Federal State Autonomous Educational Institution of Higher Education
«Peoples' Friendship University of Russia»

Medical Institute

Recommended MCSD

SYLLABUS
(STUDY GUIDE)

Subject

Phthisiology

Recommended for the direction of training (specialty)

31.05.01 General Medicine

Program (profile, specialization)

General Medicine

1. Aims and objectives of the course

The aim of teaching the "Phthisiology" course is considered to be the mastering of modern basic theoretical and practical knowledge in the field of phthisiology (science about tuberculosis) at medical students.

Each graduate of medical faculty is expected to know the diagnostics principles of tuberculosis and methods of its treatment. Irrespective of the chosen medical specialty, he/she is obliged to timely suspect tuberculosis in the patient, to carry out correct diagnostics and to send the patient to the antituberculosis specialized institution.

To achieve the aims following tasks are put:

1. To discuss the included topics during the practical lessons with clinical examinations of patients, clinical round-tables and training of practical skills.

2. To control theoretical knowledge on the questions included into the programme: clinical forms of tuberculosis, diagnosis of tuberculosis and differential diagnosis of lung diseases, principles of treatment of emergent situations in tuberculosis patients.

3. To build up skills of communication with a patient taking into account ethical and deontological peculiarities of tuberculosis process.

2. Phthisiology discipline in the accordance with the Educational Program (EP) for Higher Education (HE).

This discipline belongs to the basic part of the I division of the curriculum.

Table 1 shows the previous and subsequent disciplines aimed at forming the competencies of the discipline in accordance with the competency matrix of the EP for HE.

Table № 1

Prior and subsequent disciplines aimed at building competences

Number	Code and name of competence	Previous discipline	Subsequent discipline (group of disciplines)
Universal competences			
1	UC-1. (UC-1.1., UC-1.2.)	Biology, Immunology, Pathophysiology, Hygiene	Internal medicine, Clinical pharmacology, Public health
Professional competence			
1	PC-5. (PC-5.2., PC-5.6., PC-5.7., PC-5.8., PC-5.9., PC-5.11.)	Histology, embryology, cytology, Microbiology, Virology, Pathological anatomy, clinical pathological anatomy	Hospital therapy

Requirements for the existing knowledge, skills and competences of a student, necessary study the discipline: student should have knowledge, skills and competences acquired during the courses of biology, immunology, pathophysiology, hygiene, histology, embryology, cytology, microbiology, virology, pathological anatomy, clinical pathological anatomy.

3. **Requirements for results of development of the discipline (competences generated as a result of the mastering of the discipline):**

Table № 2

Acquired competences

Competences	Name of the competence	Indicators of acquired competences
UC-1	Being able to implement critical analysis of problem situations based on systems approach, develop an action strategy	UC-1.1. Analysing scientific and technical literature and regulatory documents of medical institutions. UC-1.2. Assessing in a critical way the reliability of information sources, working with contradictory information from different sources.
PC-5	Being able to carry out preventive measures and measures to promote a healthy lifestyle and sanitary and hygiene education among population and monitor their effectiveness	PC-5.2. Being able to organize and monitor the immunization of the adult population against infectious diseases in accordance with the current procedures for the provision of medical care, clinical guidelines (treatment protocols) on the provision of medical care taking into account the standards of medical care. PC-5.6. Being able to monitor observing preventive measures. PC-5.7. Being able to determine medical indications to introduce restrictive measures (quarantine) and indications for referral to a medical specialist in the event of infectious (parasitic) diseases. PC-5.8. Being able to issue and send an emergency notification to the territorial body of the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing when an infectious or occupational disease is detected. PC-5.9. Being able to carry out anti-epidemic measures in the event of the occurrence of a focus of infection, including quarantine measures when especially dangerous (quarantine) infectious diseases are detected. PC-5.11. Being able to assess the effectiveness of preventive patient care.

After the acquisition of the discipline "Phthisiology " the student has to know:

- Epidemiological situation in tuberculosis in Russia and globally
- the role of social, economic, ecological and medicobiological factors in distribution of tuberculosis infection;
- pathomorphological, immunological, biochemical signs in MBT-infected people and those sick of tuberculosis;
- clinical symptoms, physical manifestations, microbiological, radiological, immunological signs, typical of tuberculosis;
- methods of microscopic MBT identification in the allocated substances or tissues, molecular and genetic methods of MBT detection, ways of cultivation of MBT cultures, identification of drug sensitivity of the infectious agent;

- the characteristics of antitubercular drugs and the indications to their prescription;
- standard treatment regimens of TB caused by MBT susceptible to the first-line antituberculosis drugs;
- conditions of MBT resistance development to antitubercular drugs and the principles of resistant tuberculosis treatment;
- methods of specific and sanitary prevention of tuberculosis;
- organizational forms of TB infected patients' treatment
- indications and contraindications for antituberculosis vaccination, revaccination with tubercular vaccine (BCG);
- indications to chemoprophylaxis (preventive treatment) of tuberculosis
- nonspecific violations in separate indicators at lung tuberculosis.

Has to be able:

- to make up the plan of examination of the patient in order to diagnose or exclude tuberculosis;
- to conduct a survey, to perform a physical examination of the patient, to formulate the conclusion about the patient's state of health;
- to assess the results of bacterioscopy and bacteriological research for MBT identification, drug resistance of the infectious agent;
- to find out, estimate and describe the pathological changes diagnosed by radiological methods of research with TB patients;
- to define indications and to estimate the result of skin allergic Mantoux test and Diaskintest , IFN-γ-tests (IGRA tests);
- to define indications to antibacterial therapy, its tolerance and signs of side effects of antitubercular drugs;
- to diagnose medical emergencies for patients with tuberculosis and to administer the first medical aid;
- to handle the general deontological issues connected with the examination and treatment of the tuberculosis patient.

Has to have a notion of:

- methods of laboratory diagnostics of Mycobacterium tuberculosis drug resistance to antitubercular drugs;
- pharmacological features of the main antitubercular drugs
- measures of infectious safety at tuberculosis;
- concomitant defeat - HIV infection and tuberculosis;
- an epidemiological situation with tuberculosis incidence in Russia;
- the main legislative acts on tuberculosis in the Russian Federation, the Federal program on fight against tuberculosis in Russia;
- economic losses due to incidence and tuberculosis mortality;
- role of WHO and the International non-governmental organizations in fight against tuberculosis;
- epidemiological situation with tuberculosis incidence in the world.

4. Time capacity of the course and types of study

General labor input of the course equals 4 test units.

Type of work	Total hours	Semester	
		11	12
In-class learning, including (total), hrs:	96	36	60

Includes:	-	-	-
Lectures, hrs	12	6	6
Practical training, hrs	84	30	54
Colloquiums, hrs			
Laboratory works, hrs			
Self-dependent work, (total), hrs:	84	34	50
General labor input hours	144	72	72
credit units	4	2	2

5. Content of the discipline

5.1 Content of the discipline sections

№	Section of the discipline	Contents of the section
1	History of tuberculosis studies.	History of tuberculosis studies. Stages of organizational anti-tuberculosis events. International organizations' anti-tuberculosis activities. Current state of the tubercular epidemics worldwide and in the Russian Federation
2	Etiology and pathogenesis of tuberculosis	Characteristic of MBT. Ways and means of tuberculosis infection. Etiology and immunity. Pathological anatomy of tuberculosis
3	General methods of patient examination	Objective examination of the patient with tuberculosis. Laboratory methods of identification of MBT in pathological material. Methods of determination of MBT resistance to antitubercular drugs. Tuberculin Testing. Performance of Mantoux Test, interpretation of the results. Radiological methods of diagnostics. Bronchological examination of patients with tuberculosis Laboratory research of blood test, urine, pleural and cerebrospinal fluids.
4	Classification of tuberculosis	Principles of clinical classification of tuberculosis and international classification of diseases and causes of death
5	Treatment of tuberculosis	The drugs used in tuberculosis treatment. Standard tb treatment regimens. Elimination of side reactions at chemotherapy. MDR-tuberculosis treatment. Collapsotherapy and surgical methods of treatment. Treatment tactics of patients with tb complications. Treatment of lung hemorrhages and spontaneous pheumothorax
6	Tuberculosis and the concomitant diseases/states	Tuberculosis, HIV and AIDS. Lung tuberculosis and diabetes mellitus. Tuberculosis and chronic nonspesific lung diseases. Tuberculosis and alcoholism. Tuberculosis and cardiovascular diseases. Tuberculosis and lung cancer. Tuberculosis and liver diseases. Tuberculosis and stomach and duodenum ulcer. Tuberculosis and pregnancy. Neuropsychic disorders at tuberculosis
7	Organization of fight with tuberculosis	Logistics of health care delivery to tuberculosis patients in the Russian Federation. Regulations of health care delivery to tuberculosis patients in the medical organizations.

		Antitubercular dispensary. Specific prevention of tuberculosis. Vaccination. Chemoprophylaxis. Social and sanitary prevention of tuberculosis

5.2. Discipline sections and types of work

№	Discipline section	Lectures.	Pract. training	Lab. works	Colloquims	Self-dependent work	Total hours
1.	History of tuberculosis studies. Etiology and pathogenesis of tuberculosis.	4	4				8
2.	Prevention of tuberculosis.	2	8			10	20
3.	Early detection of tuberculosis.		8			12	20
4.	General methods of patient examination. Diagnostics	2	10			12	24
5.	Tuberculosis healthcare		16			14	30
6.	Classification of tuberculosis. Primary tuberculosis in children and adolescants. Post-primary tuberculosis in adults.		18			16	34
7.	Extrapulmonary tuberculosis.		10			8	18
8.	Tuberculosis and the concomitant diseases/states	2	8			8	18
9.	Writing and discussing of clinical history		2			4	6

6. Laboratory work – is not planned

7. Practical clinical studies

№	Section of the discipline	Topic of clinical learning	hours
1.	History of tuberculosis studies. Etiology and pathogenesis of tuberculosis.	Etiology and pathogenesis of tuberculosis. Visit of bacteriological lab. Visit of room for sputum collection.	2
		Epidemiology of tuberculosis in Russian Federation and in the world	1
		Pathomorphology of tuberculosis	1
		Clinical cases	1
2.	Prevention of tuberculosis.	Social prevention of tuberculosis.	0,5
		Vaccination against tuberculosis, anti-tuberculous immunity.	2
		Prevention in sources of tuberculosis.	2
		Latent tuberculosis infection treatment.	2

		Anti-tuberculosis infection control	2
		Discussion of clinical cases.	1
		Test control.	0,5
3.	Early detection of tuberculosis.	Measures for early detection of tuberculosis in adults.	3
		Investigation of contacts and risk groups.	1
		Measures for early detection of tuberculosis in children and adolescents.	3
		Discussion of clinical cases.	1
		Test control.	0,5
4.	General methods of patient examination. Diagnostics	Clinical manifestation of tuberculosis.	2
		Microbiological diagnostics of tuberculosis.	4
		Radiological diagnostics of tuberculosis.	4
		Laboratory and instrumental ways of TB diagnostics.	2
		Diagnostic algorithm for a patient with suspected tuberculosis.	2
		Immunological diagnostics of tuberculosis (TST, IGRA-tests).	4
		Discussion of clinical cases.	1
		Test control.	0,5
5.	Tuberculosis healthcare	Out-patient departments for tuberculosis diagnostics and treatment.	2
		Frequency and ways of assessment in out- and in-patient departments.	2
		Contact investigations	1
		Treatment of tuberculosis: drugs, classification according to WHO.	4
		Clinical cases discussion.	2
		Test control.	0,5
6.	Classification of tuberculosis.	Classification of tuberculosis (Russian, world, ICD-10).	2
		Primary tuberculosis in children.	3
		Clinical and radiological manifestations of postprimary acute tuberculosis.	12
		Clinical and radiological manifestations of postprimary chronic tuberculosis.	6
		Examination of a patient.	2
		Discussing of clinical histories.	1
		Clinical cases discussion.	1
		Test control.	0,5
7.	Extrapulmonary tuberculosis.	Pathogenesis of extrapulmonary tuberculosis	2
		Tuberculosis meningoencephalitis.	2
		Tuberculosis of genitourinary tract.	2
		Tuberculosis of bones.	2
		Abdominal tuberculosis.	2
		Tuberculosis of peripheral lymph nodes.	2
		Examination of a patient.	2
		Discussing of clinical histories.	1
		Clinical cases discussion.	1
		Test control.	0,5
8.		Clinical and radiological peculiarities of tuberculosis in HIV-patients with different CD4 counts	4

	Tuberculosis and the concomitant diseases/states	Pecularities of tuberculosis diagnosis in HIV-patients	3
		Tuberculosis in pregnant women: peculiarities of clinical manifestation, diagnosis and treatment.	2
		Tuberculosis in patients on immunosuppressive treatment.	2
		Tuberculosis in patients with diabetes mellitus	1
		Clinical cases discussion.	2
		Test control.	0,5
		Final test control	2
		In 12th semester students should write a clinical history of a tuberculosis patient	6

8. Material and technical support of the discipline:

Clinical bases:

1. National Medical Research Scientific Institute of Phthisiopulmonology and Infectious diseases – 250 beds
2. Branch of the Moscow Scientific Practical Centre to fight TB – antiTB dispensary, out-patient clinic.

Use of rooms, labs, computers, multimedia, laboratory and instrumental equipement. Collction of slides, tables, multimedia materials in different parts of the discipline. Videofilms. Clinical cases, tests in included topics. Boards.

9. Information support of the discipline

a) Digital solutions. To perform lectures and practical lessons the department of infectious diseases with the courses of epidemiology and phthisiology is supported by software Microsoft office

b) Databases, information and reference systems and search systems.

Telecommunication educational informational system - https://esystem.rudn.ru/

Information Library Center - http://lib.rudn.ru/

Library of online journals (http://www.elsevier.com/about/open-access/open-archives).

10. Educational and methodological support

Basic study materials for Phthisiology course

1. Treatment of tuberculosis: guidelines – 4th ed. WHO/HTM/TB/2009, 420 p.
2. Koshechkin V.A. Phthisiatry: Text book in Russian and in English — M.: GEOTAR-Media, 2016, 256 p.
3. Tuberculosis: Current Issues in Diagnosis and Management http://www.e-booksdirectory.com/details.php?ebook=8772
4. Madhukar Pai. Let's talk TB – 3d edition. 2018, 119p. http://www.letstalktb.org/
5. Toman's tuberculosis: case detection, treatment and monitoring: questions and answers (2nd edition). 2004. http://www.who.int/tb/publications/toman/en/

Additional study materials for Phthisiology course

1. WHO guidelines (and associated standards) on tuberculosis http://www.who.int/publications/guidelines/tuberculosis/en/
2. D.Heemskerk, M.Caws, B.Marais, J.Farrar. Tuberculosis in adults and children. SpringerOpen. 2015, 63p. https://link.springer.com/book/10.1007/978-3-319-19132-4

3. Stop TB, site WHO http://www.stoptb.org/resources/publications/

4. Tuberculosis site of CDC Atlanta www.cdc.gov/nchstp/tb/

5. The site of the international Union Against Tuberculosis and Lung Disease www.iuatld.org

6. C.L. Daley, M.B. Gotway, R.M.Jasmer. Radiographic manifestation of tuberculosis – 2nd edition. Curry International Tuberculosis Centre. 2011, 111p.

7. Ermolitskiy N.M. Radiology. Teaching workbook for 3rd year students of the Faculty of preparation of experts for foreign countries of medical higher educational institutions – Gomel, GomSMU, 2016. p. 1. 108 p.

8. Harrison's infectious diseases 2nd edition pdf

11. Methodological issues for students

In accordance with the requirements of Federal standards for higher education, the teaching of the discipline "Phthisiology" provides a competence approach in the educational process, which is based on innovative psychological and pedagogical technologies aimed at improving the effectiveness and quality of the formation of the professional skills of students. The main forms of training are: lectures, practical clinical studies (conducted in the classrooms and in the wards of patients with infectious diseases), as well as self-study of the student.

The list of topics for classroom activities determines the clinical, socio-economic and epidemiological significance of tuberculosis, which detection and prevention is included into competencies of any physician in health care centres and institutions.

Active and interactive forms of training were used in the developed program: discussions, analysis of clinical situations.

For successful completion of the discipline each student is provided with educational materials (thematic plans of lectures and practical clinical studies, educational-methodical literature, test , situational tasks).

Different types of academic work, including self-study of the student, contribute to improving perception, self-improvement, self-realization, personal and subject reflection.

Subjects of lectures and practical clinical studies correspond to the content of the discipline program.

Lectures are read on the most important sections of the program. They are problematic in nature and form a systematic understanding of the topic, ensure their understanding of the basic principles and provisions of the discipline "Phthisiology", as well as their readiness to perceive scientific and technological innovations and technologies.

Practical clinical classes provide acquisition and consolidation of necessary skills, form professional competencies, readiness for independent and individual work, making responsible decisions in the framework of professional activities in health care centres and institutions

On the practical part of the lesson, the teacher pays attention to the student's ability to logical thinking and self-independence, using in his pedagogical activity an innovative personality-oriented approach to teaching.

The list of practical clinical topics is determined by the clinical, socio-economic and epidemiological significance of tuberculosis, as well as the need for students to master the skills of managing patients with tuberculosis.

Priority in the conduct of practical clinical sessions is an overview (system) principle, reflecting the general approaches to conducting a complex of diagnostic, therapeutic and preventive measures in the management of patients with tuberculosis.

Practical clinical studies are conducted with the aim of mastering the main theoretical, methodological and organizational sections of the program by the students, as well as developing and consolidating the practical skills in managing patients with tuberculosis in health care centres, as well as in emergency situations.

When conducting practical clinical classes on tuberculosis with students, it is mandatory to identify the initial (basic) level of knowledge with subsequent correction. The result of the lesson is self-understanding of the topics with the help of thematic test tasks. Self-study topics are monitored in a practical lesson using test control.

Individual subjects of sections of discipline students study independently. The content of independent work: reading the basic and recommended additional literature, solving case study, which contributes to the development of cognitive activity, creative thinking of students, installs skills of independent search for information, and also forms the ability and readiness for self-improvement, self-realization and creative adaptation. Self-study with basic and additional literature forms the ability to analyze medical and social problems, the ability to use natural science, biomedical and clinical sciences in various kinds of professional and social activities.

Self-study of students is conducted in off-hour hours and is about 1/2 of the total complexity of the discipline.

Assessment of theoretical and practical knowledge of students is carried out using test control, solving situational problems. At the end of the 11th semester, a test is conducted, this includes written and oral. At the end of the 12th semester a final certification is conducted in the form of an oral examination.

12. Fund of the assessing materials to perform intermediary attestation of students in the discipline (module)

Materials for assessment of the level of knowledge in the discipline “Phthisiology” (assessment materials), including the list of competences with the steps of their acquirement, description of markers and assessment criteria of competences in different steps of their acquirement, description of assessment scales, typical control tasks or other materials necessary to assess knowledge, skills and (or) experience, marking steps of the competences formation in the process of educational programme completion, methodological materials describing procedures for knowledge, skills and (or) experience assessment marking steps of the competences formation in the process of educational programme completion are built up to the fullest extent and available for students in the official page of the discipline in TEIS RUDN - https://esystem.rudn.ru/course/view.php?id=9475

The program is compiled in accordance with the requirements of the FSES HE.

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