INTERNATIONAL HIGHER SCHOOL OF MEDICINE

Department of Infectious Diseases

SYLLABUS
Tropical Medicine
2026-2027 academic year
for students of medical faculty
5 course X semester
2,0 credits (60 hrs, including auditorial 32 h, independent work – 28 h)

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

The Syllabus is considered
at the meeting of the department of infectious diseases
Protocol № _1____dated ____26.08.2026_____
Head of the department professor A.Z. Kutmanova

Course Objective: To develop the knowledge and practical skills needed to establish clinical diagnoses of tropical diseases, to select and interpret appropriate laboratory and instrumental (e.g., imaging) investigations, and to initiate evidence-based, etiology-directed and pathophysiology-targeted therapy, including elements of emergency care.

Course goals

1. Analyze the etiology, pathogenesis, and clinical features of major tropical diseases.
2. Develop differential diagnoses and outline the principles of treatment and prevention.
3. Build practical skills for early recognition and initial management of tropical diseases.
4. Use laboratory, imaging and other diagnostic methods appropriately and safely.

Learning outcomes

Upon completion of the course, students will be able to:

Knowledge:

1. Describe the clinical features of tropical diseases caused by infectious microorganisms.
2. Identify clinical and epidemiologic criteria for hospitalization/isolation.
3. Explain the main laboratory and point-of-care methods used to diagnose tropical diseases (e.g., microscopy, culture, antigen/serology, molecular tests).
4. Recognize common complications and outcomes.
5. Summarize principles of treatment and prevention (including vaccination, chemoprophylaxis, vector control and public health measures).

Skills:

1. Obtain a focused medical history, including travel and exposure (epidemiologic) history.
2. Perform a targeted physical examination.
3. Develop a prioritized differential diagnosis.
4. Formulate a diagnostic plan and select appropriate tests.
5. Interpret key laboratory and imaging results.
6. Initiate evidence-based, etiology-directed and pathophysiology-targeted therapy, including emergency interventions when indicated.
7. Provide prevention counselling (e.g., vector avoidance, safe water/food, vaccination; PEP/PrEP where relevant).
8. Recognize indications for referral/transfer and notify public-health authorities according to national regulations.

Professional attitudes:

1. Demonstrate patient-centered, culturally sensitive communication and respect for confidentiality.
2. Adhere to infection prevention and control/biosafety practices.
3. Apply principles of antimicrobial stewardship and rational use of diagnostics.
4. Work effectively in interprofessional teams and escalate care appropriately.
5. Show ethical practice and a commitment to equity in resource-limited settings.
6. Engage in continuous learning and critical appraisal of evidence.

Curricular Placement of the Discipline

Prerequisites

- Anatomy (macro- and microanatomy)
- Physiology
- Pathology (Anatomic Pathology)
- Pathophysiology
- Microbiology, Virology, and Immunology
- Clinical Propaedeutics / Introduction to Clinical Medicine
- Internal Medicine
- General Surgery
- Neurology
- Dermatology and Venereology
- Epidemiology

Subsequent Courses (Post-requisites)

- Family Medicine
- Ambulatory/Internal Medicine Clinic (Polyclinic Therapy)

THEMATIC PLAN OF LECTURES

	Theme of lecture	**Hours**	**Date**
№	**Unit №1 (Transmissible infections)**		
1	**Malaria** (etiology, classification, epidemiology, pathogenesis, clinical manifestations, complications, laboratory diagnosis, differential diagnosis, treatment, prevention)	2	15.09.-26.06.
2	**Chikungunya Fever** (etiology, epidemiology, pathogenesis, clinical manifestations, complications, laboratory diagnosis. differential diagnosis, treatment, prevention)	2	15.09.-26.06.
3	**Hemorrhagic fevers** (etiology, classification, epidemiology, pathogenesis, clinical manifestations, complications, laboratory diagnosis. differential diagnosis, treatment, prevention)	2	15.09.-26.06.
	Unit №2 (Bacterial and parasitic infections)		
4	**Leprosy** (etiology, classification, epidemiology, pathogenesis, clinical manifestations, complications, laboratory diagnosis. differential diagnosis, treatment, prevention)	2	15.09.-26.06.
	Total	**8**	

THEMATIC PLAN OF PRACTICAL CLASSE

	Theme of practical class	**Hours**	**Date**
	Unit №1 (Transmissible infections)		
1	**Malaria:** classification by *Plasmodium* species; transmission and epidemiology; pathogenesis; clinical manifestations of uncomplicated and severe (complicated) malaria; complications; laboratory and differential diagnosis; treatment of uncomplicated and severe malaria in adults, children, and pregnant patients. Prevention: specific (vaccination; chemoprophylaxis) and non-specific (vector control, personal protection; environmental management; blood safety and surveillance).	4	15.09.-26.06.
2	**Leishmaniasis:** classification by *Leishmania* species (Old and New World species), transmission and epidemiology; pathogenesis; clinical manifestations (CL, MCL, VL, PKDL); complications; laboratory and differential diagnosis; treatment (per WHO/national guidance, tailored to species and resistance patterns); prevention.	2	15.09.-26.06.
3	**Chikungunya Fever:** transmission and epidemiology; pathogenesis; clinical manifestations of Chikungunya Fever; complications; laboratory and differential diagnosis; treatment of adults, children, and pregnant patients. Prevention: vector control, personal protection; environmental management.	2	15.09.-26.06.
4	**Hemorrhagic fevers:** classification by *Viral Hemorrhagic fevers* species, transmission and epidemiology; pathogenesis; clinical manifestations (Dengue fever, Yellow fever, Ebola virus, KFD); complications; laboratory and differential diagnosis; treatment (per WHO/national guidance); prevention.	3	15.09.-26.06.
5	**Japanese Encephalitis:** transmission and epidemiology; pathogenesis; clinical manifestations; complications; laboratory and differential diagnosis; treatment. Prevention: vector control, personal protection; environmental management.	1	15.09.-26.06.
6	Passing of Unit №1	2	15.09.-26.06.
7	**Unit №2 (Bacterial and parasitic infections)**		
8	**Amoebiasis:** transmission and epidemiology; pathogenesis; clinical classification; clinical manifestations of intestinal and extraintestinal Amoebiasis; complications; laboratory and differential diagnosis; treatment (per WHO/national guidance); prevention.	2	26.08.-31.05.

9	**Cholera:** transmission and epidemiology; pathogenesis; clinical manifestations; complications; 3 degrees of dehydration (clinical features and management); laboratory and differential diagnosis; treatment (per WHO/national guidance); prevention.	2	15.09.-26.06.
10	**Leprosy:** transmission and epidemiology; pathogenesis; classification by WHO (Paucibacillary, Multibacillary Leprosy), clinical manifestations; complications; laboratory and differential diagnosis; treatment (per WHO/national guidance); prevention.	4	15.09.-26.06.
11	Passing of Unit №2	2	15.09.-26.06.
	Total	**24**	

THEMATIC PLAN OF INDEPENDENT WORK OF STUDENTS

№	**Theme of independent work**	**Hours**	
	Unit # 1 (Transmissible infections)		
1	Differential diagnosis of Malaria caused by different species. Fill in the table. Make ppt presentation	4	15.09.-26.06.
2	Black water fever. Diagnosis	2	15.09.-26.06.
3	Treatment of Malaria. Working with National Guideline	2	15.09.-26.06.
4	Make a presentation on different types of Leishmaniosis	2	15.09.-26.06.
5	Differential diagnosis of Chikungunya Fever	2	15.09.-26.06.
6	Differential diagnosis of Hemorrhagic Fevers. Fill in the table. Make ppt presentation	6	15.09.-26.06.
7	Working with literature (National Guideline, WHO, CDC)	2	15.09.-26.06.
	Unit # 2 (Bacterial and parasitic infections)		
8	Make a presentation about Amoebiasis, including differential diagnosis of colitis syndrome	2	15.09.-26.06.
9	Make a presentation on Cholera about differential diagnosis with an other species which can leads to severe dehydration	2	15.09.-26.06.
10	Leprosy. Make a presentation about classification of Leprosy	2	15.09.-26.06.
11	Working with literature (National Guideline, WHO, CDC)	2	15.09.-26.06.
	Total	**28**	

Recommended reading for the discipline:
Basic:

1. Manson's Tropical Infectious Diseases Tropical disease 2014 Elsevier Ltd. All rights reserved.
2. Harrison's, Dennis L. Kasper, Anthony S. Fauci "Infectious Diseases", 2014.
3. Elaine C. Jongand Dennis L. Stevens Netter's "Infectious diseases", 2012. https://t.me/+VkCtka825jT15329
4. WHO, Guidelines for malaria, 2025. https://www.who.int/teams/global-malaria-programme
5. Clinical tools for cholera treatment facilities. Geneva: World Health Organization; 2024. https://doi.org/10.2471/B09194
6. WHO guidelines for clinical management of arboviral diseases: dengue, chikungunya, Zika and yellow fever. Geneva: World Health Organization; 2025. Licence: CC BY-NC-SA 3.0 IGO. https://iris.who.int/bitstream/handle/10665/381804/9789240111110-eng.pdf?sequence=2&isAllowed=y
7. WHO (2018). Guidelines for the diagnosis, treatment and prevention of leprosy. Licence: CC BY-NC-SA 3.0 IGO. https://iris.who.int/bitstream/handle/10665/274127/9789290226383-eng.pdf
8. WHO (2021) Towards Zero Leprosy. Global Leprosy (Hansen's Disease) Strategy 2021–2030 ISBN: 978-92-9022-850-9 https://www.who.int/publications/i/item/9789290228509
9. WHO (2024). Elimination of kala-azar as a public health problem in South-East Asia. Template dossier. Geneva: Licence: CC BY-NC-SA 3.0 IGO. https://iris.who.int/bitstream/handle/10665/380232/9789240102620-eng.pdf?sequence=1
10. WHO Vaccine-Preventable Diseases. Surveillance Standards. Japanese Encephalitis. Last updated: September 5, 2018. https://www.who.int/publications/m/item/vaccine-preventable-diseases-surveillance-standards-je

Additional:

1. Infectious Diseases Society of America (2017). Clinical Practice Guidelines for the Diagnosis and Management of Infectious Diarrhea https://pubmed.ncbi.nlm.nih.gov/29053792/
2. Murray, Patrick R. (2016). Medical microbiology / Patrick R. Murray, Ken S. Rosenthal, Michael A. Pfaller ; consultant, JMI Laboratories.—8th edition. http://dl.cafepezeshki.ir/book/Murray-Medical-Microbiology-8th-Edition(CafePezeshki.IR).pdf
3. Malaria training module for Multi-purpose health worker (2025) /Government of India, Ministry of Health&Family welfare, Directorate General of Health services https://ncvbdc.mohfw.gov.in/index1.php?lang=1&level=1&sublinkid=5899&lid=3686
4. World Health Organization. Health topic: Yellow fever [Internet]. 2025 [cited 2025 Jan 15] (https://www.who.int/health-topics/yellow-fever#tab=tab_1)
5. World Health Organization. Dengue guidelines, for diagnosis, treatment, prevention and control [Internet]. Geneva: WHO; 2009 [cited 2025 Apr 15]. 1–157 p (https://iris.who.int/handle/10665/44188)
6. WHO Japanese Encephalitis –Transmission Dynamics and Prevention & Control Strategy and outbreak investigation 16 August 2020 https://cdn.who.int/media/docs/default-source/wrindia/japanese-encephalitis/japanese-encephalitis-transmission-control-investigation-prsented-by-dr-roop-webinar-ahcf-2020.pdf?sfvrsn=bb590015_2&download=true

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	The content of the presentation, report, tables do not fully	The content of the presentation, report, tables correspond to the

		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 description of the clinical case	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. Situational tasks do not fully contain a description of a clinical case	given topic, the sequence of presentation of theoretical questions (etiology, pathogenesis, epidemiology, clinic, differential diagnosis, laboratory diagnostics, treatment and prevention) is completely preserved. 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 1-5 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 1-5 points.

Guidelines for the lessons of the discipline
UNIT №1 (Transmissible infections)
Content of Unit № 1
Class 1
Key questions covered in Lecture №1: Malaria (2 hrs)
- Classification by *Plasmodium* species;
- Transmission and epidemiology;
- Pathogenesis (life cycle);
- Clinical manifestations of uncomplicated and severe (complicated) malaria;

- Complications;
- Laboratory and differential diagnosis;
- Treatment of uncomplicated and severe malaria in adults, children, and pregnant patients.
- Prevention: specific (vaccination; chemoprophylaxis) and non-specific (vector control, personal protection; environmental management; blood safety and surveillance).

Class 2

Key questions covered in Practice class №1-2: Malaria (4hrs)

- Describe the laboratory methods used to detect Plasmodium spp.
- Classification by *Plasmodium* species;
- Transmission and epidemiology;
- Pathogenesis (life cycle);
- Clinical manifestations of uncomplicated and severe (complicated) malaria;
- Complications;
- Laboratory and differential diagnosis;
- Treatment of uncomplicated and severe malaria in adults, children, and pregnant patients.
- Prevention: specific (vaccination; chemoprophylaxis) and non-specific (vector control, personal protection; environmental management; blood safety and surveillance).

Recommended reading for the class:
[1] pp. 1203–1212
[2] pp. 252–255
[3] pp. 252

Class 3

Key questions covered in Practice class №3: Leishmaniasis (2 hrs)

- Classification by *Leishmania* species (Old and New World species),
- Transmission and epidemiology;
- Pathogenesis;
- Clinical manifestations (CL, MCL, VL, PKDL);
- Complications;
- Laboratory and differential diagnosis;
- Treatment (per WHO/national guidance, tailored to species and resistance patterns);
- Prevention.

Recommended reading for the class:
[1] pp. 1213–1217
[2] pp. 253–256
[3] pp. 123

Class 4

Key questions covered in Lecture №2: Chikungunya fever (2 hrs)

- Transmission and epidemiology;
- Pathogenesis;
- Clinical manifestations of Chikungunya fever;
- Complications;
- Laboratory and differential diagnosis;
- Treatment;
- Prevention: vector control, personal protection; environmental management.

Class 5

Key questions covered in Practice class №4: Chikungunya fever (2 hrs)

- Transmission and epidemiology;
- Pathogenesis;
- Clinical manifestations of Chikungunya fever;
- Complications;
- Laboratory and differential diagnosis;
- Treatment
- Prevention: vector control, personal protection; environmental management

Recommended reading for the class:
[1] pp. 1161–1168
[2] pp. 252–254; 257; 403
[3] pp. 109; 113; 152

Class 6

Key questions covered in Lecture №3: Hemorrhagic fevers (2 hrs)

- Etiology, classification of Viral Hemorrhagic fever diseases by group
- Epidemiology, pathogenesis of diseases.
- Laboratory diagnostics.
- Treatment.
- Etiopathogenesis, clinical features, complications and management of Dengue fever, Yellow Fever, Ebola virus, KFD
- Prevention

Class 7

Key questions covered in Practice class №5-6: Hemorrhagic fevers, Japanese encephalitis (3+1 hrs)

- Classification of viral hemorrhagic fever diseases,
- Transmission and epidemiology;
- Etiopathogenesis;
- Clinical manifestations (Dengue fever, Yellow fever, Ebola virus, KFD); Japanese encephalitis;
- Complications;
- Laboratory and differential diagnosis;
- Treatment (per WHO/national guidance);
- Prevention: specific (vaccination) and non-specific (vector control, personal protection; environmental management; blood safety and surveillance).

Recommended reading for the class:
[1] pp. 1161–1168
[2] pp. 252–254; 257; 403
[3] pp. 109; 113; 152

Class 8.

Key questions covered in Practice class №7 Module № 1 (2 hrs)

- Solving MSQ (40)
- Solving clinical cases (10)
- Vivo session
- The laboratory methods used to detect causative agents of infectious diseases.
- The epidemiological basis of infectious diseases and their application.
- The immune response in different types of infections (bacterial, mycobacterial, viral, fungal and parasitic infections)
- The morphology, life cycle, pathogenesis, laboratory diagnosis, prevention and control of the common parasites causing anemia.
- The morphology, life cycle, pathogenesis, clinical presentation, laboratory diagnosis and prevention of hemoparasites commonly prevalent in India (e.g. causing kala-azar, malaria)
- The etiopathogenesis, clinical features, complications and management of Malaria
- Differential diagnostic of agents of malignant malaria from agents of benign malaria reported in peripheral blood smear examination/ serology and explain its clinical significance.
- The most suitable microbiological investigation in a given clinical situation and Interpret the results of the laboratory tests for the diagnosis of the infectious disease
- Drugs for malaria based on the species identified, prevalence of drug resistance and national programs.
- The common causes of fever and etiopathogenesis, clinical features, complications and management of children with Common Parasitic infections, malaria, leishmaniasis, amebiasis.
- The principles and applications of laboratory tests used in diagnostic microbiology based on the host's immune response.
- The common causes of fever and etiopathogenesis, clinical features, complications and management of child with Dengue, Chikungunya and other vector born diseases.
- The immunological basis of disease prevention through active and passive immune prophylaxis.
- The importance of herd immunity in prevention and control of infectious disease in community.
- The pathogenesis, clinical course and laboratory diagnosis of Japanese encephalitis.

Unit №2 (Bacterial and parasitic infections)

Content of unit 2

Class 10

Key questions covered in Practice class №8: Amoebiasis (2 hrs)

- Transmission and epidemiology;
- Etiopathogenesis;
- Clinical classification; clinical manifestations of intestinal and extra-intestinal Amoebiasis ;
- Complications;
- Laboratory (identification of the common etiologic agents by stool microscopic examination) and differential diagnosis;

- Treatment (per WHO/national guidance);
- Prevention.

Recommended reading for the class:
[1] pp. 1199–1202
[2] pp. 79; 80–81; 94–95; 255; 379–380
[3] pp. 123

Class 11
Key questions covered in Practice class №9: Cholera (2 hrs)
- Transmission and epidemiology;
- Pathogenesis;
- Clinical manifestations;
- Complications; 3 degrees of dehydration (clinical features and management);
- Laboratory diagnosis (identification of vibrio cholera in a hanging drop specimen); discussion of the principles and applications of laboratory tests used in diagnostic microbiology based on the host's immune response in cholera;
- Differential diagnosis between diarrhea, dysentery and food poisoning;
- Treatment; calculating the volume of fluid for treating dehydration (per WHO/national guidance);
- Prevention.

Recommended reading for the class:
[1] pp. 980–986
[2] pp. 62; 346
[3] pp. 335

Class 12
Key questions covered in Lecture №4: Leprosy (2 hrs)
- Classification, epidemiology, etiology, microbiology;
- Pathogenesis;
- Clinical presentations and diagnostic features of Leprosy, including an appropriate neurologic examination;
- Indications and performance of a slit skin smear in patients with leprosy;
- Treatment of Leprosy based on the WHO guidelines;
- Complications of leprosy and its management, including understanding disability and stigma.

Class 13
Key questions covered in Practice class №10-11: Leprosy (4 hrs)
- Transmission and epidemiology of leprosy;
- Pathogenesis;
- Classification by WHO (Paucibacillary, Multibacillary Leprosy);
- Clinical features of leprosy including an appropriate neurologic examination;
- Complications;
- Laboratory diagnosis (indications to the performance of a slit skin smear in patients with leprosy);
- Differential diagnosis;
- Treatment (per WHO/national guidance), indications, pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines.
- Prevention.

Recommended reading for the class:
[1] pp. 1189; 1218–1220
[2] pp. 253–255
[3] pp. 325

Class 14
Key questions covered in Practice class №12 Module № 2 (2 hrs).
- Solving MSQ (40)
- Solving clinical cases (10)
- Vivo session
- Differential diagnostic between diarrhea, dysentery and food poisoning. Enumerate the microbial agents causing them.
- The principles and applications of laboratory tests used in diagnostic microbiology based on the host's immune response.
- Identification of the common etiologic agents of diarrhea and dysentery by stool microscopic examination.
- The most suitable microbiological investigation in a given clinical situation and interpretation of the results of the laboratory tests for the diagnosis of the infectious disease.
- Common parasitic causes of diarrhea under the microscope in a stool specimen
- The etiopathogenesis, clinical features, complications and management of Amebiasis

- The common causes of fever and discussion of the etiopathogenesis, clinical features, complications and management of children with Common Parasitic infections, malaria, leishmaniasis and amoebiasis.
- Identification of vibrio cholera in a hanging drop specimen
- Discussion of the types, adverse effects of drugs used for Leprosy and outline management of Lepra reactions
-The principles and applications of laboratory tests used in diagnostic microbiology based on the host's immune response.
-The immunological basis of disease prevention through active and passive immune prophylaxis. The importance of herd immunity in prevention and control of infectious disease in community.

Methodological instructions for the implementation of independent work on the discipline
For each topic, students, working independently, should be able:
- The signs and symptoms of Tropical infectious diseases;
- Clinical and epidemiological indications for admitted to the hospital;
- Basic laboratory tests used in the diagnosis of Tropical infectious diseases;
- Complications and outcomes of Tropical infectious diseases;
- Treatment and prevention of Tropical infectious diseases;
- Diagnosing of emergency conditions, diagnosis and treatment.