

SYLLABUS

1. General information on the course

Full course name	Clinical Aspects of Immunization
Full official name of a higher education institution	Sumy State University
Full name of a structural unit	Academic and Research Medical Institute. Кафедра педіатрії
Author(s)	Vasylieva Olena Hennadiivna
Cycle/higher education level	The Second Level Of Higher Education, National Qualifications Framework Of Ukraine – The 7th Level, QF-LLL – The 7th Level, FQ-EHEA – The Second Cycle
Semester	1 weeks across 11 semester or 1 weeks across 12 semester
Workload	The amount is 4 ECTS credits, 120 hours, from which 20 are classrooms
Language(s)	English

2. Place in the study programme

Relation to curriculum	Elective course available for study programme "Medicine"
Prerequisites	Clinical aspects of immunoprophylaxis as a discipline is based on the study by students of microbiology, virology and immunology, life safety, basics of bioethics and biosafety, anatomy, pathoanatomy, pathomorphology, physiology, pathophysiology, pharmacology, hygiene and ecology, propaedeutics and pediatrics with these disciplines.
Additional requirements	Krok-1
Restrictions	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

Module 1. Clinical aspects of immunoprophylaxis
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Topic 1 The place of immunoprophylaxis in the system of preventive and anti-epidemic measures

Modern aspects of immunoprophylaxis. The concept of immunity. Types of immunity. Place immunoprophylaxis in the system of preventive and antiepidemic measures. Features epidemic processes of vaccine controlled infections. Immunobiological drugs: vaccines, serum and immunoglobulin preparations. Organizational and legal bases immunoprophylaxis. National calendar of preventive vaccinations and vaccination calendar according to epidemiological indications. Vaccination of persons for health reasons. Recommended vaccination. Organization of the vaccination room of the children's clinic, office immunoprophylaxis. Indications and against indications for vaccination. Active and passive immunization. Documentation: accounting and reporting forms for immunoprophylaxis of infectious diseases diseases Storage and transportation of immunobiological drugs ("cold chain).

Topic 2 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 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, tetanus and pertussis

Immunoprophylaxis of diphtheria, pertussis and tetanus: 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 of pregnant women and breastfeeding women, vaccination efficacy and duration of protection. Emergency prevention of tetanus.

Topic 5 Immunoprophylaxis of poliomyelitis and hemophilic infection

Immunoprophylaxis of poliomyelitis and hemophilic infection: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.

Topic 6 Immunoprophylaxis of measles, rubella and mumps

Immunoprophylaxis of measles, rubella and mumps: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.

Topic 7 Immunoprophylaxis of chickenpox and rotavirus infection

Immunoprophylaxis of chickenpox and rotavirus infection: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.

<p>Topic 8 Immunoprophylaxis of pneumococcal infection and influenza</p> <p>Immunoprophylaxis of pneumococcal infection and influenza: clinical aspects of immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccination, vaccination of pregnant and lactating women, vaccination effectiveness and duration of protection.</p>
<p>Topic 9 Immunoprophylaxis of meningococcal infection and papillomavirus human infection</p> <p>Immunoprophylaxis of meningococcal infection and papillomavirus infection human: clinical aspects of immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination pregnant and breastfeeding women, vaccination effectiveness and duration protection.</p>
<p>Topic 10 Final modular control</p> <p>Execution of a practical case (preparation, presentation, defense)</p>

5. Intended learning outcomes of the course

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

LO1	To acquire the skills of interviewing and objective examination of the patient. To substantiate and apply clinical methods for understanding the manifestations of the disease in childhood.
LO2	Have the ability to determine the necessary list of laboratory and instrumental studies and evaluate their results. And the ability to carry out differential diagnosis of somatic and infectious diseases of childhood, to formulate a clinical diagnosis based on their assessment.
LO3	To be able to diagnose emergency conditions and determine the tactics of providing them, as well as to have the skills to provide medical assistance in them.
LO4	Apply in practice the algorithms of examination and management of sick children with emergency conditions, master the methods of treatment of emergency conditions in children.
LO5	To justify the use of basic invasive and non-invasive diagnostic methods, to be able to perform medical manipulations.
LO6	Plan measures to prevent the spread of childhood infectious diseases. Carry out detection and early diagnosis of children's infectious diseases; primary anti-epidemic measures in the focus of an infectious disease.
LO7	Ability to conduct epidemiological and medical-statistical research on the health of the population; processing of state, social, economic and medical information. Have the ability to maintain medical records.

7. Teaching and learning activities

7.1 Types of training

<p>Topic 1. The place of immunoprophylaxis in the system of preventive and anti-epidemic measures</p>
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pr.tr.1 "The place of immunoprophylaxis in the system of preventive and anti-epidemic measures" (full-time course)

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. Immunoprophylaxis of tuberculosis

pr.tr.2 "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 3. Immunoprophylaxis of hepatitis A and B

pr.tr.3 "Immunoprophylaxis of hepatitis A and B" (full-time course)

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, tetanus and pertussis

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

Immunoprophylaxis of diphtheria, pertussis and tetanus: 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 of pregnant women and breastfeeding women, vaccination efficacy and duration of protection. Emergency prevention of tetanus.

Topic 5. Immunoprophylaxis of poliomyelitis and hemophilic infection

pr.tr.5 "Immunoprophylaxis of poliomyelitis and hemophilic infection" (full-time course)

Immunoprophylaxis of poliomyelitis and hemophilic infection: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.

Topic 6. Immunoprophylaxis of measles, rubella and mumps

<p>pr.tr.6 "Immunoprophylaxis of measles, rubella and mumps" (full-time course)</p> <p>Immunoprophylaxis of measles, rubella and mumps: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.</p>
<p>Topic 7. Immunoprophylaxis of chickenpox and rotavirus infection</p>
<p>pr.tr.7 "Immunoprophylaxis of chickenpox and rotavirus infection" (full-time course)</p> <p>Immunoprophylaxis of chickenpox and rotavirus infection: clinical aspects immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination of pregnant women and women who are breastfeeding, the effectiveness of vaccination and the duration of protection.</p>
<p>Topic 8. Immunoprophylaxis of pneumococcal infection and influenza</p>
<p>pr.tr.8 "Immunoprophylaxis of pneumococcal infection and influenza" (full-time course)</p> <p>Immunoprophylaxis of pneumococcal infection and influenza: clinical aspects of immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination regimens and methods of vaccination, vaccination of pregnant and lactating women, vaccination effectiveness and duration of protection.</p>
<p>Topic 9. Immunoprophylaxis of meningococcal infection and papillomavirus human infection</p>
<p>pr.tr.9 "Immunoprophylaxis of meningococcal infection and papillomavirus human infection" (full-time course)</p> <p>Immunoprophylaxis of meningococcal infection and papillomavirus infection human: clinical aspects of immunoprophylaxis drugs for active immunoprophylaxis, indications, contraindications, vaccination schemes and methods of vaccination, vaccination pregnant and breastfeeding women, vaccination effectiveness and duration protection.</p>
<p>Topic 10. Final modular control</p>
<p>pr.tr.10 "Final modular control" (full-time course)</p> <p>Execution of a practical case (preparation, presentation, defense)</p>

7.2 Learning activities

LA1	Execution of individual calculation and analytical tasks
LA2	Performing a group practical task
LA4	E-learning in systems (Meet, MiX learning, Zoom)
LA5	Discussion of cases
LA6	Preparing for Step 2
LA7	Preparation for certification
LA8	Preparation for current and final control

LA9	Preparation for practical classes
LA10	Watching movies
LA11	Solving situational problems

8. Teaching methods

Course involves learning through:

TM1	Case-study
TM2	Business games
TM3	Educational discussion / debate
TM4	Think-pair-share
TM5	Role play

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.

The discipline ensures that students acquire the following soft skills: GC1. Ability to abstract thinking, analysis, and synthesis. GC2. Ability to learn and master modern knowledge. GC3. Ability to apply knowledge in practice. GC4. Knowledge and understanding of the subject area and professional activity comprehension. GC5. Ability to adapt and act in a new situation. GC6. Ability to make reasoned decisions. GC7. Ability to work as a team member. GC8. Interpersonal skills. GC11. Skills in information and communication technologies. GC12. Determination and persistence on the tasks and commitments undertaken.

9. Methods and criteria for assessment

9.1. Assessment criteria

Definition	National scale	Rating scale
Outstanding performance without errors	5 (Excellent)	$170 \leq RD \leq 200$
Above the average standard but with minor errors	4 (Good)	$140 \leq RD < 169$
Fair but with significant shortcomings	3 (Satisfactory)	$120 \leq RD < 139$
Fail – some more work required before the credit can be awarded	2 (Fail)	$0 \leq RD < 119$

9.2 Formative assessment

FA1	Diagnostic testing
FA2	Protection of presentations and abstracts
FA3	Discussion and self-correction of the work done by students
FA4	Interviews and oral comments of the teacher on his results
FA5	Checking and evaluating written assignments

FA6	Solving situational problems
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9.3 Summative assessment

SA1	Assessment of testing, survey, solving a clinical case.
SA2	Execution of a practical case (preparation, presentation, defense)
SA3	Practical-oriented differentiated assessment

Form of assessment:

11 semester		200 scores
SA1. Assessment of testing, survey, solving a clinical case.		110
	Oral survey and testing, solving a clinical case.	110
SA2. Execution of a practical case (preparation, presentation, defense)		10
		10
SA3. Practical-oriented differentiated assessment		80
		80

Form of assessment (special cases):

11 semester		200 scores
SA1. Assessment of testing, survey, solving a clinical case.		110
	In the event of quarantine restrictions, testing evaluations, surveys, clinical case solutions are conducted remotely using the MIX.sumdu.edu.ua platform, Google meet	110
SA2. Execution of a practical case (preparation, presentation, defense)		10
	In the event of quarantine restrictions, testing evaluations, surveys, clinical case solutions are conducted remotely using the MIX.sumdu.edu.ua platform, Google meet	10
SA3. Practical-oriented differentiated assessment		80
	In the event of quarantine restrictions, testing evaluations, surveys, clinical case solutions are conducted remotely using the MIX.sumdu.edu.ua platform, Google meet	80

When mastering the materials of the discipline, the student is awarded 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). The grade for the discipline is defined as the sum of points for the current educational activity (at least 72) and points for the final module control (at least 48). The number of points for the current activity is calculated according to the formula $110 \times \text{the arithmetic average of the student's performance in the 4-point evaluation system} / 5$. For the defense of the presentation, the student receives a maximum of 10 points, a minimum of -6. The maximum number of points for the current educational activity of the student is 120. The student is admitted to the credit provided that the requirements of the educational program are met and if he

has scored at least 72 points for the current educational activity: 66 points during practical classes, 6 points for the defense of the presentation. The final module control is conducted at the end of the academic semester in the form of a written assessment, while the grade "5" corresponds to 80 points, "4" - 64 points, "3" - 48 points, "2" - 0 points. In case of an unsatisfactory result for the final module control, the student has the right to retake the assessment. Students who did not appear for the assessment without a good reason are considered to have received an unsatisfactory grade. A student's refusal to complete the final module task is certified as an unsatisfactory response.

10. Learning resources

10.1 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.)

10.2 Information and methodical support

Essential Reading	
1	Manual of Children's Infectious Diseases [Текст] = Дитячі інфекційні хвороби : навч. посіб. / О. Ye. Fedortsiv, I. L. Horishna, H. A. Pavlyshyn, I. M. Horishnyi. — Vinnitsia : Nova Knyha, 2020. — 440 p.
2	Infant and Young Child Nutrition (0–23 months) : recommendations [Текст] / O. V. Katilov, A. V. Varzar', O. Yu. Belousova etc. — Vinnytsia : Nova Knyha, 2019. — 64 p.
3	Pediatric Infectious Diseases [Текст] : textbook / S. O. Kramarev, O. B. Nadraga, L. V. Pipa etc. — 4-th edition. — Kyiv : AUS Medicine Publishing, 2020. — 240 p. + Гриф МОЗ.
Supplemental Reading	
1	Methodical instructions for practical lesson on the topic "Viral hepatitis" on the discipline "Children infectious diseases" (in accordance with the conditions of the Bologna process) [Текст] : for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian. — Sumy : Sumy State University, 2021. — 79 p.
2	Epidemiology of infectious diseases: textbook / ND Yushchuk, Yu. V. Martynov, EV Kukhtevich, Yu. Yu. Grishina. - 3rd ed. revised and add. - ed. "GEOTAR-Media". - 2016. - 496 p.
3	Infectious diseases and epidemiology: textbook / V. I. Pokrovsky, N. I. Briko, B. K. Danilkin. - 3rd ed., Rev. and add. - M. : GEOTAR-Media.- 2016. - 1008 p.

4	Children infectious diseases. Methodical instructions for practical lessons. "Poliomyelitis" [Електронний ресурс] : for students specialty 7.110101 of full-time studying / O. I. Smiyan, T. P. Bynda, O. G. Vasilyeva. — Електронне видання каф. педіатрії післядипломної освіти. — Sumy : Sumy State University, 2015. — 50 p.
5	Methodical instructions for practical lessons "Children infectious diseases. Measles" [Текст] : for students of specialty 7.110101 of full-time studying / O. I. Smiyan, T. P. Bynda, Iu. A. Mozgova, K. O. Smiian-Horbunova. — Sumy : Sumy State University, 2017. — 59 p.
6	Methodological instructions for practical lessons "Scarlet fever" on the discipline "Childhood infections" [Текст] : in accordance with the conditions of the Bologna process for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian-Horbunova, O. G. Vasilyeva. — Sumy : Sumy State University, 2019. — 54 p.
7	Methodological instructions for practical lessons "Pertussis" on the discipline "Childhood Infections" (in accordance with the conditions of the Bologna process) [Текст] : for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian, O. G. Vasilyeva. — Sumy : Sumy State University, 2020. — 57 p.
8	Methodological instructions for practical lessons "Diphtheria" on the discipline "Childhood Infections" (in accordance with the conditions of the Bologna process) [Текст] : for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, O. G. Vasilyeva, K. O. Smiian. — Sumy : Sumy State University, 2020. — 83 p.
9	Methodological instructions for practical lessons "Rubella" on the discipline "Childhood infections" [Текст] : in accordance with the conditions of the Bologna process for students of specialty 222 "Medicine" of full-time training / O. I. Smiyan, T. P. Bynda, K. O. Smiian-Horbunova. — Sumy : Sumy State University, 2018. — 53 p.
Web-based and electronic resources	
1	https://moz.gov.ua/ Ministry of Health of Ukraine
2	https://www.ecdc.europa.eu/en European Centre for Disease Prevention and Control
3	https://pubmed.ncbi.nlm.nih.gov/ PubMed
4	https://www.nlm.nih.gov/ U. S. National Library of Medicine
5	https://www.who.int/wer/en/ Weekly Epidemiological Record
6	https://www.cdc.gov/ Centers for Disease Control and Prevention