MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
V.N. KARAZIN KHARKIV NATIONAL UNIVERSITY

SCHOOL OF MEDICINE

Department of general and clinical immunology and allergology

Vice-President for Research
and Education

_____A.V. Panteleimonov

"_____"_____2020year

WORKING PROGRAM OF EDUCATIONAL DISCIPLINE

«CLINICAL IMMUNOLOGY AND ALLERGOLOGY»

higher of education level «Specialist»
branch of knowledge 22 «Health care»
specialty 222 «Medicine»
educational program of professional qualification «Doctor»
obligatory discipline

2020/ 2021 academic year

The working program of the discipline "Clinical Immunology and Allergology" training of applicants for educational qualification "Specialist" professional qualification "Doctor" of the second (master's) level of higher education in the field of knowledge 22 "Health", specialty 222 "Medicine".

V.N. Karazin Kharkov National University, medical faculty. Protocol №9 «13» 05 2020 – 19 p.

The working program of the subject "Clinical immunology and allergology" study for seekers of higher medical education of the second (master's) level of educational qualification «Specialist» of the professional qualification «Doctor» of the area of experience 22 «Health care» of the specialty 1201 «Medicine» at the School of Medicine of V.N. Karazin Kharkov National University is made based on typical (approximate) program of the discipline developed by the public institution «Central methodical cabinet in higher medical education of the Ukrainian Ministry of Health» agreed with the director of Public Institution «Central methodical cabinet in higher medical education of the Ukrainian Ministry of Health» I.Melnick April 28, 2017, agreed with Acting Chief of the Department of education and science of the Ukrainian Ministry of Health N.Olexina May 3, 2017 and asserted by the deputy of the Minister of Health O.Linchevsky May 3, 2017.

The developers of the working program of the subject "Clinical immunology and allergology":

- M.M. Popov, Doctor of medical sciences, Professor, Head of the Department of general and clinical immunology and allergology of the medical faculty of V.N. Karazin Kharkov National University;
- O.P. Kozlov, candidate of medical sciences, Associate Professor of the Department of general and clinical immunology and allergology of the medical faculty of V.N. Karazin Kharkov National University;
- O.V. Ognivenko, candidate of medical sciences, Associate Professor of the Department of general and clinical immunology and allergology of the medical faculty of V.N. Karazin Kharkov National University.

The Working program of the discipline «Clinical immunology and allergology» was considered and asserted at the meeting of the department of general and clinical immunology and allergology of the medical department of V.N. Karazin Kharkov National University, protocol № 10 from «04» 05 2020 y.

Head of Department _____ Doctor of Sciences (Medicine), T.I .Liadova
"04" 05 2020 year

The program is agreed with the guarantor of the educational (professional / scientific) program (project team leader) 222 „Medicine"
the name of the educational program

Guarantor of educational (professional / scientific) program
(project team leader) MD, full prof. Nikolenko Ye. Ya

_____ Nikolenko Ye. Ya
(Signature) (last name and first name)

Working program was reviewed and approved at a meeting of the Methodical committee of the school of medicine of V.N. Karazin Kharkiv National University, protocol № 9 «06» 05 2020 year.

Head of the Methodical committee_____Candidate of Medicine, Associate Professor,

"06" 05 2020 year

O.L. Govalenkova

EXPLANATORY NOTE

The Work program of the subject «Clinical immunology and allergology» study was made up according to the project of the standard of higher medical education of the Ukraine of the second (master's) level of the area of experience 22 «Health care» of the specialty 1201 «Medicine» for getters of educational qualification «Specialist» of the professional qualification «Doctor» discussed at the XIII-th All-Ukrainian scientific-practical Conference with international participation «Actual problems of high-quality medical education» (May12-13, 2016 Ternopil, Ukraine), and oriented training curriculum for getters of educational qualification «Specialist» of the professional qualification «Doctor» of the second (master's) level of the area of experience 22 «Health care» of the specialty 1201 «Medicine», approved by Acting Minister of Health V.Shafransky July 26, 2016 taking into account Instruction guides as for the assessment of learning activity of the students in conditions of the introduction of European credit-transfer system of educational process, approved by the Ukrainian Ministry of Health April 15, 2014; Law of the Ukraine «On Higher Education» № 2443-VIII from May22, 2018; Regulations «On the organization of educational process in V.N.Karazin Kharkov National University, approved by the decision of the Academic Council of the University» (protocol of the meeting № 5 from March 27, 2017) and put into action by the order of the University Rector (order № 0202-1/155 from April 21, 2017) in the updated version from September 5, 2018; curriculum of training getters of for getters of educational qualification «Specialist» of the professional qualification «Doctor» of the second (master's) level of the area of experience 22 «Health care» of the specialty 1201 «Medicine» at the medical faculty approved by the decision of the Academic Council and put into action by the Order of V.N.Karazin Kharkov National University rector; educational-professional program of higher education of getters of educational qualification «Specialist» of the professional qualification «Doctor» of the second (master's) level of the area of experience 22 «Health care» of the specialty 1101 «Medicine» approved by the decision of the Academic Council of V.N. Karazin Kharkov National University (protocol № 13 from October 31, 2016); the Statute of V.N. Karazin Kharkov National University approved by the Order of the Ukrainian Ministry of education and science (Order № 644 from June 13, 2018); Code of values of V.N. Karazin Kharkov National University and other regulatory documents.

The study of the discipline «Clinical immunology and allergology» is supposed to go on for X semester of the 5 academic year, general number of hours comprises 60 hours (2 credits ECTS), from which 4 hours – lectures, 30 hours – practical lessons, 26 hours – independent work of students (IWS). Distribution of hours allotted for the study of the discipline «Clinical immunology and allergology» according to the semester during which its studying takes place is presented in the following table (table. 1.).

Table 1

Academic hours for studies of the discipline «Clinical immunology and allergology»

Structural sections of the discipline	Hours				ECTS	Year and semester	Type of control
	Lectures	Practics	Self-work	Total			
Modul 1 (2 informative modules)	4	30	26	60	2	5 course, X semester	Final Modul
Total	**4**	**26**	**30**	**60**	**2**		

Notes: 1 credit of ECTS – 30 study hours; scheduling – 50%; IWS – 50%; average weekly scheduling – 3,75 hours a week (including IWS); average scheduling a week – 1,875 hours a week.

1. EDUCATIONAL DISCIPLINE DESCRIPTION

Immunology today is a rapidly evolving discipline, which in recent years has accumulated a huge number of facts that allow a new look at many problems in medicine. In today's world, without immunological knowledge, it is impossible to solve many pressing challenges facing humanity, namely: prolonging human life, fighting infections, transplantation of organs and tissues, overcoming cancer. It is established that immune mechanisms provide not only immune homeostasis of an organism, but also homeostasis in general. The immune system together with the nervous and endocrine systems regulates and controls all physiological reactions of the body, thereby ensuring its viability and viability. Clinical immunology, using the achievements of fundamental immunology, allows to achieve a better understanding of the mechanisms of human disease, improves their diagnosis and treatment. Nowadays, it is proven that in the pathogenesis of a huge number of diseases, immune mechanisms play a leading role, they can lead to both chronicity of the disease and promote rapid recovery. Therefore, immunological knowledge is needed not only by a doctor - a clinical immunologist, but also by doctors of all specialties. Today, there is no doubt that immunology has made a significant contribution to the development of medicine, biology and biotechnology. Immunology is associated with advances in the fight against infections, the possibility of blood transfusions, organ and tissue transplants, treatment, autoimmune diseases, allergies, prevention of immune conflicts during pregnancy.

Allergic diseases in recent years have become not only a medical but also a social problem, as they have become widespread and have a high share in the structure of overall morbidity. Almost every doctor is faced with allergic diseases, cases of intolerance to drugs, food, unusual reactions to chemicals in the home or professional environment, including clothing made of synthetic fabrics, jewelry, cosmetics and more.

In most cases, the whole complex of diagnostic and therapeutic allergies has to be decided by a general practitioner.

Diagnosing the allergic nature of the disease is not always an easy task. Recently, much attention has been paid to pseudoallergic reactions, which are clinically similar to allergic, but do not have an immunological mechanism in their development. They are often found among patients with drug and food intolerance and have their own features of pathogenesis, course and treatment.

The **aim of the discipline** is to acquaint students with diseases of the immune system, syndromes that manifest themselves in its pathology and dysfunction, autoimmune and allergic diseases, methods of diagnosis, treatment and prevention, with types and means of immunotherapy and pharmacotherapy.

Discipline «Clinical immunology and allergology» as a study discipline – is the science about origin, evolution and peculiarities of human pathogenic microorganisms, normal microflora of the human body, immune system and mechanisms against infectious immunity, methods of diagnostics, therapy principles and specific prophylactics of infectious diseases. «Clinical immunology and allergology» as a discipline:

а) is based on knowledge got by the students during medical biology, medical and biological physics, biological chemistry, biological and bioorganic chemistry, histology, cytology and embryology, physiology study and is integrated with these disciplines;

б) lays the foundation for study of general hygiene, epidemiology, pathological physiology, pathological anatomy, immunology and allergology, infectious diseases, internal diseases, surgical diseases and childhood diseases and other clinical disciplines by the students which suggests integration with these disciplines training and formation of skills of using these knowledge with microbiology, virology and immunology in the process of further study and in professional activity;

в) lays the foundation of studying about the immune mechanisms in the human body and prophylactics of these functions violation during medication intrusions.

1.1. THE PURPOSE OF STUDIES OF THE EDUCATIONAL DISCIPLINE

The purpose of discipline is to familiarize students with immune system diseases, syndromes, manifested in its pathology and dysfunction, autoimmune and allergic diseases, methods of diagnosis, treatment and prevention, with views and facilities immunotherapy and pharmacotherapy.

1.2. THE MAIN TASKS OF STUDIES OF THE EDUCATIONAL DISCIPLINE

The main tasks of studying the discipline «Clinical immunology and allergology» are to find and find out the modern laws of the spread of immune and allergic diseases and damage to the human body in immune and allergic diseases:

- research on ways of spreading immune and allergic diseases among different population groups,
- study of mechanisms of immune and allergic diseases,
- study the features of the clinical course of immune and allergic diseases according to disease stages,
- prevention of the development of complications in immune and allergic diseases;
- demonstration of understanding of standards of care for immune and allergic diseases,
- development of preventive measures in their workplace.

FOLLOWING THE COMPLETION OF THE COURCE THE STUDENT SHOULD:

know:

- Classification, mechanisms of primary and secondary immunodeficiencies, autoimmune and lymphoproliferative diseases, allergies, the main symptoms of their display, especially the flow, methods of diagnosis and treatment guidelines;
- The critical conditions that can occur when these diseases tactics doctor on emergency assistance to the state hospital;
- The list of diseases that can be treated on an outpatient basis and the list of diseases requiring compulsory hospitalization;
- Methods immune examination of the patient, methods of assessment of the immune system, the principles and methods of display hypersensitization and sensitization of the organism.

must master skills:

- establish a preliminary clinical diagnosis of the disease;
- make a differential diagnosis;
- diagnose urgent conditions;
- make a plan of examination of the patient;
- determine the need for special methods of research (laboratory, functional),
- organize their implementation and give them a correct interpretation;
- evaluate the results of laboratory and instrumental studies;
- determine the necessary mode of work and rest in the treatment of diseases;
- determine the necessary diet for the treatment of diseases;
- determine the nature of the treatment of the disease;
- to substantiate medical tactics and methods of treatment taking into account the individual characteristics of the patient and the general patterns of the disease;
- provide emergency medical care;
- perform medical manipulations;
- carry out sanitary and hygienic and preventive measures;
- conduct medical evacuation activities;
- generalize scientific and practical literature;
- to actively participate in the dissemination of medical knowledge among the population;
- to carry out educational work (conversations, lectures) among the population, patients and in the institutions of general medical service.

Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education, formulated in terms of learning outcomes in the Standard).

In accordance with the requirements of the standard, the discipline provides the acquisition of higher education competencies:

- *integral:*

➢ Ability to solve typical and complex specialized problems and practical problems in a professional health care activity, or in a learning process that involves research and / or innovation and is characterized by the complexity and uncertainty of conditions and requirements.

- *general:*

➢ Ability to apply knowledge in practical situations.

➢ Ability to exercise self-regulation, lead a healthy lifestyle, ability to adapt and act in a new situation.

➢ Ability to choose a communication strategy; ability to work in a team; interpersonal skills.

➢ Skills in the use of information and communication technologies.

➢ Ability to abstract thinking, analysis and synthesis, the ability to learn and be modernly trained.

➢ Definiteness and perseverance in terms of tasks and responsibilities.

➢ Ability to act socially responsible and public consciousness.

➢ The desire to preserve the environment.

➢ - special (professional, subject):

➢ Ability to process state, social, economic and medical information.

➢ Ability to conduct epidemiological and medical-statistical studies of public health.

➢ Ability to assess the impact of the environment on the health of the population (individual, family, population).

➢ Ability to assess the impact of socio-economic and biological determinants on the health of the individual, family, population.

1.3. NUMBER OF CREDITS

The study of the discipline «Clinical immunology and allergology» is supposed to go on for X semester of the 5th academic year, general number of hours comprises 60 hours (2 credits ECTS), from which 4 hours – lectures, 30 hours – practical lessons, 26 hours – independent work of students (IWS).

The educational process is organized according to the credit-module system in accordance with the implementation of the provisions of the Bologna Declaration in the higher medical education system.

1.4. TOTAL NUMBER OF HOURS

Table 2

Characteristics of the discipline	
obligatory discipline	
Full-time education	
YEAR OF TRAINING	
5-th	
semester	
X-th	
lectures	
4 h.	
Practical, seminar classes	
30 h.	
Laboratory classes	
–	
Independent work	
26 h	
including individual tasks	
-	

II. THE PROGRAM OF THE COURSE

Module 1. Clinical Immunology.

Topic 1. Subject object and purpose of clinical immunology.

The history of development. Current problems.

Topic 2. Assessment of the human immune system.

Approaches to assess the immune status. Pathogenetic principle assess immune system function. Analytical principle of individual assessment of immune subsystems. Immune status of an adult.

Topic 3. Age characteristics of the immune system of the child.

Immune status of the child. Mechanisms factors and immune response of children of all ages.

Topic 4. Immunodeficiency disease.

The main concept. Primary immunodeficiencies. Classification. The combined immunodeficiencies. Lack of humoral immunity. Lack of cellular immunity. Congenital defects of phagocyte system. The lack of the complement system. Mechanisms of development. Clinic

immune deficiency syndromes. Diagnosis of immunodeficiency, treatment. Immunodeficiency and heredity.

Topic 5. Acquired immunodeficiency.

Classification, mechanisms of development. Diagnosis, clinic, treatment. Acquired Immune Deficiency Syndrome, caused by HIV. Diagnosis of AIDS. The fight against AIDS.

Topic 6. Autoimmune disease.

Classification, mechanisms of development. Autoimmune reactions and disease. Autoantigens. Mechanisms auto immunization. The clinic, diagnosis and treatment of autoimmune diseases. Simulation of autoimmune disorders in the experiment. Diseases of immune complexes and their modeling.

Topic 7. Proliferative diseases of the immune system.

Classification. Lymphogranulomatosis (Hodgkin's disease). Combination with other diseases of the immune system. Non-Hodgkin's lymphoma. Clinical forms. Etiology, pathogenesis, therapy. Lymphoproliferative diseases caused by Epstein-Barr virus (Berkita lymphoma, infectious mononucleosis, chronic infections caused by Epstein-Barr virus). Pathogenesis, clinical manifestations, diagnosis, treatment. Sarcoidosis (a disease Beck). Etiology, pathogenesis, clinical manifestations, treatment. Diseases caused by proliferation of plasma cells (benign monoclonal hammapatiyi, plasmacytoma, macroglobulinemia, plasma cell proliferation with defective synthesis of antibodies, polyclonal hypergammaglobulinemia). Etiology, pathogenesis, diagnosis, treatment. Immunological failure due to lymphoproliferative diseases. Treatment. Amyloidosis. Properties amyloidosis. Etiology and pathogenesis. Classification, clinical picture, diagnosis, therapy. Kriopatiyi. Cryoglobulinemia forms. Etiology, pathogenesis, diagnosis, therapy.

Topic 8. Environmental Immunology.

Features of immunological reactivity people living in different climatic and geographical conditions. Seasonal and daily fluctuations of immunological reactivity. Immunological reactivity and nutrition. Microbial environment and human immunity. The impact of anthropogenic environmental factors on the immune system.

Topic 9. Fundamentals of immunotherapy.

Classification of immune agents. Principles immunotropic reception facilities. Monoclonal antibodies in clinical practice.

Module 2. Allergology.

Topic 1. Subject allergy service.

Allergic office and allergy department, their functions, tasks.

Topic 2. Mechanisms of allergies.

Allergens. Types of allergic reactions.

Topic 3. Principles of diagnosis of allergic diseases.

Allergic history. Clinical laboratory and instrumental examination of patients. Specific allergy examination, skin tests, provocation tests, studies in vitro.

Topic 4. Principles of treatment of allergic diseases.

Elimination of allergens. Pharmacotherapy. Allergenspecific immunotherapy.

Topic 5. Prevention of allergic diseases.

Topic 6. Subject atopic disease.

Atopic dermatitis, urticaria, angioedema. Etiology, pathogenesis, diagnostics, clinic, therapy.

Topic 7. Subject hay fever.

Etiopathogenesis. The clinic, diagnosis, treatment, prevention.

Topic 8. Allergic rhinitis.

Etiopathogenesis. The clinic, diagnosis, treatment, prevention. Differential diagnosis of allergic, non-topical and vasomotor rhinitis.

Topic 9. Allergic bronchitis.

Asthma. Exogenous allergic alveolitis. Etiopathogenesis. The clinic, diagnosis, treatment, prevention.

Topic 10. Anaphylactic shock.

Etiopathogenesis. The clinic, morphology, therapy, prevention.

Topic 11. Medical illness.

Etiology, pathogenesis. Drugs as allergens. Clinical manifestations of drug allergy. Psevdoalerhichni reaction. Differential diagnosis of true allergic reactions. Diagnostic medical illness. Therapy, rehabilitation, prevention.

Topic 12. Serum sickness.

Etiology, pathogenesis. Clinic and therapy serum sickness. Prevention serum reactions.

Topic 13. Postvaccinal allergic complications.

The clinic, diagnosis, treatment, prevention.

Topic 14. Food allergy.

Etiopathogenesis. Paraalerhichni and other species are not immune to food allergies. Diagnosis and treatment of food allergies. Prevention.

Topic 15. Subject insect allergy.

Etiopathogenesis. Classification of allergic reactions to contact with insects. An allergic reaction that develops as a result of the bite of insects. Etiopathogenesis. The clinic, diagnosis, treatment, prevention. Allergic reactions to insect stings. Etiopathogenesis. The clinic, diagnosis, treatment, prevention. Sensitization by inhalation or by direct contact with insects. Etiopathogenesis, clinical features, treatment, prevention.

Topic 16. Subject latex allergy.

The clinic, diagnosis, treatment, prevention.

Topic 17. Contact allergic dermatitis.

The clinic, diagnosis, treatment, prevention.

Topic 18. Pharmacological agents, the treatment of allergic diseases.

Modern pharmacological agents used for the treatment of allergic diseases. Classification. Mechanisms of action. Indications and contraindications for use, schemes, duration of courses.

III. THE STRUCTURE OF THE COURSE

Table 3

Names of content modules	Hours					
	Total	Including				
		lect	pr	lab	ind	h.w.
Module 1. Clinical Immunology.						
1. Subject object and purpose of clinical immunology.	2					2
2. Assessment of the human immune system	6		4			2
3. Age characteristics of the immune system of the child.	1					1
4. Subject Immunodeficiency disease	5.5	0.5	3			2
5. Acquired immunodeficiency.	5.5	0.5	3			2
6. Autoimmune disease.	4.5	0.5	3			1
7. Subject proliferative diseases of the immune system	2					2
8. Environmental Immunology	1					1
9. Immunotherapy	2.5	0.5				2
Total for Module 1	**30**	**2**	**13**			**15**
Module 2. Allergology						
1. Subject allergist Service	1					1
2. Mechanisms of allergy	2	0.5	0.5			1
3. Principles of diagnosis of allergic diseases	2	0.5	0.5			1
4. Principles of treatment of allergic diseases.	2	1				1
5. Prevention of allergic diseases	1					1
6. Subject atopic disease. Atopic dermatitis, urticaria, angioedema.	1		1			
7. Subject hay fever	1		1			
8. Allergic rhinitis	1		1			
9. Allergic bronchitis. Asthma	2		1			1
10. Anaphylaxis	2		1			1
11. Pharmaceutical disease	2		1			1
12. Serum sickness	2		1			1
13. Postvaccinal allergic complications.	2		1			1
14. Food allergy	2		1			1
15. Subject insect allergy.	2		1			1
16. Subject latex allergy.	2		1			1
17. Contact allergic dermatitis.	1					1
18. Pharmacological agents, the treatment of allergic diseases.	2		1			1
Total for the Module 2.	30	2	13			15
Total hours	**60**	**4**	**26**			**30**

IV. TOPICS OF THE LECTURES

Table 4

№	Topics	Number of hours
1.	Immunodeficiency disease	2
2.	Allergic diseases	2
	Total hours	4

V. TOPICS OF THE PRACTICS

Table 5

№ з/п	Topics	Number of hours
	Module 1. Clinical Immunology.	
1	Assessment of the human immune system	4
2	Primary Immunodeficiency	3
3	Acquired immunodeficiency.	3
4	Autoimmune disease.	3
	Module 2. Allergology	
5	Mechanisms of allergy	0,5
6	Principles of diagnosis of allergic diseases	0,5
7	Subject atopic disease. Atopic dermatitis, urticaria, angioedema.	1
8	Subject hay fever	1
9	Allergic rhinitis	1
10	Allergic bronchitis. Asthma	1
11	Anaphylaxis	1
12	Pharmaceutical disease	1
13	Serum sickness	1
14	Postvaccinal allergic complications.	1
15	Food allergy	1
16	Subject insect allergy.	1
17	Subject latex allergy.	1
18	Pharmacological agents, the treatment of allergic diseases.	1
	Total hours	26

VI. SELF-WORKING

Table 6

№ з/п	Topics	Кількість годин
	Module 1. Clinical Immunology.	
1	Subject object and purpose of clinical immunology.	2
2	Assessment of the human immune system	2
3	Age characteristics of the immune system of the child.	1
4	Subject Immunodeficiency disease	2
5	Acquired immunodeficiency.	2
6	Autoimmune disease.	1
7	Subject proliferative diseases of the immune system	2
8	Environmental Immunology	1

9	Immunotherapy	2
Module 2. Allergology		
10	Subject allergist Service	1
11	Mechanisms of allergy	1
12	Principles of diagnosis of allergic diseases	1
13	Principles of treatment of allergic diseases.	1
14	Prevention of allergic diseases	1
15	Allergic bronchitis. Asthma	1
16	Anaphylaxis	1
17	Pharmaceutical disease	1
18	Serum sickness	1
19	Postvaccinal allergic complications.	1
20	Food allergy	1
21	Subject insect allergy.	1
22	Subject latex allergy.	1
23	Contact allergic dermatitis.	1
24	Pharmacological agents, the treatment of allergic diseases.	1
	Total hours	30

VII. TEACHING METHODS

The course is based on knowledge obtained in the study Immunology and clinical disciplines and organizational consists of 2 sections and 28 topics.

The lecture submitted the most complex theoretical questions of discipline. The problems of classification of diseases of the immune system, mechanisms of their occurrence, principles of diagnostics, therapies - existing and those under development. Much attention is paid to communication disorders, immune system disorders in other body systems. Lectures organizationally structured to generate interest in teaching the subject and to direct students to further in-depth independent work with literature.

Practical exercises are aimed at students mastering clinical and laboratory diagnosis of diseases of the immune system, bringing clinical indiscriminately, demonstrations of patients, analysis of laboratory parameters. Students should know the etiology of the disease, common clinical manifestations, be able to set a preliminary diagnosis based on clinical differential diagnosis. Also students vidayutsya individual tasks, consultations and additional knowledge in hospital under the supervision of a teacher.

During training, each student independently performs curation of patient, together with the teacher is patient and examination plan is directly involved its clinical immunological and Inspection, developing treatment regimen.

The results of the draws with the patient's medical history, which reports on seminars.

VIII. THE CONTROL METHODS

The results of the draws with the patient's medical history, which reports on seminars. Control mastering educational material by conducting surveys and test control during practical classes. Final control is carried out in writing in the form of tests.

Passed assigned to students who learned the program practical skills mastered by the curriculum, has missed classes and has a satisfactory current estimates.

Among the basic methods of control in practical classes after self-study of new material for its consolidation are used tasks in the form of control exercises with their assessment (entrance (previous), current, borderline), which in the form of conducting can be: oral questioning (both individual and frontal), or written, or programmable, or test, or practical control. Contemporary technologies may include situational modeling (role-playing, gaming, etc.) or algorithmic / standardization technologies. Among the interactive methods are: the method of analysis of specific, problematic situations; method of group discussion; method of competing groups and the like.

At the department, the assessment of the applicant for higher medical education for work in the classroom is complex, according to the "four-point" system and includes theoretical knowledge, work at the bedside, practical skills.

Excellent - the applicant for higher medical education has deeply and steadily mastered the program material; exhaustively, consistently, competently and logically teaches it. Answers closely relate theory to practice; freely reads results of analyzes and instrumental research and solves situational problems of increased complexity; well acquainted with the basic literature and methods of research of the patient in the volume necessary for practical activity of the doctor; demonstrates the ability to relate theoretical aspects of the subject to practical health care.

Good - the applicant for higher medical education knows firmly the program material, is competent and essentially teaches it; does not allow significant inaccuracies in the answers to the questions; correctly applies theoretical provisions in solving practical questions and problems; has the necessary skills and techniques for their implementation; is able to solve light and medium difficulty situational problems; possesses laboratory and clinical research methods in excess of the required minimum; capable on the basis of the specific content of the answer is sufficient to show sufficiently logical thinking.

Satisfactory - the applicant for higher medical education knows only the basic material, but has not mastered it in detail, admits inaccuracies, insufficiently correct wording, violation of the sequence in the coverage of program material. Higher education educators are only able to solve the most difficult tasks, have only a mandatory minimum of research methods; insufficient knowledge of methodology, poor knowledge of basic principles of deontology.

Unsatisfactory - the applicant for higher medical education does not know much of the program material, makes significant mistakes, is not sure, performs practical work with great difficulty.

Having completed the full course of the envisaged program (all classes completed and a protected academic medical history, etc.), the applicant for higher medical education cannot be admitted to the final module control without appropriate knowledge and skills. The future physician should be erudite and cultured, have high moral qualities, be compassionate, compassionate, constantly abide by the rules of medical ethics and deontology.

A higher medical education applicant can work out the missed topics or translate them into a positive evaluation by the teacher during his consultations no more than 3 times during the study of the discipline, thereby scoring at least a minimum to be admitted to the total modular control.

IX. POINTS CALCULATION SCHEME

Mark in the discipline «Clinical immunology and allergology», presented by one module, is a rating and is defined as the sum of the assessments of current educational activity (in points), which is exposed at each practical lesson on the relevant topic, a point assessment for the performance of individual work by a applicant and the assessment of the final module control (in points), which is exhibited when evaluating theoretical knowledge and practical skills in accordance with the lists defined by the discipline program.

The current educational activity of applicants for higher medical education is evaluated on a 4-point (traditional) scale, using the criteria of assessment for the discipline "Infectious diseases" approved by the cycle methodical committee on therapeutic disciplines. This takes into account all types of work provided by methodical development for the planned topic.

Current control is carried out at each practical training according to the specific objectives of the topic and includes standardized forms of control of theoretical training and control of professional skills. Current control includes assessment of the initial level of knowledge (oral or written express survey, test control using test tasks of format A), assessment of the main stage of the practical training (control of professional skills during curation of patients, solving typical situational tasks), assessment of the final level of knowledge lessons (solving level III situational tasks, interpretation of laboratory and other methods of patient examination).

Evaluation of current educational activities.

During the assessment of mastering of each topic for the current educational activity, the applicant s are given grades on a 4-point (traditional) scale, taking into account the approved evaluation criteria for the respective discipline. This takes into account all types of work provided by the curriculum. Higher education providers should receive a grade on each topic. Forms of assessment of current learning activities should be standardized and include control of theoretical and practical training. Traded scores are converted into points. The maximum number of points that an applicant can earn for his / her current educational activity in the study of discipline is 200 points. The minimum number of points that an applicant must earn for his / her current educational activities to enroll in the discipline is 120 points.

Assessment of success in the discipline is given only to applicants who have enrolled all the lessons in the discipline. The mark obtained by the higher medical education applicant from the discipline is defined as the arithmetic mean of all the lessons of the discipline (by the formula given). The objectivity of evaluating the learning activities of applicants must be verified by statistical methods (the correlation coefficient between current performance and the results of final control). The maximum number of points that a higher medical education applicant can earn in the current semester for admission to final control is 120 points. The minimum number of points that an applicant must earn for the current academic activity per semester is 72 points.

The calculation of the number of points is made on the basis of the scores obtained by the applicant on the traditional scale during the study of the discipline, by calculating the arithmetic mean (CA), rounded to two decimal places. The resulting value is converted to scores on a multicolor scale as follows:

$$\frac{x = \text{CA} \times 120}{5}$$

For convenience, the table is calculated on a 200-point scale:

Recalculation of the average score for current activity into a multi-scale scale for disciplines ending in differential credit.

Table 7

4 - point scale	**200 - point scale**								
5	120	4.54	109	4.08	98	3.62	87	3.2	77
4.95	119	4.5	108	4.04	97	3.58	86	3.16	76
4.91	118	4.45	107	3.99	96	3.54	85	3.15	
4.87	117	4.41	106	3.95	95	3.49	84	3.12	75
4.83	116	4.37	105	3.91	94	3.45	83	3.1	
4.8	115	4.33	104	3.87	93	3.41	82	3.08	74
4.75	114	4.29	103	3.83	92	3.37	81	3.04	73
4.7	113	4.25	102	3.79	91	3.33	80	3	72

4.66	112	4.2	101	3.74	90	3.29	79	Less 3	not enough
4.62	111	4.16	100	3.7	89	3.25	78		
4.58	**110**	**4.12**	**99**	**3.66**	**88**	**3.22**			

Independent work of applicants, which is provided in the subject along with the classroom, is evaluated during the ongoing control of the topic in the relevant lesson.

The maximum number of points that an applicant can earn while studying the module is 200, including for the current educational activity - from 72 to 120 points, according to the results of the final module control - from 48 to 80 points.

The minimum number of points that an applicant must earn for his / her current learning activities when studying a module is 72 points and is determined by multiplying the number of topics of the module by the equivalent score for a "satisfactory" rating by the formula given.

The applicants for higher medical education must work on missing topics or pass an unsatisfactory grade on a positive evaluation by the teacher during his consultations (individual work with the applicants) no more than 2 times during the module study, thereby scoring at least a minimum to be allowed to the final modular control.

COMPLIANCE WITH THE CODE OF ACADEMIC INTEGRITY

During the study of the discipline, students of the second educational and scientific level in medicine must adhere to the Code of Academic Integrity of Kharkiv National University named after V.N. Karazina. For this purpose of performance of independent work, control works, work on offset has to be carried out individually. When doing independent work, applicants can consult with teachers and other applicants, but must do the task themselves, guided by their own knowledge, skills and abilities. References to all resources and resources used by the applicant in the performance of tasks must be clearly defined and designed in accordance with existing rules and standards. In the case of joint work with other applicants on the tasks, the applicant must indicate the degree of his involvement in the work.

LIST OF CONTROL QUESTIONS AND PRACTICAL SKILLS FOR OUTDOOR AND SUMMARY MODULAR CONTROLS OF KNOWLEDGE AND APPLICANTS' ABILITIES OF DISCIPLINE «CLINICAL IMMUNOLOGY AND ALLERGOLOGY»

Module 1. Clinical Immunology.

1. Classification of primary (innate) immunodeficiency.
2. The main clinical, morphological and laboratory data congenital immunodeficiencies.
3. Classification of secondary (acquired) immunodeficiencies.
4. Basic clinical, laboratory and morphological data acquired immunodeficiencies.
5. Differential diagnostic features primary and secondary immunodeficiency.
6. Pathogenesis of primary immunodeficiencies
7. Clinic primary immunodeficiencies.
8. The treatment of primary immunodeficiencies
9. Pathogenesis of secondary immunodeficiencies.
10. Clinic secondary immunodeficiencies.
11. Methods for detection of immunodeficiency. Principles of treatment of immunodeficiencies.
12. Imunoproliferatyvni disease classification.
13. Lymphogranulomatosis (Hodgkin's disease). Etiology, clinic, treatment.
14. Non-Hodgkin's lymphoma. Principles of classification.

15. B-cell lymphoma (lymphocytic lymphoma; plazmotsytoyidnolimfotsytarna lymphoma, lymphoma presented cells derived from germinal center; hairy cell leukemia; imunoblastna B-cell sarcoma). Diagnosis. Treatment.
16. T-cell lymphoma (lymphocytic lymphoma; fungous mycosis; imunoblastna T-cell sarcoma, lymphoma limfoepitelioyidna).
17. Histotsytarna lymphoma (lymphosarcoma). Diagnosis. Treatment.
18. Unclassified Non-Hodgkin's Lymphoma (Hodgkin limfoepitelialnogo; imunoproliferatyvne disease of the small intestine; limfomatoyidnyy granulomatosis). Diagnosis. Treatment.
19. Lymphoproliferative diseases caused by Epstein-Barr virus (Berkita lymphoma, infectious mononucleosis, chronic infections caused by Epstein-Barr virus). Diagnosis. Treatment.
20. Infectious mononucleosis. Etiology, pathogenesis, diagnosis, data of immunological research.
21. Sarcoidosis disease (Ben). Etiology, pathogenesis, diagnosis (data immunology) therapy.
22. Diseases caused by proliferation of plasma cells (benign monoclonal hammapatiyi, plasmacytoma, macroglobulinemia, plazmoklitynna proliferation of defective synthesis of antibodies, polyclonal hypergammaglobulinemia). Diagnosis. Treatment.
23. Autoimmune disease. Etiopathogenesis. Possible ways auto vaccination.
24. Clinic autoimmune diseases.
25. The mechanism of pathogenesis of autoimmune disorders.
26. Diagnosis of autoimmune diseases.
27. Treatment of autoimmune diseases.

Module 2. Allergology

28. Atopic disease. Etiology. Pathogenesis.
29. Diagnosis, clinical atopic diseases.
30. Treatment of atopic diseases.
31. Pharmaceutical disease. Etiology, pathogenesis, features.
32. Clinical manifestations of medical illness.
33. Allergoid reaction. Differential diagnosis of true allergic reactions.
34. The medical diagnosis of the disease. Etiology, pathogenesis, features.
35. Serum sickness. Etiology, pathogenesis.
36. Clinic and therapy serum sickness.
37. Anaphylactic shock. Etiopathogenesis. The clinic, morphology, therapy, prevention.
38. Food allergy. Etiopathogenesis.
39. Paraalerhichna and other species are not immune to food allergies.
40. Methods of diagnosis and treatment of food allergies. Prevention and prognosis.
41. Allergic history and its role in the diagnosis of allergies.
42. Allergic service.
43. Allergic office and its functions.
44. Allergic department and its functions.
45. The role of immunological diagnostic center, it features equipment.
46. Functional units allergy department and office equipment.
47. Insect allergy. Etiopathogenesis.
48. Classification of allergic reactions to contact with insects.
49. Allergic reactions that develop as a result of the bite of insects.
50. Clinic allergic reactions to insect stings develop.
51. Diagnostics, therapy, prevention of allergic reactions that develop on uzhalyuvannya insects.
52. Sensitization by inhalation or by direct contact with insects. Etiopathogenesis.
53. Clinic allergic reactions developing inhalation or by direct contact with insects.
54. Diagnosis, treatment and prevention of allergic reactions developing inhalation or by direct contact with insects.

55. Postvaccinal allergic complications.
56. Hay fever. Etiopathogenesis.
57. Clinic of the hay fever.
58. Diagnosis of the hay fever.
59. Treatment and prevention of hay fever.
60. Allergic rhinitis. Etiopathogenesis.
61. Clinic allergic rhinitis.
62. Diagnosis of allergic rhinitis.
63. Treatment and prevention of allergic rhinitis.
64. Differential diagnosis of allergic, netopichnoho and vasomotor rhinitis.
65. Principles of diagnosis of allergic diseases.
66. Basics of differential diagnosis of allergic and pseudo-allergic reactions.
67. Distribution of allergic diseases and their etiology.
68. General principles of treatment of allergic diseases.
69. Treatment of allergies in the acute stage of the disease.
70. Treatment of allergies in remission.
71. Causal therapy allergies.
72. Pathogenetic and symptomatic therapy of allergies.
73. Immunogram healthy people.
74. Basic rules of interpretation immunogram.
75. Classification immunogram.
76. Immunogram in the acute period of inflammation.
77. Immunogram chronic inflammatory process.
78. Immunogram relapse during the inflammatory process.
79. Immunogram the absence of inflammation.
80. The difficulty in interpretation immunogram clinic.
81. Strengthening immunological parameters under the influence of various factors.
82. Clinical characteristics altered certain parameters imunogramm (leukocytes, lymphocytes, T-lifotsytiv, B-lymphocytes, cytotoxic cells).
83. Immunogram at imunoproliferatyvnyh diseases.
84. Immunogram with primary immunodeficiencies.
85. Immunogram at vorynnyh immunodeficiencies.
86. Immunogram with atopy.
87. Immunogram in autoimmune processes.
88. General principles of diagnostics of immunopathological states.
89. Immunological tests first level.
90. Immunological tests second level.
91. Specific immunological tests used in clinical immunology and allergy. Principles of resolution.
92. Scheme of emergency care to adults in case of anaphylactic shock.
93. The scheme of emergency assistance to children in the event of anaphylactic shock.
94. The main therapeutic errors that contribute to deaths of patients at their anaphylactic shock.
95. Arrangements for the prevention of anaphylactic shock drugs.

X. RECOMMENDED LITERATURE

BASIC LITERATURE

1. G.N. Drannyk, A.S. Prylutskyy Clinical Immunology and allerholohyya, 2009. - 620 p.
2. N.N. Popov, V.F. Lavrov, E.N. Soloshenko Clinical Immunology and allerholohyya: Uchebnoe posobye / M .: "REYNFOR", 2004.- 624 p.
3. M.M. Popov, E.N. Soloshenko, V.H. Chernuskyy Allergic disease management for practitioners KNU. VN Karazin, 2011. - 291 p.

4. L.V. Kovalchuk L.V. Hankovskaya, L.Y. Meshkova Clinical Immunology and allerholohyya with the basics GENERAL Immunology: Textbook - M .: HEOTAR - Media, 2009. - 659 p.
5. Allerholohyya and Immunology. Natsyonalnoe guidance / Under the editors RM Khaitov, NI Ylynoy. - M .: HEOTAR- Media, 2009. - 659 p.
6. Immunology and Allergology. Tsvetnoy atlas / Under the editors A.A.Vorobeva, AS Bykova, A.V.Karaulova. - M .: Practical Medicine, 2006. - 287 p.
7. V.E. Kazmyrchuk, L.V. Kovalchuk, D.V. Maltsev Clinical Immunology and Allergology. - Kiev .: Phoenix, 2009 - 522 p.
8. R.M.Haytov Immunology: Textbook - 2nd edition. - M .: HEOTAR - Media, 2011. - 528 p.
9. R.M. Khaitov, A.A. Yarylyn, B.V. Pinegin Immunology, Atlas. - M .: HEOTAR - Media, 2011. – 624 p.

ADDITIONAL LITERATURE

1. Immunology. Practice / Ed. L.V. Kovalchuk, G.A.Yhnatevoy, L.V. Hankovskoy. - M .: HEOTAR - Media, 2010 - 176 p.
2. I.V. Kondratenko, A.A. Bolohov Pervychnie immunodeficiency. - M .: Medpraktyka - M .:, 2005 - 230 p.
3. Treatment allergic deseases in children / Ed. I.I. Balabolkin. - M .: MYA, 2008. - 348 p.
4. A. A. Mikhailenko, V.I. Konenkova, G.A. Bazanov, V.I. Pokrovsky. Guide to klynycheskoy Immunology, allerholohyy, ymmunohenetyke and ymmunofarmakolohyy (for doctors GENERAL practices), Volume 1. - M., 2005. - 511 p.
5. R.M. Khaitov, G.A. Ignatiev, I.G. Sydorovych Immunology. Norm and pathology. - M .: Medicine, 2010. - 750 p.
6. A.D, Tsaregorodtsev, V.A. Tabolin Guide to farmakotorapyy in pedyatryy and detskoy surgery. Farmakoterapyya allerhycheskyh zaolevanyy and pervychnih ymmunodefytsytov in children / Ed .. A.N.Pampuri. - M .: Medpraktyka, 2006. - 277 p.
7. E.Chapel, M.Heyny, S.Mysbah, N.Snovden klynycheskoy Fundamentals of Immunology. - 5th ed. - M .: HEOTAR - Media, 2008. - 416 p.
8. A.A. Yarylyn Immunology. - M .: HEOTAR - Media, 2010. - 748 p.
9. Guidelines on “Principles of treatment of secondary immunodeficiencies,” KNU, Kharkov – 2012.
10. Guidelines on “Diagnosis and treatment of autoimmune diseases,” KNU, Kharkov – 2012.
11. Methodological study for teachers to workshops from the “Allergic disease”.
12. Guidelines for “diagnosis of allergic diseases,” KNU, Kharkov – 2012
13. Guidelines on “Methods of sensitization and manifestation allergization body,” KNU, Kharkiv – 2008.
14. Guidelines “Principles of treatment of allergic diseases” KNU, Kharkiv, 2012.

INFORMATION RESOURCES

1. Textbooks and Tutorials.
2. Educational and methodical materials of the department.
3. Visual materials for practical classes (tables, diagrams, algorithms, stands, albums, etc.).
4. Educational portal of higher education: http://www.osvita.org.ua/.