INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Infectious Diseases Department

SYLLABUS
HIV Infection (elective course)

2025–2026 academic year
for students of Medicine Faculty
5th-year medical students (Semester IX)
2.0 credits (**60 hrs,** including auditorial-32 hrs, independent work-28 hrs)

Lecturer: Prof. Kutmanova Ainura Zarylbekovna
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Lectures online zoom

Venue: Republican Clinical Infectious Diseases Hospital, 70 L. Tolstoy str.
Department of Infectious Diseases of HISM

The Syllabus is considered
at the meeting of the Department of Infectious Diseases
Protocol № 2 dated 29/08/2025
Head of the Department prof. A.Z. Kutmanova

Course Objective
Upon completion of the elective **"HIV Infection,"** students will have the knowledge and practical skills to:

- clinically diagnose and stage HIV infection;
- use laboratory and other diagnostic modalities appropriately;
- initiate, adjust, and monitor antiretroviral therapy (ART);
- provide ongoing follow-up in accordance with national/WHO guidelines.

After study of the discipline the student must:
Knowledge:

1. Key signs and symptoms of HIV by WHO clinical stage.
2. Core laboratory parameters used in diagnosis and monitoring (screening/confirmatory tests, CD4 count, viral load, resistance testing where indicated).
3. Principles and first-line regimens of antiretroviral therapy.
4. Preventive measures against HIV-infection

Skills:

1. Take a focused medical history (including HIV risk assessment) and epidemiologic history.
2. Determine the clinical stage of HIV infection. Perform a targeted physical examination.
3. Formulate a diagnostic plan and order appropriate tests. Interpret laboratory results (immunologic, serologic, virologic, and other relevant tests).
4. Initiate and adjust ART; develop a monitoring plan; recognize treatment failure and adverse effects.

Attitudes:

1. Confidentiality and non-stigmatizing, patient-centered communication.
2. Informed consent and effective pre-/post-test counseling.
3. Respect for human rights and ethical partner notification.
4. Teamwork with multidisciplinary services and adherence to infection-prevention and needlestick-safety protocols.

Placement of the Course within the Curriculum
Prerequisites
• Anatomy (macro-microanatomy)
• Normal physiology
• General pathology
• Microbiology, virology, and immunology
• Propaedeutic therapy
• General surgery
• Neurology and fundamentals of neurosurgery
• Dermatovenereology
Postrequisites (Follow-on Courses)

- Family Medicine
- Outpatient (Polyclinic) Therapy

THEME PLAN OF LECTURES

№	Theme of lecture	Hours	Date
1	1: General information on HIV/AIDS. Epidemiology, pathophysiology	2	25.08.-31.05.
	2: Clinical Staging of HIV Infection: WHO Staging and CDC Classification	2	25.08.-31.05.
2	3: ART regimes in adults and adolescents	2	25.08.-31.05.
	4: ART: treatment failure. Adherence to ART.	2	25.08.-31.05.
	Total	**8**	25.08.-31.05.

THEME PLAN OF PRACTICE CLASSES

№	**Theme of practical class**	**Hours**	**Date**
1	P. 1: HIV-infection: structure and functions of Immune system; Life cycle of HIV and pathophysiology, Lab. Diagnosis	2	25.08.-31.05.
	P. 2: Clinical stages of HIV-infection	2	25.08.-31.05.
	P. 3: Opportunistic infections	4	25.08.-31.05.

	Module test	2	25.08.-31.05.
2	P. 4: ART in Adults, adolescents and children	2	25.08.-31.05.
	P. 5: Adherence to ART.	2	25.08.-31.05.
	P. 6: ART: treatment failure, management of ARV toxicities	2	25.08.-31.05.
	P. 7: Switch of ARV drugs with toxicities.	2	25.08.-31.05.
	P. 8: Substitution of drugs due to drug resistance.	2	25.08.-31.05.
	P. 9: Prevention of HIV infection (pre- and post-exposure, PMTCT)	2	25.08.-31.05.
	Module test	2	25.08.-31.05.
	Total	**24**	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	Theme of independent work	Hours	Date
1	1: HIV-infection: pathophysiology (structure and functions of Immune system; Life cycle; Lab. Diagnosis)	4	
	2: Clinical stages of HIV-infection (Determine in case of patients)	4	
	3: Opportunistic infections (Determine in case of patients)	4	
2	4: ART in Adults, adolescents and children (Determine in case of patients)	4	
	5: Adherence to ART. (Determine in case of patients)	4	
	6: ART: treatment failure, management of ARV toxicities (Determine in case of patients)	4	
	7: Switch of ARV drugs with toxicities. (Determine in case of patients)	4	
	8: Substitution of drugs due to drug resistance. (Determine in case of patients)	4	
	9: Prevention of HIV infection (pre- and post-exposure, PMTCT) (Determine in case of patients)	4	
	Total	**28**	

Recommended reading for the discipline:
Basic:

1. Dennis L. Kasper, Anthony S. Fauci “Harrison’s, Infectious Diseases”, 2022. https://www.stikesmuwsb.ac.id/wp-content/uploads/2022/11/HARRISONS-INFECTIOUS-DISEASE.pdf
2. National Guidelines for HIV Care and Treatment. New Delhi: NACO, Ministry of Health and Family Welfare, Government of India. 2021.
3. Paul A.Pham. The Bartlett pocket guide to HIV/AIDS treatment 2019. www.hivbook.com

Additional:

1. WHO. Consolidated guidelines on HIV prevention, testing, treatment, service delivery and monitoring: recommendations for a public health approach, 2021. https://www.who.int/publications/i/item/9789240031593

2. Manuel Battegay and Lene Ryom, eacsociety.org EACS Guidelines, 2023. https://www.eacsociety.org/media/guidelines-12.0.pdf

Resources of the information and telecommunication network "Internet"

1. https://youtu.be/rIiegij3DQs
2. https://youtu.be/MHDgcQ01TQU
3. https://youtu.be/T-UBVbZ8Lto
4. https://youtu.be/c7bdp7-wILA
5. https://t.me/+VkCtka825jT15329

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

Grading criteria per discipline				
Maximumscore	**Intervals**			
	«unsatisfactory»	**«satisfactory»**	**«good»**	**«excellent»**
Current control - 40	0-23	24-30	31-35	36-40
Interval description	Does not perform the task, does not know and does not understand the lecture material of the lesson, which prevents further assimilation of the program; cannot apply the acquired knowledge to solving situational tasks, test questions. Does not answer the questions of the teacher During the examination of the patient does not have practical skills	Does not complete the task in full, has gaps in the assimilation of lecture material, has difficulties in applying knowledge to solve situational problems, test questions; does not fully and accurately answer the teacher's questions. When examining a patient, he has little practical skills	Performs the task in full, knows the lecture material, but sometimes makes mistakes when solving situational tasks and test questions, understands the main content of the lecture material, gives correct answers to the teacher's questions. During the examination of the patient, he partially possesses practical skills	Performs the task in full, easily applies knowledge and skills in solving situational tasks and test questions, rarely makes mistakes, gives complete and correct answers to the teacher's questions. When examining a patient, he fully possesses practical skills
Independent work - 20	0-11	12-15	16-17	18-20
Interval description	Presentation, report, table, situational task are missing	The content of the presentation, report, tables partially correspond to the given topic, the sequence of presentation of theoretical questions is broken: etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnostics, treatment and prevention. Situational tasks contain little	The content of the presentation, report, tables do not fully correspond to the given topic, the sequence of presentation of theoretical issues (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnostics, treatment and prevention) is not fully preserved.	The content of the presentation, report, tables correspond to the given topic, the sequence of presentation of theoretical questions (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnostics, treatment and prevention) is completely preserved.

		description of the clinical case	Situational tasks do not fully contain a description of a clinical case	Situational tasks contain a description of the entire clinical case
Control work (module) - 40	0-23	24-30	31-35	36-40
Interval description	Does not know the answers to test questions and situational tasks	Poorly knows the answers to test questions and situational tasks	Knows the answers to test questions and situational tasks well	Perfectly knows the answers to test questions and situational tasks

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

UNIT №1 « Pathogenesis and clinical features of HIV infection »
Content of Unit № 1
Class 1.
Key questions covered in Lecture №1: HIV-infection: pathophysiology
General information: Epidemiology, Structure of HIV and life cycle, Pathophysiology, Lab. Diagnosis.
Class 2.
Key questions covered in Practice class №1: HIV-infection
1. Structure and functions of Immune system.
2. Structure of HIV and life cycle.
3. Lab. Diagnosis of HIV.

Recommended reading for the class:
[1] pp. 54, 785-792
Class 3.
Key questions covered in Lecture №2: Clinical stages of HIV-infection**.**
1. Clinical stages of HIV infection (WHO, CDC)
2. Characteristics of 4 clinical stages
3. Stages of HIV according to CD4 cells
4. Opportunistic infections

Class 4.
Key questions covered in Practice class №2: Clinical stages of HIV-infection**.**
1. Clinical stages of HIV infection (WHO, CDC)
2. Characteristics of 4 clinical stages
3. Stages of HIV according to CD4 cells

Recommended reading for the class:
[1] pp. 792–886
[2] pp. 3–24

Unit №2 «Antiretroviral therapy»
Content of unit 2
Class 5
Key questions covered in Lecture №3: ART regimes in adults and adolescents
1. Classes and Clinical pharmacology of ARV drugs
2. When to start ART
3. Antiretroviral Therapy Regimens
4. Monitoring of Patients on ART

Class 6.
Key questions covered in Practice class №3: Opportunistic infections
1. Viral
2. Bacterial
3. Fungal.
4. Protozoal

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 117 – 126, 283 - 458
Class 7
Key questions covered in Lecture №4: ART: treatment failure. Adherence to ART.
1. Definition of ART failure
2. Monitoring and Management of ARV toxicities
3. Definition of adherence
4. Components of adherence

Class 8
Key questions covered in Practice class №4: ART in Adults and adolescents**.**
1. Antiretrovirals: classes
2. Pharmacokinetics
3. First line regimes

Recommended reading for the class:
[1] pp. 792–886
[2] pp. 27-30
Class 9
Key questions covered in Practice class №5: Adherence to ART.
1. Definition of adherence
2. Components of adherence

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 84–116
Class 10
Key questions covered in Practice class №6: ART: treatment failure, management of ARV toxicities
1. Definition of ART failure
2. Monitoring of ART
3. Management of ARV toxicities

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 57-64
Class 11
Key questions covered in Practice class №7: Switch of ARV drugs with toxicities
1. Signs of ARV drugs toxicities on NRTI
2. Signs of ARV drugs toxicities on NNRTI
3. Signs of ARV drugs toxicities on II
4. Signs of ARV drugs toxicities on PI

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 57-64
Class 12
Key questions covered in Practice class №8: Substitution of drugs due to drug resistance.
1. Definition of ART resistance
2. Signs of ARV drugs resistance

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 57-64

Class 13
Key questions covered in Practice class №9: Prevention of HIV infection (pre- and post-exposure, PMTCT)

1. Definition of pre- and post-exposure, PMTCT
2. Indicators for pre- and post-exposure, PMTCT

Recommended reading for the class:
[1] pp. 792-886
[2] pp. 65-83

Guidelines for Independent Study in this Course

For topisc, students working independently should be able to:

- Identify key signs and symptoms of HIV infection according WHO classification (make a Ppt);
- Recognize common opportunistic infections and their clinical presentations (make a Ppt);
- Select and interpret laboratory tests used for the diagnosis and monitoring of HIV (screening/confirmatory tests, CD4, viral load). Make a Ppt: the task can be performed by group of students, each group 2-3 students (TBL);
- Outline first-line antiretroviral therapy (ART) regimens and indications (solve the clinical cases (CBL));
- Describe ART toxicities, drug–drug interactions, and principles of resistance (make a chart);
- Explain strategies for prevention of HIV infection (e.g., PMTCT, PEP/PrEP, IPC)- make a Ppt.