

# COURSE PROGRAM

## SYLLABUS

### 1. General information on the course

<b>Full course name</b>	Clinical Aspects of Immunization
<b>Full official name of a higher education institution</b>	Sumy State University
<b>Full name of a structural unit</b>	Academic and Research Medical Institute. Кафедра педіатрії
<b>Author(s)</b>	Vasylieva Olena Hennadiivna
<b>Cycle/higher education level</b>	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
<b>Duration</b>	one semester
<b>Workload</b>	5 ECTS, 150 hours. For full-time course 36 hours are working hours with the lecturer (36 hours of seminars), 114 hours of the individual study.
<b>Language(s)</b>	English

### 2. Place in the study programme

<b>Relation to curriculum</b>	Elective course available for the students of the specialty 222 "Medicine"
<b>Prerequisites</b>	There are no specific pre-requisites
<b>Additional requirements</b>	Krok-1, Microbiology, Virology and Immunology, Life Safety; Basics of Bioethics and Biosafety, Human Anatomy, Pathomorphology and Pathophysiology, Pharmacology, Hygiene and Ecology, Pediatrics
<b>Restrictions</b>	There are no specific restrictions

### 3. Aims of the course

The aim of the discipline is to achieve modern knowledge and professional skills on the basics of immunoprophylaxis of infectious diseases, based on the study of drugs for immunization, methods and timing of vaccinations according to the vaccination calendar, vaccine storage conditions, medical records, analysis and interpretation of possible adverse events of immunization and planning measures to prevent the spread of infectious diseases in children.

### 4. Contents

<b>Module 1. Modern bases of immunoprophylaxis in Ukraine</b>
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Topic 1 The place of immunoprophylaxis in the system of preventive and anti-epidemic measures

The place of immunoprophylaxis in the system of preventive and anti-epidemic measures. Calendar of preventive vaccinations in Ukraine. Classification of drugs for active immunoprophylaxis. The composition of drugs for active immunoprophylaxis. Ways of administration of drugs for active immunoprophylaxis. Active immunoprophylaxis: basics of immune response as a result of vaccination, basics of modern production of drugs for immunoprophylaxis, introduction of vaccines in the immunization program, revision of the National Vaccination Calendar. Storage of vaccines and toxoids. "Cold chain".

Topic 2 Active immunoprophylaxis preparations

Classification of vaccines, composition of active immunoprophylaxis preparations, storage and transportation of vaccines. Organization of support for immunoprophylaxis in society: conducting situational analysis and cooperation with community leaders, public figures and religious leaders, establishing friendly, trusting relations with the population and the community, training of health workers in communication skills, use of various information channels, work with the media in case of crisis situations.

## **Module 2. Immunoprophylaxis of certain infections**

Topic 3 Immunoprophylaxis of hepatitis A and B

Immunoprophylaxis of hepatitis A and B: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 4 Immunoprophylaxis of diphtheria and whooping cough

Immunoprophylaxis of diphtheria whooping cough: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 5 Immunoprophylaxis of tuberculosis

Immunoprophylaxis of tuberculosis: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 6 Immunoprophylaxis of poliomyelitis

Immunoprophylaxis of poliomyelitis: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of vaccination.

Topic 7 Immunoprophylaxis of influenza

Immunoprophylaxis of influenza: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 8 Immunoprophylaxis of tetanus

Immunoprophylaxis of tetanus: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection. Emergency prevention of tetanus.

Topic 9 Immunoprophylaxis of rotavirus infection

Immunoprophylaxis of rotavirus infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of vaccination.

Topic 10 Immunoprophylaxis of chickenpox

Immunoprophylaxis of chickenpox: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 11 Immunoprophylaxis of measles, rubella

Immunoprophylaxis of measles, rubella: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of protection.

Topic 12 Immunoprophylaxis of mumps

Immunoprophylaxis of mumps: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 13 Immunoprophylaxis of pneumococcal infection

Immunoprophylaxis of pneumococcal infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 14 Immunoprophylaxis of hemophilic infection

Immunoprophylaxis of hemophilic infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

Topic 15 Immunoprophylaxis of meningococcal infection

Immunoprophylaxis of meningococcal infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

<p>Topic 16 Immunoprophylaxis of human papillomavirus infection</p> <p>Immunoprophylaxis of human papillomavirus infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of vaccination.</p>
<p>Topic 17 Immunoprophylaxis COVID-19</p> <p>Immunoprophylaxis COVID-19: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.</p>
<p>Topic 18 Final modular control</p> <p>Final modular control. Testing, oral survey.</p>

## 5. Intended learning outcomes of the course

After successful study of the course, the student will be able to:

LO1	To collect information about the patient's general condition; to assess the patient's psychomotor and physical development and the state of organs and systems of the body; to assess information on the diagnosis based on laboratory and instrumental findings.
LO2	To establish a final clinical diagnosis at a medical institution under control of a supervising doctor by means of informed decision and logical analysis of the obtained subjective and objective data of clinical and additional examinations, and differential diagnosis, following the relevant ethical and legal norms.
LO3	To determine the appropriate approach in emergency medical care case under any circumstances, adhering to the relevant ethical and legal norms, by making an informed decision based on the main clinical syndrome (disease severity) and emergency diagnosis using standard schemes under limited time conditions based on the principles of evidence-based medicine.
LO4	To perform medical procedures at a medical facility, at home or at work on the basis of a provisional clinical diagnosis and/or health parameters through making an informed decision and adhering to the relevant ethical and legal norms.
LO5	To plan and implement a system of sanitary and preventive measures against the occurrence and spread of diseases among the population.
LO6	To analyze epidemiological situation and carry out measures of mass and individual, general and local prevention of infectious diseases.
LO7	To organize an appropriate level of individual safety (own and of those cared for) in case of typical dangerous situations in the individual field of activity.

## 7. Soft Skills

SS1	Ability to abstract thinking, analysis, and synthesis.
SS2	Ability to learn, master modern knowledge, and apply the knowledge in practice.

SS3	Knowledge and understanding of the subject area and professional activity comprehension.
SS4	Ability to adapt and act in a new situation.
SS5	Ability to make reasoned decisions; teamwork ability; interpersonal skills.
SS6	Ability to use information and communication technologies.
SS7	Determination and persistence on the tasks and commitments undertaken.

## 8. Teaching and learning activities

<p><b>Topic 1. The place of immunoprophylaxis in the system of preventive and anti-epidemic measures</b></p>
<p>pr.tr.1 "The place of immunoprophylaxis in the system of preventive and anti-epidemic measures" (full-time course)</p> <p>The place of immunoprophylaxis in the system of preventive and anti-epidemic measures. Calendar of preventive vaccinations in Ukraine. Classification of drugs for active immunoprophylaxis. The composition of drugs for active immunoprophylaxis. Ways of administration of drugs for active immunoprophylaxis. Active immunoprophylaxis: basics of immune response as a result of vaccination, basics of modern production of drugs for immunoprophylaxis, introduction of vaccines in the immunization program, revision of the National Vaccination Calendar. Storage of vaccines and toxoids. "Cold chain".</p>
<p><b>Topic 2. Active immunoprophylaxis preparations</b></p>
<p>pr.tr.2 "Active immunoprophylaxis preparations" (full-time course)</p> <p>Classification of vaccines, composition of preparations for active immunoprophylaxis, storage and transportation of vaccines. Pharmacovigilance of vaccines: global guidelines for the supervision of AEAI, messages, priority signals for investigation, final classification. Criteria for assessing the post-vaccination period. Classification of adverse events after immunization. Organization of AEAI monitoring. System of registration, accounting and notification of AEAI. AEAI investigation system. The main legislative acts that guarantee social justice in relation to persons who have developed AEAI. Organization of support for immunoprophylaxis in society: conducting situational analysis and cooperation with community leaders, public figures and religious leaders, establishing friendly, trusting relations with the population and the community, training of health workers in communication skills, use of various information channels, work with the media in case of crisis situations.</p>
<p><b>Topic 3. Immunoprophylaxis of hepatitis A and B</b></p>
<p>pr.tr.3 "Immunoprophylaxis of hepatitis A and B" (full-time course)</p> <p>Immunoprophylaxis of hepatitis A and B: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.</p>
<p><b>Topic 4. Immunoprophylaxis of diphtheria and whooping cough</b></p>

pr.tr.4 "Immunoprophylaxis of diphtheria and pertussis" (full-time course)

Immunoprophylaxis of diphtheria and pertussis: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

#### **Topic 5. Immunoprophylaxis of tuberculosis**

pr.tr.5 "Immunoprophylaxis of tuberculosis" (full-time course)

Immunoprophylaxis of tuberculosis: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

#### **Topic 6. Immunoprophylaxis of poliomyelitis**

pr.tr.6 "Immunoprophylaxis of poliomyelitis" (full-time course)

Immunoprophylaxis of poliomyelitis: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of vaccination.

#### **Topic 7. Immunoprophylaxis of influenza**

pr.tr.7 "Immunoprophylaxis of influenza" (full-time course)

Immunoprophylaxis of influenza: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

#### **Topic 8. Immunoprophylaxis of tetanus**

pr.tr.8 "Immunoprophylaxis of tetanus" (full-time course)

Immunoprophylaxis of tetanus: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection. Emergency prevention of tetanus.

#### **Topic 9. Immunoprophylaxis of rotavirus infection**

pr.tr.9 "Immunoprophylaxis of rotavirus infection" (full-time course)

Immunoprophylaxis of rotavirus infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of vaccination.

#### **Topic 10. Immunoprophylaxis of chickenpox**

pr.tr.10 "Immunoprophylaxis of chickenpox" (full-time course)

Immunoprophylaxis of chickenpox: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

### **Topic 11. Immunoprophylaxis of measles, rubella**

pr.tr.11 "Immunoprophylaxis of measles, rubella" (full-time course)

Immunoprophylaxis of measles, rubella: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination effectiveness and duration of protection.

### **Topic 12. Immunoprophylaxis of mumps**

pr.tr.12 "Immunoprophylaxis of mumps" (full-time course)

Immunoprophylaxis of mumps: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

### **Topic 13. Immunoprophylaxis of pneumococcal infection**

pr.tr.13 "Immunoprophylaxis of pneumococcal infection" (full-time course)

Immunoprophylaxis of pneumococcal infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

### **Topic 14. Immunoprophylaxis of hemophilic infection**

pr.tr.14 "Immunoprophylaxis of hemophilic infection" (full-time course)

Immunoprophylaxis of hemophilic infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

### **Topic 15. Immunoprophylaxis of meningococcal infection**

pr.tr.15 "Immunoprophylaxis of meningococcal infection" (full-time course)

Immunoprophylaxis of meningococcal infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.

### **Topic 16. Immunoprophylaxis of human papillomavirus infection**

pr.tr.16 "Immunoprophylaxis of human papillomavirus infection" (full-time course) Immunoprophylaxis of human papillomavirus infection: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of vaccination.
<b>Topic 17. Immunoprophylaxis COVID-19</b>
pr.tr.17 "Immunoprophylaxis COVID-19" (full-time course) Immunoprophylaxis COVID-19: clinical aspects of immunoprophylaxis, purpose of immunization, drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccine administration, possible reactions to vaccine administration, vaccination efficacy and duration of protection.
<b>Topic 18. Final modular control</b>
pr.tr.18 "Final modular control" (full-time course) Execution of a practical case (preparation, presentation, defense)

## 9. Teaching methods

### 9.1 Teaching methods

Course involves learning through:

TM1	Case-based learning
TM2	Electronic learning
TM3	Research Based Learning
TM4	Self-study
TM5	Team Based Learning

The discipline is taught using modern teaching methods, which not only promote the development of professional skills, but also stimulate creative and scientific activity and aimed at training practice-oriented specialists.

Acquisition of soft skills by students is carried out during the entire period of studying the discipline. The ability for analytical and critical thinking, teamwork, perseverance is formed during team-, practice- and case-oriented training, knowledge and understanding of the subject area is acquired during lectures, self-study. E-learning stimulates the ability to use information technologies. Research-based learning encourages the development of certainty and persistence in tasks and responsibilities.

### 9.2 Learning activities

LA1	Preparation for practical classes
LA2	Work with textbooks and relevant information sources
LA3	Electronic learning in systems (Meet, MiX.sumdu.edu.ua)



LA4	Individual research project (student research work, article, thesis, etc.)
LA5	Preparation for differential assessment
LA6	Clinical case analysis
LA7	Performing a group practical task

## 10. Methods and criteria for assessment

### 10.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$90 \leq RD \leq 100$
Above the average standard but with minor errors	4 (Good)	$82 \leq RD < 89$
Generally sound work with some errors	4 (Good)	$74 \leq RD < 81$
Fair but with significant shortcomings	3 (Satisfactory)	$64 \leq RD < 73$
Performance meets the minimum criteria	3 (Satisfactory)	$60 \leq RD < 63$
Fail – some more work required before the credit can be awarded	2 (Fail)	$35 \leq RD < 59$
Fail – considerable further work is required	2 (Fail)	$0 \leq RD < 34$

### 10.2 Formative assessment

	Description	Deadline, weeks	Feedback
FA1 Diagnostic testing	A method of effective verification of the level of assimilation of knowledge, abilities and skills from each subject of an educational discipline. Testing allows you to check the assimilation of educational material from each subject.	During the entire period of studying the discipline	The student must provide 60% of the correct answers, which is an admission to the practical part of the lesson.
FA2 Teacher's instructions in the process of practical tasks	The guidelines reveal the methods of pedagogical control over the professional activities of applicants. Efficiency is determined by compliance with all stages of practical tasks. The effectiveness of the formation of the necessary practical skills and abilities depends on the level of formation of practical competence.	During the entire period of studying the discipline	Counseling of students in working with a standardized patient, direct and indirect observation of the work of applicants "at the patient's bedside" with further determination of the level of practical training

<p>FA3 Peer assessment</p>	<p>Partnership interaction aimed at improving the results of educational activities by comparing one's own current level of success with previous indicators. Provides an opportunity to analyze one's own educational activities.</p>	<p>Throughout the entire period of studying the discipline</p>	<p>Adjustment of approaches to learning together with students, taking into account the results of the assessment.</p>
<p>FA4 Interviews and oral comments of the teacher on the results of students</p>	<p>It provides an opportunity to identify the state of educational experience acquired by students in accordance with the set goals, to find out the prerequisites of the state of formation of the obtained results, the causes of difficulties, to adjust the learning process, to track the dynamics of the formation of learning results and to forecast their development.</p>	<p>During the entire period of studying the discipline</p>	<p>According to the obtained data on the results of training, based on their analysis, it is proposed to determine the evaluation as an indicator of the achievements of the educational activities of the applicants</p>
<p>FA5 Consulting the teacher during the preparation of an individual research project (speech at a conference, competition of scientific papers)</p>	<p>An important factor in the formation of professional qualities of future specialists is the research work of students. Involvement of the latter in research activities contributes to the formation of their scientific worldview, industriousness, work capacity, initiative, etc.</p>	<p>During the entire period of studying the discipline</p>	<p>Teacher's oral comments. The student is given additional incentive points (from 5 to 10), depending on the type of research project.</p>
<p>FA6 Solving situational problems</p>	<p>The case method allows you to reveal and form the qualities and abilities of medical students necessary for further work, forms clinical thinking, analytical abilities, independence in decision-making, communication skills, skills for working with a sufficiently large amount of information.</p>	<p>During the entire period of studying the discipline</p>	<p>Assessment of the student's ability to think clinically, justify their decisions, clearly express their opinions, determine the level of theoretical training, which is reflected in the corresponding assessment.</p>

### 10.3 Summative assessment

	Description	Deadline, weeks	Feedback
SA1 Assessment of the level of theoretical training	Forms the skills of independent activity in students, encourages them to strive for exploratory knowledge. Stimulates students to work with the necessary literature, transfers the learning process from the level of passive absorption of information to the level of its active transformation.	During the entire period of studying the discipline	Held at each class, the result of performing the research work affects the comprehensive assessment for the practical class
SA2 Differentiated crediting (in accordance with the regulations)	Compilation of differential calculation. Applicants who have successfully mastered the material of the discipline and scored a minimum of 72 points in the current class are allowed to take the test.	According to the schedule	A student can get 80 points for credit. The minimum number of points a student must receive is 48 points

Form of assessment:

	Points	Можливість перекладання з метою підвищення оцінки
<b>The first semester of teaching</b>	<b>200 scores</b>	
SA1. Assessment of the level of theoretical training	<b>120</b>	
Oral survey, performance of a group case, clinical case.	120	No
SA2. Differentiated crediting (in accordance with the regulations)	<b>80</b>	
Testing (30x1), Theoretical question and situational problem (2x25)	80	No

When mastering the materials of the discipline, the student is assigned a maximum of 5 points for each practical session (the grade is given in the traditional 4-point grading system) for testing and oral answers. The test control is considered passed if the student answered 60% of the questions correctly (6 correct answers out of 10 questions). At the end of the study of the discipline, the arithmetic average of the student's performance is calculated. The number of student points is calculated using the formula of multiplying 120 by the arithmetic mean and dividing by 5. The maximum number of points for the student's current educational activity is 120. The student is admitted to the differentiated assessment on the condition that the requirements of the educational program are met and in the event that for the current educational activity he scored no less than 72 points. Differentiated assessment is conducted at the end of the academic semester in oral form, while the grade "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. Incentive points are added to the evaluation of the discipline for the implementation of an individual research project (defense of a student's scientific work - 12 points, speech at a conference - 5 points,

poster presentation at a conference - 4 points, theses of reports - 3 points). The total score for the discipline cannot exceed 200 points. The possibility of re-enrollment of points in the system of non-formal education in accordance with the Regulation.

## 11. Learning resources

### 11.1 Material and technical support

MTS1	Information and communication systems
MTS2	Library funds
MTS3	Medical facilities / premises and equipment (university clinic, vaccination rooms of children's clinics)
MTS4	Projection equipment
MTS5	Software (to support distance learning, Internet surveys, virtual laboratories, virtual patients, to create computer graphics, modeling, etc.)
MTS6	Multimedia, video and sound reproduction, projection equipment (video cameras, projectors, screens, smart boards, etc.)

### 11.2 Information and methodical support

<b>Essential Reading</b>	
1	Pediatric Infectious Diseases: textbook / S.O. Kramarov, O.B. Nadraga, L.V. Pyra et al. - 4th edition.- Medicine.- 2020.- 240 p.
2	Nelson Textbook of Pediatrics, 2-Volume.- Set 21st .- Robert Kliegman Joseph St. Geme Imprint: Elsevier.- 2019.- 4264 p.
3	Manual of Children's Infectious Diseases [Текст] = Дитячі інфекційні хвороби : навч. посіб. / О. Ye. Fedortsiv, I. L. Horishna, Н. А. Pavlyshyn, I. М. Horishnyi. — Vinnitsia : Nova Knyha, 2020. — 440 p.
<b>Supplemental Reading</b>	
4	United Nations Children’s Fund, The State of the World’s Children 2023: For every child, vaccination, UNICEF Innocenti – Global Office of Research and Foresight, Florence, April 2023.
5	Vaccine Science and Immunization Guideline [Електронний ресурс] : A Practical Guide for Primary Care / edited by Pamela G. Rockwell, DO. — 1st ed. 2017. — Cham : Springer International Publishing, 2017. — XII, 307 p. 37 illus., 26 illus. in color.
<b>Web-based and electronic resources</b>	
5	<a href="https://www.who.int/teams/immunization-vaccines-and-biologicals">https://www.who.int/teams/immunization-vaccines-and-biologicals</a>
6	<a href="https://pubmed.ncbi.nlm.nih.gov/">https://pubmed.ncbi.nlm.nih.gov/</a> PubMed
7	<a href="https://www.nlm.nih.gov/">https://www.nlm.nih.gov/</a> U. S. National Library of Medicine
8	<a href="https://www.who.int/wer/en/">https://www.who.int/wer/en/</a> Weekly Epidemiological Record
9	<a href="https://www.cdc.gov/">https://www.cdc.gov/</a> Centers for Disease Control and Prevention

## COURSE DESCRIPTOR

№	Course Descriptor	Total hours	Classroom work, hours				Independent work of students, hours							
			Total hours	Lectures	Workshops (seminars)	Labs	Total hours	Self-study of the material	Preparation for workshops (seminars)	Preparation for labs	Preparation for assesment	Independent extracurricular tasks		
1	2			3	4	5	6	7	8	9	10	11	12	13
<b>full-time course</b>														
Module 1. Modern bases of immunoprophylaxis in Ukraine														
1	The place of immunoprophylaxis in the system of preventive and anti-epidemic measures			2.5	2	0	2	0	0.5	0	0.5	0	0	0
2	Active immunoprophylaxis preparations			2.5	2	0	2	0	0.5	0	0.5	0	0	0
Module 2. Immunoprophylaxis of certain infections														
1	Immunoprophylaxis of hepatitis A and B			2.5	2	0	2	0	0.5	0	0.5	0	0	0
2	Immunoprophylaxis of diphtheria and whooping cough			2.5	2	0	2	0	0.5	0	0.5	0	0	0
3	Immunoprophylaxis of tuberculosis			2.5	2	0	2	0	0.5	0	0.5	0	0	0
4	Immunoprophylaxis of poliomyelitis			2.5	2	0	2	0	0.5	0	0.5	0	0	0
5	Immunoprophylaxis of influenza			2.5	2	0	2	0	0.5	0	0.5	0	0	0
6	Immunoprophylaxis of tetanus			2.5	2	0	2	0	0.5	0	0.5	0	0	0
7	Immunoprophylaxis of rotavirus infection			2.5	2	0	2	0	0.5	0	0.5	0	0	0
8	Immunoprophylaxis of chickenpox			2.5	2	0	2	0	0.5	0	0.5	0	0	0
9	Immunoprophylaxis of measles, rubella			2.5	2	0	2	0	0.5	0	0.5	0	0	0
10	Immunoprophylaxis of mumps			2.5	2	0	2	0	0.5	0	0.5	0	0	0
11	Immunoprophylaxis of pneumococcal infection			2.5	2	0	2	0	0.5	0	0.5	0	0	0
12	Immunoprophylaxis of hemophilic infection			2.5	2	0	2	0	0.5	0	0.5	0	0	0

1	2	3	4	5	6	7	8	9	10	11	12	13
13	Immunoprophylaxis of meningococcal infection	2.5	2	0	2	0	0.5	0	0.5	0	0	0
14	Immunoprophylaxis of human papillomavirus infection	2.5	2	0	2	0	0.5	0	0.5	0	0	0
15	Immunoprophylaxis COVID-19	2.5	2	0	2	0	0.5	0	0.5	0	0	0
16	Final modular control	2.5	2	0	2	0	0.5	0	0.5	0	0	0
Assesment												
1	Graded Credit	6	0	0	0	0	6	0	0	0	6	0
Independent extracurricular tasks												
1	extracurricular tasks	99	0	0	0	0	99	0	0	0	0	99
<i>Total (full-time course )</i>		<i>150</i>	<i>36</i>	<i>0</i>	<i>36</i>	<i>0</i>	<i>114</i>	<i>0</i>	<i>9</i>	<i>0</i>	<i>6</i>	<i>99</i>