**Kharkiv National Medical University**

**The V Faculty on Training Foreign Students at the Training**

**and Research Institute for Foreigners**

**Department of Propaedeutic of Pediatrics #2**

Field of knowledge 22 “Healthcare”

Specialty 228 "Pediatrics"

Educational-professional program (educational-scientific program) Medicine

Educational qualification “Master of Medicine”

**SYLLABUS OF THE COURSE**

**selective**

**Worldwide Trends of Vaccination**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The syllabus of the discipline approved at the meeting of the department of Propaedeutic of Pediatrics#2  Protocol of "\_\_28 " 08 2020 number 1 Head of Department \_\_\_\_\_\_\_\_\_\_\_\_\_ \_ Klymenko V.A.   (signature) (surname and initials)  “\_\_\_”\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 20\_\_ | Approved at the KhNMU methodical meeting  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Protocol of “\_31\_\_”\_\_\_08\_\_ 2020 year № 1  Chairman  \_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ Gonchar M.O.\_\_\_\_  (signature) (surname and initials)  “\_\_\_”\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 20\_\_ |  |  |  |

**Kharkiv 2021**

**Compiler/ developer** of the syllabus the head of the department, MD, professor Klymenko V.A., PhD, associate professor Servetnik A.V., assistant PhD Ashcheulov O.M.

Teachers: assistants PhD Ashcheulov O.M., associate professor Servetnik A.V.

Information about the teacher (s) (professional interests, trajectory of professional development) with reference to the teacher's profile (on the website of the department, in the Moodle system - if available).

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Information about consultations: Oral (face-to-face) consultations: by prior arrangement

On-line consultations: according to the schedule using the resources of the systems Moodle or Zoom.

Location of practical classes: Kharkiv regional children hospital N1, Kharkiv municipal children outpatient clinic N14 resources of the systems Moodle or Zoom..

**Discipline information**

|  |  |  |
| --- | --- | --- |
| Name of indicators | Field of knowledge, direction of training, educational and qualification level | Characteristics of the discipline |
| full-time education |
| Number of credits– 3 | Educational program for training specialists of the second (master's)  level of higher education training 22 "Healthcare" | Selective |
| Total number of hours – 90 | Specialty:  228 "Pediatrics" | **Year of education:** |
| 4-й |
| **Semester** |
|  |
| **Lectures** |
| Hours for day (or evening) form of study:  classrooms - 20  independent student work - 70 | Education level:  master | 0 hours |
| **Practical, seminar** |
| 20 hours |
| **Laboratory** |
| 0 hours |
| **Individual work** |
| 70 hours |
| **Individual tasks** |
| Type of control:  test |

Educational program of higher education of Ukraine, second (master's) level, educational qualification assigned - master's degree, field of knowledge - 22 Healthcare, specialty 228 "Pediatrics" is based on the Law of Ukraine "On Higher Education" and the resolution of the Cabinet of Ministers of Ukraine 01.02.2017 № 53 "On amendments to the resolution of the Cabinet of Ministers of Ukraine dated 29.04.2015 № 266", in accordance with the order of the Ministry of Education and Science of Ukraine dated 01.06.2016 № 600 "On approval and implementation of Methodological recommendations for the development standards of higher education ".

The course program determines the prerequisites for access to education, orientation and main focus of the program, the amount of credits required for a master's degree, a list of general and special (professional) competencies, normative and variable content of training, formulated in terms of learning outcomes and control requirements quality of higher education.

The department accepts qualified students of any race, national or ethnic origin, gender, age, people with special needs, any religion, sexual orientation, gender, veteran status or marital status for all rights, privileges, programs and activities, provided to university students.

**Description of the discipline (abstract).**

The course "Worldwide Trends of Vaccination" is devoted to the main problems of different ages children vaccination. The program covers key topics related to the basic concepts of immunity and vaccination and general vaccination issues. Particular attention is paid to the peculiarities of vaccination against certain diseases and the National Vaccination Calendar for different ages children, as well as Adverse Reactions and Complications after Vaccination.

Practical classes include supervision of specialized patients in the regional center of pediatric immunology KNP "Regional Children's Clinical Hospital №1" and in the vaccination room of KNP "City Children's Clinic №14" according to the schedule, as well as during individual work with cases on specific topics .

Teaching is based on the principles of evidence-based medicine using current standards (guidelines) of world professional societies.

The course covers the main practical and theoretical aspects of the future pediatrician’s, family doctor’s, vaccinologist’s and pediatric immunologist’s practice.

*Prerequisites.* The study of the discipline involves the prior mastering of disciplines in medical biology, normal and pathological anatomy, normal and pathological physiology, biochemistry, microbiology, propaedeutic of pediatrics, medical genetics, pharmacology and medical prescription, epidemiology and principles of evidence-based medicine and emergency medicine, emergency have practical skills in caring for pediatric patients and their management in outpatient and inpatient settings.

*Postrequisites.* The basis for licensing exam preparation, study preparation in high education institutions in the programs of the third educational and scientific level of high education are the main provisions of the discipline should be applied in the study of related disciplines during 5 years of study.

**Purpose:** to provide training of highly qualified specialists in the field of pediatrics, based on deep knowledge and understanding of the immune system of a child, including a sick child, in compliance with the principles of medical ethics and deontology, modern methods of specific immune prophylaxis, vaccination in Ukraine and other countries.

**The main objectives of the course** are the acquisition by students of competencies in accordance with the general and professional competencies of the educational-professional program "Medicine" of the second level of higher education in the specialty 222 Medicine (discipline "Pediatrics").

**Integral competencies:**

- ability to solve typical and complex specialized tasks and practical problems in professional activity in the field of health care, or in the process of training, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.

**General competencies:**

- ability to abstract thinking, analysis and synthesis, ability to learn and be modernly trained;

- ability to apply knowledge in practical situations;

- knowledge and understanding of the subject area and understanding of professional activity;

- ability to adapt and act in a new situation;

- ability to make an informed decision; work in a team;

- interpersonal skills;

- ability to communicate in the state language both orally and in writing;

- ability to communicate in a foreign language;

- skills of using information and communication technologies;

- determination and persistence in terms of tasks and responsibilities;

- ability to act socially responsibly and consciously.

**Special (professional) competencies in the field of pediatrics:**

- Interview skills, using the results of the interview with the patient, according to the standard scheme of interviewing the patient;

- ability to determine the necessary list of laboratory and instrumental studies and evaluate their results;

- ability to establish a preliminary and clinical diagnosis of the disease;

- the ability to determine the necessary mode of work and rest, the nature of nutrition in the treatment of diseases;

- ability to determine the principles and nature of treatment of diseases;

- ability to diagnose emergencies;

- ability to determine tactics and skills of emergency medical care;

- skills of performing medical manipulations;

- ability to plan and conduct sanitary and hygienic, preventive and anti-epidemic measures, including on infectious diseases;

- ability to determine the tactics of management of persons subject to dispensary supervision;

- ability to keep medical records.

The study of this discipline also forms the following social skills in students:

- teamwork (implemented through: methods of working with subgroups of students and brainstorming during the analysis of clinical cases);

- communicativeness (implemented through: methods of working with subgroups of students and brainstorming during the analysis of clinical cases, methods of presenting the results of independent work and their protection in the group);

- leadership skills (implemented through: methods of presenting the results of independent work and their protection in the group);

- conflict management (implemented through: methods of business games in subgroups);

- time management (implemented through: methods of self-organization during classroom work in groups and independent work).

**Discipline status:** selective; The format of the discipline is mixed - a discipline that is accompanied by the Moodle system, teaching the discipline, combines traditional forms of classroom learning with elements of distance learning, which uses available interactive information technology (ZOOM, Moodle), face-to-face and distance counseling.

**Teaching methods**

Clinical (curation of children with pathology, who are vaccinated in a hospital; curation of almost healthy children, who are vaccinated in a primary care facility), phantom, electronic information (presentations, videos, guidelines, lectures), scientific (participation in scientific developments in the discipline), control (tests, situational tasks, assessment of practical skills, defense of a clinical case).

Learning outcomes

The course covers the main aspects of training a future pediatrician, family doctor, vaccinologist or pediatric immunologist.

According to the training program in the discipline "World trends in vaccination", the higher education seeker will acquire theoretical knowledge, methodological training, practical skills and abilities in the following areas:

- Physiology and pathology of the immune system in children of different ages

- Impaired immune response depending on the age of the child

- Types, varieties and composition of vaccines

- Vaccination of almost healthy children

- Vaccination of children in case of the various diseases and pathological conditions background.

- Adverse reactions and complications after vaccination and methods of their elimination

- Emergency care for vaccine-related conditions.

**The content of the discipline**

Training and thematic plan of discipline

|  |  |  |
| --- | --- | --- |
| **WORLD VACCINATION TRENDS COURSE (90 hours) 3 credits** | | |
| **Practical classes topics (20 hours)** | | |
| 1 | Basic concepts of immunity and vaccination | 2 |
| 2 | General vaccination issues | 2 |
| 3 | Legislative approach to vaccination | 2 |
| 4 | Indications and contraindications to vaccination | 2 |
| 5 | Vaccine prevention of bacterial diseases | 2 |
| 6 | Vaccine prevention of viral diseases | 2 |
| 7 | Vaccination in a hospital | 2 |
| 8 | National vaccination calendar. Trends and schedules of vaccination around the world. Vaccination of travelers | 2 |
| 9 | Adverse reactions and complications after vaccination | 2 |
| 10 | Remarks on anti-vaccine misinformation and speculation | 2 |
| **Total** |  | **20** |
| **Themes of independent works (70 hours)** | | |
| 1 | Vaccine prophylaxis in the XX century. - reducing the incidence of controlled infections and their elimination | 7 |
| 2 | Regulatory requirements for vaccines | 7 |
| 3 | The composition of vaccines. Main and auxiliary components | 7 |
| 4 | Use of vaccines. Cold chain | 7 |
| 5 | Ways of administration of vaccines. Ensuring safe injections | 7 |
| 6 | Geographical features of vaccine prophylaxis | 7 |
| 7 | Endemic regions of various diseases | 7 |
| 8 | Vaccinology and human immunogenetics | 7 |
| 9 | The current position about natural and artificial ways of immunity stimulating | 7 |
| 10 | WHO position on vaccination | 7 |
| **Total** |  | **70** |

**Practical classes topics**

1. **Basic concepts of immunity and vaccinationю**

Definitions and types of immunity. Formation of the immune response. The effect of vaccination on human immune status. Formation of immunity depending on the age. Immune mechanism of action of vaccines. The state of the immune system after vaccination depending on time. Prediction of vaccine prophylaxis in the first decades of the XXI century.

**2. General issues of vaccination.**

Types and varieties of vaccines. Live attenuated vaccines. Inactivated whole cell vaccines. Subunit vaccines. Anatoxin-based vaccines. Combination vaccines. Requirements for the organization of vaccination. Vaccine prevention office. Global vaccine monitoring system. Diseases with under developed vaccines. Public relations regarding vaccine safety.

**3. Legislative approach to vaccination.**

Legal regulation of vaccination. Economic efficiency of vaccine prevention. Violation of declarative and real rights of a child by his parents refusing the vaccination.

**4. Indications and contraindications for vaccination.**

Indications for vaccination in various diseases. Misconceptions about the consequences of vaccination. Emergency vaccination. Violation of the vaccination schedule. Vaccination of premature babies. Contraindications for vaccination.

**5. Vaccine prevention of bacterial diseases**.

Vaccines for the prevention of diphtheria, tetanus, pertussis. Vaccine prophylaxis of hemophilic infection. Vaccine prevention of meningococcal infection. Vaccine prophylaxis of tuberculosis. Immunoprophylaxis of pneumococcal infection. Immunoprophylaxis of typhoid infections. Immunoprophylaxis of dysentery infections. Immunoprophylaxis of anthrax. Plague vaccines. Cholera vaccine. Immunoprophylaxis of intestinal infections of typhoid fever and shigellosis.

**6. Vaccine prevention of viral diseases.**

Hepatitis A vaccine prophylaxis. Hepatitis B vaccine prophylaxis. Influenza vaccines. Immunoprophylaxis of tick-borne encephalitis. Measles vaccine prophylaxis. Rubella vaccine prophylaxis. Vaccine prevention of mumps. Rotavirus vaccines. Polio vaccines. Vaccination of human papilloma virus. Recommended vaccines that are not on the calendar.

**7. Vaccination in a hospital.**

Vaccination of patients with primary immunodeficiency. Vaccination of patients with secondary immunodeficiencies. Vaccination of patients with frequent respiratory infections. Vaccination and pregnancy. Vaccination of patients with allergic diseases. Vaccination in the treatment of various diseases. Vaccination on the background of chronic diseases.

**8. National vaccination calendar.** Trends and schedules of vaccination around the world. Vaccination of travelers.

National vaccination calendar. Vaccination schedule of the European region. US vaccination schedule. Vaccination schedule of Japan. China's vaccination schedule. Vaccination when traveling to other countries.

**9. Adverse reactions and complications after vaccination**.

The main types of side effects after vaccination. Complications that are causally related to vaccination. Complications that are causally related to the vaccination procedure. Vaccine reactions. Complications after BCG vaccination. Differences between minor and severe reactions to vaccination. Reactions are caused by anxiety after immunization. Emergency and first aid for reactions to vaccines.

**10. Remarks on anti-vaccine misinformation and speculation.**

"Anti-vaccination panic" as a factor in the development of the crisis situation. Vaccination refusals are widespread among the population, including health care workers. Mass media as a tool of anti-vaccination propaganda.

**Literature:**

1. Practical Immunology. F.C. Hay, O.M.R. Westwood. Wiley-Blackwell Publishing, 4th edition, 2008. – 408 P.
2. Vaccinology: Principles and Practice. W.J.W. Morrow, N.A. Sheikh, C.S. Schmidt, D.H. Davies. Wiley-Blackwell Publishing, 2012. – 552 P.
3. Immunopotentiators in Modern Vaccines. V. Schijns, D. O'Hagan. Elsevier Academic Press, 2nd edition, 2016. – 508 P.
4. Understanding Modern Vaccines: Perspectives in Vaccinology. N. Garçon, P.L. Stern, A.L. Cunningham. Elsevier, 2011. – 199 P.
5. The Vaccine Book. B.R. Bloom, P.H. Lambert. Elsevier Academic Press, 2nd edition, 2016. – 664 P.

**Discipline policy and values**

Discipline requirements (system of requirements and rules that the teacher imposes on students of higher school in the study of the discipline). To achieve the goals of training and successfully complete the course, it is necessary: to join the work from the first day; attend lectures regularly; read the material in advance, before its consideration in a practical class; not to be late and not to miss classes; come to the department dressed in a medical form, have changeable medical shoes, have a phonendoscope, notebook, pen; perform all necessary tasks and work every day; be able to work with a partner or in a group; ask for help and get it when you need it. Written tasks and homework must be completed in full volume and on time.

Academic mobility, interchangeability of credit credits (1 credit contains 30 hours) are provided. Students can discuss different tasks, but their performance is strictly individual.

Class attendance and behavior. Attendance at lectures and practical classes by students is mandatory. Students are not allowed to be late for lectures and practical classes.

During the lecture, students are recommended to keep notes of the lesson and keep a sufficient level of silence. Asking questions to the lecturer is perfectly normal.

Electronic gadgets using is allowed only with the teacher’s permission. You are not allowed to write off, use various software, tips, use a mobile phone, tablet or other electronic gadgets during the lesson.

Academic Integrity Policy (including liability for breach of academic integrity). Observance of academic integrity by students of education provides:

 Independent performance of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);

 Links to sources of information in the case of the use of ideas, developments, statements, information;

 Compliance with copyright and related rights legislation;

 Providing reliable information about the results of their own (scientific, creative) activities, used research methods and sources of information.

The Propaedeutic of Pediatrics Department maintains zero tolerance for plagiarism. Students are expected to constantly raise their awareness of academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

Policy for people with special educational needs. Students with special needs should meet with the teacher or warn teacher before the start of classes, at the request of the student it can be done by group monitor.

Recommendations for successful completion of the discipline (activity of higher school students during practical classes, completion of the required minimum of educational work). Practical classes include:

Active participation during the discussion in the auditorium, students should be ready to understand the material in detail, ask questions, express their point of view, discuss. During the discussion, it is important:

- respect for colleagues;

- tolerance for others and their experiences;

- susceptibility and impartiality;

- the ability to disagree with the opinion, but to respect the personality of the opponent;

- careful argumentation of one's opinion and courage to change one's position because of influence of evidence;

- expression, when a person avoids unnecessary generalizations, describes his feelings and formulates his wishes based on their own thoughts and emotions;

- obligatory acquaintance with primary sources.

A creative approach in its various manifestations is welcome. Students are expected to be interested in participating in city, national and international conferences, competitions and other events in the subject profile.

Encouragement and penalties (additional points for conferences, research, edits, advice, participation in surveys). Assessment of individual student tasks is carried out under the conditions of the teacher's tasks (report of the abstract in a practical lesson, report with a presentation in a practical lesson, report at scientific and practical conferences of the department, university, writing abstracts, articles, participation in the All-Ukrainian Olympiad). Points (not more than 10) are added as incentives.

Safety precautions. The first lesson of the course will explain the basic principles of labor protection by conducting appropriate training. It is expected that everyone should know where the evacuation exit is closest to the auditorium, where the fire extinguisher is, how to use it, etc.

The procedure for informing about changes in the syllabus, etc. Development, updating and approval of the syllabus of the discipline is carried out every academic year. Mandatory placement on the website of KhNMU in the profile of the educational program "Medicine" until June 30 of the current academic year for the next academic year.

**Evaluation system and requirements**

Organization of current control. Assimilation of the topic (current control) is controlled during practical class in accordance with specific goals. The following tools are used to assess the level of preparation of students: solving situational problems, interpretation and evaluation of laboratory results, analysis and evaluation of instrumental studies and parameters that characterize the functions of the human body, control of practical skills. The final class must be conducted in accordance with the curriculum during the semester on schedule, during classes. Taking of final class is carried out by the teacher of the academic group. The assessment is conducted in the traditional 4-point grade scale ("excellent", "good", "satisfactory" and "unsatisfactory"). Teacher automatically receives using the electronic journal of automated control system conversion of the average grade for current educational activities in a multiscore scale is carried out in accordance with the "Instructions for assessing the educational activities of students…" or the average grade (to the nearest hundredth) in accordance with the NQF. The minimum quantity of points which student can get for current activity during section studying is 70 points, the maximum – 120 points.

Evaluation of students' self-studying work. Self-studying work of students, which is provided by the topic of the lesson along with classroom work, is assessed during the current control of the topic in the relevant lesson.

Organization of final control – grading test. Permission for grading test is determined in points of current educational activity: min - 70, max - 120 points. Grading test is made by the teacher of the academic group or on commission in case of disagreement of the student with the results of attestation. If the grading test is not made, the dates of test retaking during the holidays are set, before the beginning of the next semester. Directly grading credit is estimated from 50 up to 80 points.

Grading test in the discipline is a process when following indexes received during the course are checked:

- level of theoretical knowledge;

- development of creative thinking;

- skills of self-studying work;

- competencies – the ability to synthesize the acquired knowledge and apply them in solving practical problems.

Grading test is conducted by the group teacher at the last class.

During the grading test, the acquired practical skills and theoretical knowledge assessment is carried out according to the tickets drawn up at the department, which include all topics of the discipline.

The discipline grade is defined as the average arithmetic of the points for all semesters during which the discipline was studied, which are converted into a 120-point ECTS scale with the addition of points obtained directly on the grading test.

The maximum number of points that a student can score for studying the discipline is 200 points, including the maximum number of points for current educational activities for 120 points, as well as the maximum number of points according to the results of grading test for 80 points. The minimum number of points is 120, including the minimum current educational activity – 70 and the results of differentiated credit – 50 points.

The discipline grade is given only to students who have enrolled in all practical classes and grading tests. If the grading test is not received, the dates of retaking during the holidays are set, before the beginning of the next semester.

Elimination of academic debt (working off). Omissions of practical classes are worked off hour by hour to the teacher of the group or the duty teacher (according to the schedule on the information stand of the department). Taking of working off and consultations are held daily from 3.00pm till 5.00pm, on Saturdays in accordance with the "Regulations on the procedure of working off of missed practical classes by students" from 07.12.2015 No. 415 or remotely in quarantine.

Students who have not been admitted to the grading test or have not passed it are entitled to liquidation of current academic debt and retake the exam within the current semester, as well as within the approved schedule for two weeks during the winter or summer holidays after completion of the relevant semester or academic year.

If you have any questions, you may contact the teacher.

**Conversion of the average grade for current activity**

**into a multiscore scale.**

The conversion is performed under the "Instruction on the evaluation of academic activity of students…" (Table 1).

Table 1

**Conversion of the average score for current activity into a multipoint scale**

**(for courses that end with a grading test)**

| 4-point scale | 200- point scale |  | 4- point scale | 200- point scale |
| --- | --- | --- | --- | --- |
| 5 | 120 | 3.91-3,94 | 94 |
| 4.95-4,99 | 119 | 3.87-3,9 | 93 |
| 4.91-4,94 | 118 | 3.83- 3,86 | 92 |
| 4.87-4,9 | 117 | 3.79- 3,82 | 91 |
| 4.83-4,86 | 116 | 3.74-3,78 | 90 |
| 4.79-4,82 | 115 | 3.7- 3,73 | 89 |
| 4.75-4,78 | 114 | 3.66- 3,69 | 88 |
| 4.7-4,74 | 113 | 3.62- 3,65 | 87 |
| 4.66-4,69 | 112 | 3.58-3,61 | 86 |
| 4.62-4,65 | 111 | 3.54- 3,57 | 85 |
| 4.58-4,61 | 110 | 3.49- 3,53 | 84 |
| 4.54-4,57 | 109 | 3.45-3,48 | 83 |
| 4.5-4,53 | 108 | 3.41-3,44 | 82 |
| 4.45-4,49 | 107 | 3.37-3,4 | 81 |
| 4.41-4,44 | 106 | 3.33- 3,36 | 80 |
| 4.37-4,4 | 105 | 3.29-3,32 | 79 |
| 4.33-4,36 | 104 | 3.25-3,28 | 78 |
| 4.29-4,32 | 103 | 3.21-3,24 | 77 |
| 4.25- 4,28 | 102 | 3.18-3,2 | 76 |
| 4.2- 4,24 | 101 | 3.15- 3,17 | 75 |
| 4.16- 4,19 | 100 | 3.13- 3,14 | 74 |
| 4.12- 4,15 | 99 | 3.1- 3,12 | 73 |
| 4.08- 4,11 | 98 | 3.07- 3,09 | 72 |
| 4.04- 4,07 | 97 | 3.04-3,06 | 71 |
| 3.99-4,03 | 96 | 3.0-3,03 | 70 |
| 3.95- 3,98 | 95 | Less than 3 | Not sufficient |

Head of the Department of Propaedeutic of Pediatrics,

DM, professor Klymenko V.A.