

Ministry of Science and Higher Education of the Russian Federation
Federal State Autonomous Institution of Higher Education
“National Research Nuclear University “MEPhI”

INSTITUTE OF ENGINEERING PHYSICS FOR BIOMEDICINE

DEPARTMENT OF FUNDAMENTAL MEDICINE

APPROVED HTC ИФИБ

Protocol No. 3.1

dated 30.08.2024

ACADEMIC COURSE OUTLINE

-

Educational program track (speciality) [1] 31.05.01 General Medicine

Semester	Labour input, credits	Total course academic, hours	Lectures, hrs.	Practical sessions, hrs.	Laboratory sessions, hrs.	In the form of practical studies, hrs.	Independent studies, hrs.	Independent studies monitoring, hrs.	Course progress, Exam/Pass-fail exam/Term
12	3	108	20	40	0		48	0	PFE
Total	3	108	20	40	0	0	48	0	

ABSTRACT

1. ACADEMIC COURSE GOALS AND OBJECTIVES

2. PLACE OF THE ACADEMIC COURSE IN THE MAIN HIGHER EDUCATION CURRICULUM

3. DEVELOPED COMPETENCIES AND INTENDED LEARNING OUTCOMES

Universal and/or general professional competencies:

Competency code and title	Code and title of competency-based rubrics
OPIK-2 [1] – Capable of conducting and monitoring the effectiveness of measures for prevention, healthy lifestyle promotion, and sanitary-hygienic education of the population	3-OPIK-2 [1] – Know: - regulatory foundations for conducting preventive medical examinations and health check-ups; - rules for implementing sanitary and anti-epidemic measures; - forms and methods of health education work; - sanitary rules and regulations; - national immunization schedule; - main hazardous and harmful occupational factors. Y-OPIK-2 [1] – Be able to: - determine medical indications for imposing restrictive measures (quarantine) and conduct anti-epidemic measures in case of an infection outbreak; - conduct preventive medical examinations and health check-ups in accordance with current regulatory legal acts and other documents; - monitor the effectiveness of measures for disease prevention, health promotion, and sanitary-hygienic education of the population; - develop and implement health promotion programs aimed at eliminating harmful effects of environmental factors on human health; - establish cause-effect relationships between changes in health status and exposure to environmental factors. B-OPIK-2 [1] – Possess skills in: - organizing and conducting preventive medical examinations and health check-ups for the adult population to prevent the occurrence and/or spread of diseases and identify risk factors; - preparation (formation) and sending to the territorial office of the Federal Service for Surveillance on Consumer Rights Protection and Human Wellbeing an emergency notification upon detection of an infectious or occupational disease; -educating patients and their relatives on methods of self-monitoring key physiological indicators.

Professional competencies in compliance with the goals and professional knowledge areas:

Professional activity goal	Professional activity knowledge area	Professional competency code and title; Based on the professional standard, experience analysis	Code and title of competency-based rubrics
organizational and managerial			
Collection of medical data, medical and statistical analysis of information on the population health indicators for various age and sex groups.	Individuals (patients); the population; the set of means and technologies aimed at creating conditions for preserving and strengthening the health of the adult population	PIK-3.4 [1] - Able to analyze population health indicators <i>The base:</i> Professional standard: 02.022	3-PIK-3.4[1] - Know: - factors shaping human health; - main medical-statistical indicators characterizing population health, methods for their calculation; - methodologies for collecting medical-statistical information.; Y-PIK-3.4[1] - Be able to: - analyze statistical indicators of morbidity with temporary disability, disability, mortality.; B-PIK-3.4[1] - Possess skills in: - analyzing official statistical reporting, including federal and industry statistical observation forms.

4. PEDAGOGIC POTENTIAL OF THE COURSE

Pedagogic tracks/objectives	Pedagogic goals (code)
Intellectual education	Establishing conditions for: formation of culture of intellectual work (B11)
Professional education	Establishing conditions for: formation of motivation to improve the quality of medical care to the population and the desire to follow the rules and norms of interaction between the doctor, colleagues and the patient, contributing to the creation of the most favorable environment for the patient's recovery (B34)

5. ACADEMIC COURSE STRUCTURE AND CONTENT

Academic course sections, their scope, terms of study and assessment:

No.	Academic course section name	Weeks	Lectures/ Practical (seminars)/ Laboratory sessions, hrs.	Compulsory current assessment (form*, week)	Maximum grade per section**	Section assessment (form*, week)	Competency-based rubrics
	<i>12 Semester</i>						
1	Unit	1-8	10/20/0	T-8 (25)	25	T-8	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
2	Unit	9-15	10/20/0	T-14 (25)	25	T-14	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4
	<i>Totals for 12 Semester</i>		20/40/0		50		
	Assessment events for 12 Semester				50	PFE	3-ОПК-2, У-ОПК-2, В-ОПК-2, 3-ПК-3.4, У-ПК-3.4, В-ПК-3.4

* – abbreviated name of assessment

** – 100 maximum points per semester including a pass/fail exam and (or) an exam

Abbreviated current assessment forms and section assessment

Abbreviation	Full name
T	Testing
PFE	Pass/fail examination

SYLLABUS

Weeks	Topics / Content	Lect., hrs.	Pr./sem., hrs.	Lab., hrs.
	<i>12 Semester</i>	20	40	0
1-8	Unit	10	20	0
1 - 2	Введение в современную эпидемиологию	All		
		2	5	0
		Online		
		0	0	0
3 - 4	Санитарная охрана территории от завоза инфекционных болезней	All		
		2	5	0
		Online		

		0	0	0
5	Меры борьбы и профилактики с инфекционными болезнями	All		
		2	3	0
		Online		
		0	0	0
6	Иммунопрофилактика	All		
		2	3	0
		Online		
		0	0	0
7 - 8	Эпидемиология инфекций, связанных с оказанием медицинской помощи (ИСМП)	All		
		2	4	0
		Online		
		0	0	0
9-15	Unit	10	20	0
9 - 10	Эпидемиология и профилактика зоонозов, сапронозов, воздушно-капельных инфекций	All		
		6	10	0
		Online		
		0	0	0
11 - 12	Эпидемиология и профилактика бактериальных и вирусных кишечных инфекций	All		
		0	0	0
		Online		
		0	0	0
13	Эпидемиология, профилактика, диагностика гельминтозов	All		
		0	0	0
		Online		
		0	0	0
14 - 15	Эпидемиология и профилактика инфекций, передающихся преимущественно половым путем и с кровью	All		
		4	10	0
		Online		
		0	0	0

Abbreviated names of online options:

Abbreviation	Full name
EC	E-course
FtM	Full-text material
FtL	Full-text lectures
VM	Video materials
AM	Audio materials
Prs	Presentations
T	Tests
ERM	E-reference materials
IS	Interactive site

PRACTICAL SESSIONS TOPICS

Weeks	Topics / Content
	12 Semester
1 - 4	Эпидемиологический подход к изучению инфекционных и неинфекционных болезней. Международные медико-санитарные правила
5 - 8	Меры борьбы и профилактики с инфекционными болезнями. Иммунопрофилактика.

	Разделы дезинфектологии (дезинфекция, стерилизация
9 - 11	Эпидемиология и профилактика зоонозов, сапронозов, воздушно-капельных инфекций, бактериальных и вирусных кишечных инфекций. Эпидемиология, профилактика, диагностика гельминтозов.
12 - 15	Эпидемиология и профилактика инфекций с трансмиссивным механизмом передачи. Эпидемиология и профилактика инфекции наружных покровов

6. EDUCATIONAL TECHNOLOGIES

7. ASSESSMENT TOOLKIT

The assessment toolkit ensures verification of the intended learning outcomes achievement (competency-based rubrics) using current, midterm and interim assessment of the course.

The link between developed competencies and their assessment is presented in the following table:

Competency	Achievement rubrics	Assessment activity (Syl 1)
ОПК-2	3-ОПК-2	PFE, T-8, T-14, T-8, T-14
	У-ОПК-2	PFE, T-8, T-14, T-8, T-14
	В-ОПК-2	PFE, T-8, T-14, T-8, T-14
ПК-3.4	3-ПК-3.4	PFE, T-8, T-14
	У-ПК-3.4	PFE, T-8, T-14
	В-ПК-3.4	PFE, T-8, T-14

Educational achievement rubrics scales

The scale of each assessment activity varies from 0 to the maximum established point, inclusive. The final assessment of the course is performed on a 100-point scale and represents the sum of the points earned by the student in the section assessments, framework of current and interim assessment.

Sections and interim assessments are considered passed when the student achieves a minimum score equal to 60% of the maximum. The final grade is assigned only upon passing all sections and the interim assessment.

The final grade is assigned in accordance with the following scale:

Total score	Rating on a 4-point scale	Pass/fail examination	ECTS assessment
90-100	5 – « <i>excellent</i> »	« <i>pass</i> »	A
85-89	4 – « <i>good</i> »		B
75-84			C
70-74			D
65-69			E
60-64	3 – « <i>satisfactory</i> »		F
below 60	2 – « <i>fail</i> »	« <i>fail</i> »	

An “excellent” grade indicates a deep and solid mastery of the program material by a student who presents their answers consistently, clearly, and logically, is able to closely link theory with practice, and uses materials from monographic literature in their answers.

A “good” grade corresponds to a student’s solid knowledge of the material, who presents their answers competently and to the point, without any significant inaccuracies.

A “satisfactory” grade corresponds to the basic level of mastery of the material by the student, in which the main material has been mastered, but its details have not been assimilated, the answers contain inaccuracies, insufficiently correct wording and logical inconsistencies.

A grade “pass” corresponds to at least a basic level of mastery of the program material, in which the student possesses the necessary knowledge, skills, and abilities, and is able to apply theoretical principles to solve typical practical problems.

A grade “fail” is given to a student who lacks a significant understanding of the curriculum material, makes significant errors in their answers, or fails all required assignments. These students are generally unable to continue their studies without additional classes.

8. ACADEMIC COURSE EDUCATIONAL, METHODOLOGICAL AND INFORMATIONAL SUPPORT

CORE READING:

1. ЭИ I-60 Infectious diseases: textbook : учебник, Yushchuk N.D., Vengerov Yu.Ya., Москва: ГЭОТАР-Медиа, 2020
2. ЭИ Э71 Эпидемиология : учебник, , Москва: ГЭОТАР-Медиа, 2023
3. ЭИ З-86 Эпидемиология чрезвычайных ситуаций : учебное пособие для вузов, Зорина И. Г., Санкт-Петербург: Лань, 2024

FURTHER READING:

1. ЭИ О-28 Общая эпидемиология с основами доказательной медицины: руководство к практическим занятиям : учебное пособие, , Москва: ГЭОТАР-Медиа, 2021
2. ЭИ С 50 Основы дезинфектологии : учебное пособие для вузов, Сметанин В. Н., Здольник Т. Д., Москва: Юрайт, 2024
3. ЭИ Ш 96 Экологическая эпидемиология : учебное пособие для вузов, Мукминов М. Н., Шуралев Э. А., Москва: Юрайт, 2024

SOFTWARE:

No special softwares is required

LMS AND ONLINE RESOURCES

<https://online.mephi.ru/>

9. LOGISTICAL SUPPORT

1. Интерактивная доска SMART SBM 685 (64-407)
2. Монитор Dell P2720D (64-407)
3. Мышь, клавиатура (64-407)
4. Персональный компьютер: Моноблок Lenovo V540-24IWL All-In-One 23,8" i3-8145U 8Gb 256GB_SSD_M.2 Intel (64-407)

10. EDUCATIONAL AND METHODOLOGICAL RECOMMENDATIONS FOR TEACHERS

В процессе организации и проведения учебного процесса преподавателя необходимо уметь планировать и организовывать свое время, что позволяет распределить учебную нагрузку и является важным условием успешного преподавания дисциплины.

Преподаватель должен активно непосредственно участвовать в учебном процессе и проводить подготовку к нему. Необходимость постоянной подготовки к лекциям, семинарским и практическим занятиям обусловлена потребностью отражать современные подходы, взгляды, данные по темам и разделам. Проводя подготовку к учебному процессу необходимо изучать современные методические рекомендации, результаты научных исследований, новые технологии и т.д.

Целью работы преподавателя должно быть эффективное восприятие материала слушателями. В процессе преподавания реализуются следующие виды учебных работ: лекция, семинарское и практическое занятие, самостоятельная работа. При реализации различных видов учебной работы преподаватель должен использовать образовательные технологии (создание интерактивных презентаций, обучающие компьютерные программы, технологии развития мышления (эффективная лекция, таблицы, работа в группах и т.д.)

Author(s):

Sklyar Lidiya Fedorovna / Скляр Лидия Федоровна /