis of Various Variants of CGN with a Clinical Case Study.	2	09.2026-05.2027
3	Nephrotic Syndrome with a Clinical Case Study.	2	09.2026-05.2027
4	Clinical Case Study of Patients with Acute Kidney Injury.	2	09.2026-05.2027
5	Hemodialysis. Clinical Case Study.	2	09.2026-05.2027
6	Module 1.	2	09.2026-05.2027
7	Clinical Case Study of Patients with Chronic Pyelonephritis.	2	09.2026-05.2027
8	Renal Amyloidosis with a Case Study.	2	09.2026-05.2027
9	Clinical Case Study of Patients with Chronic Kidney Disease.	2	09.2026-05.2027
10	Chronic Renal Failure. Replacement Therapy.	2	09.2026-05.2027
11	Renal Anemia with Clinical Case Study.	2	09.2026-05.2027
12	Module 2	2	09.2026-05.2027

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

Unit №	Theme of independent work	Hours	Date
1	Renal anemia	2	09.2026-05.2027
2	Diet and regimen for chronic hemodialysis. Management of patients after kidney transplants	2	09.2026-05.2027
3	Diabetic nephropaty	2	09.2026-05.2027
4	Nephrotic crisis	2	09.2026-05.2027
5	Renovascular hypertention	2	09.2026-05.2027
6	Toxic dugs, System lupus nephritis	2	09.2026-05.2027
7	Pregnancy nephropaty	2	09.2026-05.2027
8	Hemodialysis	4	09.2026-05.2027
9	Kidney transplantation. Indications. Contraindications	2	09.2026-05.2027

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. Practice – (2 h)

Key questions covered in Practice class №1: Acute Glomerulonephritis. Diagnosis with a Case Study.– (2 h).
1 Clinical characteristics acute glomerulonephritis
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1549-1562
(2) pp 79-89
(4) pp 337-414.

Key questions covered in Practice class №2: Chronic Glomerulonephritis (CGN). Diagnosis of Various Variants of CGN with a Clinical Case Study.– (2 h).
1 Clinical characteristics Chronic glomerulonephritis
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1549-1562
(2) pp 79-89
(4) pp 335-414.

Key questions covered in Practice class №3: Nephrotic Syndrome with a Clinical Case Study. (2 h).
1 Clinical characteristics Nephrotic syndrome
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1549-1562
(2) pp 79-89
(4) pp 335-414.

Key questions covered in Practice class № 4: Clinical Case Study of Patients with Acute Kidney Injury.– (2 h).
1 Clinical characteristics Acute renal injury
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1562-1572
(2) pp 79-98
(7) pp 1-115.

Key questions covered in Practice class №5: Hemodialysis. Clinical Case Study.– (2 h).
1 Definition of hemodialysis
2 Indications: acute kidney injury (AKI), chronic kidney disease (CKD stage 5/ESRD)
3 Epidemiology and importance in nephrology practice
4 Principles of Hemodialysis
5 Clinical Indications and Patient Selection

Recommended reading for the class
(1) pp 1572-1582
(2) pp 98-109
(6) pp 1-150.
Key questions covered in Practice class № 7: Clinical Case Study of Patients with Chronic Pyelonephritis.– (2 h).
1 Clinical characteristics pyelonephritis
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1562-1572
(2) pp 89-95
(6) pp 1-150.

Key questions covered in Practice class № 8 : Renal Amyloidosis with a Case Study. (2 h).
1 Clinical characteristics Renal amyloidosis
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1549-1562
(2) pp 89-95
(4) pp 335-414.

Key questions covered in Practice class №9: Clinical Case Study of Patients with Chronic Kidney Disease. (2 h).
1 Clinical characteristics CKD
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1549-1562
(2) pp 79-89
(4) pp 335-414.

Key questions covered in Practice class №10 : Chronic Renal Failure. Replacement Therapy. – (2 h).
1 Clinical characteristics Chronic renal failure
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1572-1582
(2) pp 98-109
(6) pp 1-150.
Key questions covered in Practice class №11: Renal Anemia with Clinical Case Study. – (2 h).
1 Clinical characteristics Renal Anemia
2 Differential diagnosis
3 Diagnosis, treatment
4 Prevention
Recommended reading for the class
(1) pp 1562-1572

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

Theme of independent work	Instructions
Renal anemia	To create a comparative table
Diet and regimen for chronic hemodialysis. Management of patients after kidney transplants	
Diabetic nephropaty	
Nephrotic crisis	
Renovascular hypertention	To prepare PPT
Toxic dugs, System lupus nephritis	Write a summary
Pregnancy nephropaty	Write a summary

Hemodialysis	Write a summary
Kidney transplantation. Indications. Contraindications	To prepare PPT

Methodological instructions for the implementation of independent work on the discipline

1. Working with literature Harrison_39_s_Principles_of_Internal_Medicine_Loscalzo_21_ed_2022
2. The Merc Manual. Thirteenth Edition, Merc Sharp &Dohme, 1999
3. Davidson's Priciples and Practice of Medicine/Edinburgh-London-New York-Sydney. 2010
4. Kidney Disease: Improving Global Outcomes (KDIGO) Blood Pressure Work Group. KDIGO Clinical Practice Guideline for the Management of Blood Pressure in Chronic Kidney Disease.Kidney Int Suppl. 2012; 2: 337-414.
5. www.kdigo.org/clinical_practice_guidelines/pdf/KDIGO_BP_GL.pdf.
6. Kidney Disease: Improving Global Outcomes (KDIGO) CKD Work Group. KDIGO 2012 Clinical Practice Guideline for the Evaluation and Management of Chronic Kidney Disease.Kidney Int Suppl. 2013; 3: 1-150.

2. Summary of information

- Carry out an adequate examination (with regard for complaints and anamnesis) of the patient with renal diseases;
- conduct researches of renal diseases;
- have the idea about renal biopsy, intravenous fistula;
- construction of preliminary, differential and clinical diagnosis; -
managing symptomatic and etiological treatment.

3. Working with clinical case

Estimate physical development and influence of disease of renal on physical development,
- investigate and estimate a condition of renal characteristics of renal diseases.
- investigate kidney options and to describe their size, localization, quantity, morbidity in all renal system
- skills of renal biopsy.

4. Answer the case questions

1. Acute glomerulonephritis. Etiology and pathogenesis. Clinical features. Management. Prognosis. Prevention.
2. Chronic glomerulonephritis. Pathogenesis. Clinical features. Diagnosis. Biopsy of kidney. Morphological type glomerulopathy. Treatment. Prognosis.
3. Amyloidosis. Classification. Pathogenesis. Clinical features. Diagnosis. Treatment/ Prevention of secondary amyloidosis.
4. Nephrotic syndrome. Etiology. Pathogenesis. Diagnosis. Biopsy of kidney. Complications. Treatment.
5. Chronic renal disease. Definition. Criteria of diagnosis. Clinical features. Guideline for the Evaluation and Management of Chronic Kidney Disease.
6. Chronic pyelonephritis. Risk factors. Etiology. Pathogenesis. Clinical features. Diagnosis. Treatment. Prevention.
7. Renovascular hypertension. Etiology. Pathophysiology. Clinical features. Diagnosis. Treatment.
8. Acute renal failure. Etiology. Classification. Pathogenesis. Clinical features. Diagnosis. Treatment. Hemodialysis. Prognosis.
9. Chronic renal failure. Classification. Etiology. Pathogenesis. Clinical features. Guideline for the Evaluation and Management of Chronic renal failure. Hemodialysis.
10. End-stage chronic renal failure. Replacement therapy. Chronic hemodialysis. Indications and contraindications. Indications for kidney transplantation. Complications. Management of patients.