



Syllabus Clinical Immunology and Allergology

1. General Information	
Faculty	Medical No 2
Programme	22 Healthcare, 222 General Medicine, the second (master) level of higher education
Subject	“Clinical immunology and Allergology” OK 34 https://new.meduniv.lviv.ua/kafedry/kafedra-klinichnoyi-imunologiyi-ta-alergologiyi/
Department	Department of Clinical Immunology and Allergology 70010, Lviv, 69_b Pekarska str., +38 (032) 2756142; kaf_immunology@meduniv.lviv.ua
Head of Department	prof. Chopyak Valentyna, MD chopyakv@ukr.net
Year	VI
Semester	2021-2022 academic year
Type of the Subject	optional
Professors	prof. Chopyak Valentyna, PhD, MD (chopyakv@ukr.net) prof. Havrylyuk Anna, PhD (ahavryluyk@meta.ua) assoc. prof. Lishchuk-Yakymovych Khrystyna, PhD (k_yakymovych@ukr.net) assoc. prof. Zubchenko Svitlana, PhD (svitlana_zu@meta.ua) assist. prof. Horbal Nataliya, PhD (n.horbal@ukr.net) assist. prof. Tolokh Olga (tos2004@ukr.net) assist. prof. Lomikovska Marta, PhD (ydmarta79@gmail.com)
Erasmus	No
Responsible Syllabus	assoc. prof. Lishchuk-Yakymovych Khrystyna, PhD (k_yakymovych@ukr.net)
Credits ECTS	1
Hours	Total — 30 h; Lectures – ; Practical classes – 18 h; Individual work – 12h.
Language of Instruction	English
Consultations	According to the schedule
Clinical Base	Department of Clinical Immunology and Allergology, 70010, Lviv, 69_b Pekarska str., +38 (032) 275 61 42; Public Non-Commercial Enterprise of the Lviv Regional Council “Lviv Regional Clinical Diagnostic Center”; working hours: Monday – Friday 8:00 - 20:00.

2. Brief review of the subject

According to the Order of Danylo Halytsky Lviv National Medical University № 129-3 dated 13 Jan 2020 “Implementation of the curriculum for training specialists of the II (Master’s) level of field of knowledge 22 Health care, 222 General Medicine, the second (Master’s) level of higher education, V year of study”, educational discipline “Clinical Immunology and Allergology” is recommended for study at the second (Master’s) level of higher education, field of knowledge 22 "Health care" specialty “222 “Medicine”.

Discipline “Clinical Immunology and Allergology” is aimed at training specialists, who possess deep theoretical and practical knowledge, competencies and skills, high professional qualification. The syllabus includes learning composition and functions of the immune system, mucous membranes, immune diseases, allergic diseases, their diagnostics, treatment and prophylaxis, as well as COVID-19 and vaccination. The discipline provides fundamentals of healthy lifestyle, as well as nonspecific and specific prevention.

3. Aim of the Subject

1. The studying purpose of the discipline "Clinical Immunology and Allergology" is the formation of systemic medical knowledge, skills for diagnosis of immune and allergic diseases. It is anticipated that knowledge of the basic clinical signs of immune and allergic diseases will enable the general practitioner to diagnose such diseases in time and direct the patient to a clinical immunologist or allergist. Awareness of the manifestations of sexually/blood transmitted diseases (HIV infection, hepatitis B and C, papillomavirus and herpetic (HSV 1/2, EBV, CMV, HHV6 infections, etc.) is an important part of the professional training of a general practitioner, and knowledge of preventive measures against these diseases is the responsibility of the physician of any specialty.

2. The main tasks of the discipline "Clinical Immunology and Allergology" is the study of:

- the basics of clinical immunology (cells and organs of immune system, anatomical and microscopic structure of mucous membranes, physiology and pathology of the skin, the basis of clinical pharmacology for the treatment of immunological and allergic diseases);

- main clinical and diagnostic signs of widespread immunological and allergic diseases, their prevention and treatment;

- features of the clinical course of some infections (including papillomavirus and herpetic (HSV 1/2, EBV, CMV, HHV6 infections, etc.), HIV-infections and COVID-19.

- Acquisition by the student of knowledge and professional skills of the differential diagnosis of the most common diseases based on immunopathological syndromes, dispensary monitoring of patients with primary and secondary immunodeficiencies in an outpatient setting and emergency care for the most common acute allergic conditions based on approved protocols.

- Formation of the ability to use knowledge, skills, abilities and understanding to solve typical problems in doctor daily activity in the field of health care, which scope is provided by certain lists of syndromes and symptoms of diseases, emergencies, physiological conditions.

The ultimate goals of the discipline

The ultimate goals of the discipline "Clinical Immunology and Allergology" are based on the educational goals defined in the educational-professional program (OPP). They are defined as follows:

1. To determine the etiological and pathogenetic factors of the most common

immune-dependent diseases in adults and children.

2. To classify and to analyze their typical clinical picture

3. To make a diagnostic plan and to analyze the laboratory findings and

instrumental examinations of immunocompromised individuals, as well as to demonstrate the ability of the treatment, rehabilitation and prevention of the most common immune-dependent diseases.

4. To diagnose and to provide emergency care in acute allergic conditions.

5. To demonstrate mastery of deontological principles of a medical specialist and the principles of professional subordination in the medicine.

3. **Competence and learning outcomes**, to the formation of which the discipline contributes (the relationship with the normative content of the training of higher education graduates, formulated in terms of results of study in the Standard of Higher Education).

In accordance with the requirements of the Standard of Higher Education, discipline ensures students' acquisition of **competences**:

- *integral*:

The discipline provides ability to apply acquired general and special competencies for solving complex tasks of professional activity and practical problems in health care in a certain position, application of which is determined by a list of syndromes and symptoms of diseases, emergencies, physiological conditions and diseases, which require special tactics of patient management; laboratory and instrumental investigations,

medical manipulations; issues of occupational, forensic and military expertise and/or implementation of innovations.

-general (GC):

GC 1. The ability to abstract thinking and analysis;

GC 2. The ability to learn and possess modern information and communication technologies.

GC 3. Ability to apply knowledge in practical situations.

GC 4. Knowledge and understanding of the subject area and understanding of the professional activities.

GC 5. Ability to adapt and act in a new situation.

GC 6. Ability to take a reasonable decisions

GC 7. Ability to work in a team.

GC 8. Interpersonal skills.

GC 9. Ability to communicate in the state language both orally and in writing.

GC 11. Skills in the use of information and communication technologies.

GC 12. Definiteness and perseverance in terms of tasks and responsibilities.

GC 13. The ability to act socially responsibly and consciously.

GC 14. The desire to save environment.

GC 15. Ability to act in accordance with ethical regulations.

- special (professional, substantive) (SC):

SC 1. Patient interviewing skills, skills of examination of the patient.

SC 2. Ability to determine the required list of laboratory and instrumental research and evaluation of their results.

SC 3. Ability to establish a preliminary and clinical diagnosis of the disease.

SC 4. Ability to determine the required mode of work and rest during treatment diseases. SC 5.

Ability to determine the principles of nutrition in treatment diseases.

SC 6. Ability to determine the principles and nature of treatment of diseases. SC 7.

Ability to diagnose emergencies.

SC 8. Ability to determine the tactics of emergency medical care. SC 9.

Skills in providing emergency medical care.

SC 11. Skills of medical manipulations.

SC 13. Ability to conduct sanitary and preventive measures.

SC 14. Ability to plan and carry out preventive and anti-epidemic measures against infectious diseases.

SC 15. Ability to determine the persons subject to dispensary supervision tactics. SC 16.

Ability to conduct an efficiency examination.

SC 17. Ability to keep medical records.

SC 20. Ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.

4. Preliminary requirements

the discipline "Clinical Immunology and Allergology":

- is based on the knowledge, previously acquired by masters, in anatomy, histology, normal and pathological physiology, medical biology, microbiology and other morphological disciplines and it is integrated with these disciplines;

- is an important component of further master study of clinical disciplines providing integration of teaching with the above disciplines and forming abilities to apply dermatology knowledge in further education and in professional activities;

- is associated with other medical specialties: with infectology (STI, transmissible viral and parasitic diseases of the skin and skin appendages), toxicology (toxicodermia, pseudoporphyria and other toxic reactions), hematology (skin manifestations of polycythemia), rheumatology (systemic collagenosis, vasculitis), endocrinology (skin changes in diabetes mellitus, hypothyroidism, hyperthyroidism), oncology (melanomas and other tumors of the skin and its appendages), with neurology (neurodermatitis, genetically caused neuro-skin syndromes), allergology (Lyell's syndrome, Stevens-Johnson syndrome, urticaria, angioneurotic edema and other allergic reactions to drugs), dental disciplines (cheilitis, precancerous and cancer oral mucous membranes), psychiatry (trychotilomania, pathomimia).

Co-requisites:

1. therapy,
2. internal medicine
3. infectious diseases
4. pediatrics
5. dermatology
6. surgery
7. obstetrics and gynecology

Postrequisites:

1. therapy,
2. internal medicine
3. infectious diseases

4. pediatrics
5. dermatology
6. surgery
7. obstetrics and gynecology

5. Programme Results (PR) of the Course

PR1. To collect data on the patient's complaints, history of disease, history of life (of the patient or his relatives, guardians, etc.), to assess the general condition of the patient, to provide the physical examination.

PR2. To evaluate information about the diagnosis in the hospital, using a standard procedure, using the analysis of the results of objective examination of the patient and based on the results of laboratory and instrumental studies.

PR3. To be able to identify and record the leading clinical symptom or syndrome. Встановлювати найбільш вірогідний або синдромний діагноз захворювання. Assign laboratory and / or instrumental examinations, consultations of narrow specialists to confirm the clinical diagnosis. To perform differential diagnosis. To be able to establish a preliminary and clinical diagnosis of the disease.

PR4. To determine the necessary mode of work and rest in the treatment of the disease. PR5. To determine the necessary medical nutrition in the treatment of the disease.

PR6. To identify principles of treatment (conservative, surgical).

PR7. To determine the tactics of providing emergency medical care under any circumstances. PR8. To provide emergency medical care.

PR11. To perform medical manipulations.

PR12. To form dispensary groups of patients; groups of healthy patients that are subjected to dispensary monitoring among listed population. To perform a system of anti-epidemic and prophylactic measures of primary medical and sanitary aid to the population. To perform a system of measures of primary prophylaxis within medical and sanitary aid to the population. To organize conduction of measures of secondary and tertiary prophylaxis among listed population.

PR13. Planning measures to prevent the spread of infectious diseases. Carrying out detection and early diagnosis of infectious diseases; primary anti-epidemic measures in the center of an infectious disease. Identifying risk groups, risk areas, time of risk, risk factors and carry out epidemiological analysis of infectious diseases of the population.

PR14. To determine tactics of examination and secondary prophylaxis of patients that are subjected to dispensary monitoring; tactics of examination and primary prophylaxis of healthy individuals that are subjected to dispensary monitoring; to calculate and administer necessary nutrition products to infants.

PR15. To determine presence and degree of restrictions of life activity, type, degree and duration of disability with arrangement of appropriate documents.

PR16. Preparing an annual report on personal production activities; keeping medical records of the patient and the population.

PR17. To conduct screening for detection of the most common infectious diseases; to assess morbidity rates, integral values of health; to reveal risk factors of occurrence and onset of diseases; to form risk groups among the population. To determine a source and/or site of relevant information depending on its type; to receive necessary information from a determined source; to process and analyze obtained information.

PR18. To determine negative environmental factors; to analyze health condition among certain population; to determine the presence of a connection between environmental condition and health condition among certain population. To analyze morbidity rate among the population, detecting risk groups, risk territories, risk time, risk factors. To assess influence of social, economic and biological determinants on health of an individual, family and population.

PR21. Forming goals and determining the structure of personal activities.

PR22. Adhering to a healthy lifestyle, using of the techniques of self-regulation and self-control. PR23. Being aware of and guided in their activities by civil rights, freedoms and responsibilities, raising the general educational and cultural level.

PR24. Adhering to the requirements of ethics, bioethics and deontology in their professional activities.

PR25. Organizing the necessary level of individual safety (own and persons cared for) in case of typical dangerous situations in the individual professional field.

List of Programme Results

<p>The code is created when filling in the syllabus (category: Kn - knowledge, Ab - ability, C - competence, AR - autonomy and responsibility)</p>	<p>Programme Results determine that the student must know, understand and be able to perform, after completing the discipline. Programme Results follow from the set learning goals. To enroll in the discipline, it is necessary to confirm the achievement of each learning outcome.</p>	<p>Matrix of the Program Results (PR) Code in the Higher Education Standard</p>
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Kn -1	To know the current law rules and regulations of the relationship doctor – clinical immunologist/allergist - patient.	<i>PR1,2,19,20</i>
Kn -2	To know methods of examination of immunological/allergic patients; stages of diagnostic process.	<i>PR1,2,19,20</i>
Kn -3	To know age-related peculiarities of the immune system and mucosa composition in adulthood and childhood, to learn immune system embryogenesis, anatomic and physiological peculiarities of the cells and organs of immune system in different age groups, risk factors, which affect the development of immune response diseases.	<i>PR1, PR2, PR3</i>
Kn -4	To know theoretical fundamentals of immunological signs in immune system damage.	<i>PR1, PR3</i>
Kn -5	To know special immunological and allergic methods of examining patients (palpation, dermatography, skin allergy tests); laboratory methods of diagnostics (general and special).	<i>PR1, PR2, PR3, PR13</i>
Kn -5	To know basic principles and methods of treating patients with immunological and allergic pathologies, criteria of cure, required set of recommendations, types and degrees of disability of patients with immunological and allergic diseases.	<i>PR4, PR5, PR6, PR15</i>
Kn -6	To know basic methods of topical therapy in clinical immunology and allergy; treatment of allergic dermatosis in adults and children by means of health resort treatment and physiotherapeutic (d'Arsonvalization, phototherapy, ultrasound therapy, cryotherapy) methods.	<i>PR4, PR5, PR6</i>
Kn -7	To know basic signs, diagnostic methods and action algorithms in emergency conditions in clinical immunologist and allergologist practice.	<i>PR7, PR8</i>
Kn -8	To know fundamentals of preventing immunological and allergic diseases; groups of patients with allergic and immunodeficiency diseases, who should be monitored in dispensaries.	<i>PR12, PR13, PR18</i>
Kn -9	To know methods and technique of diagnostic and therapeutic manipulations, which can be used in a clinical immunologist's and allergologist's practice.	<i>PR11</i>
Kn -10	To know structure of clinical immunology and allergology service. To assess level of hazard while performing professional tasks. To know necessary knowledge in the field of information technologies, used in professional activity in the	<i>PR16, PR17</i>

	Ukrainian and foreign languages.	
Kn -11	To know methods of applying knowledge in detecting, setting and solving problems of professional activity.	PR21
Kn -12	To know moral and ethical principles of a medical specialist and rules of professional subordination.	PR24
Kn -13	To be able to assess level of hazard in performing professional tasks.	PR25
Kn -14	To be able to adjust and act in a new situation. To be able to work independently, demonstrate skills, set and solve problems based on civil rights, duties and continuing improvement of a professional level.	PR22, PR23
Ab -1	To be able to record and interpret complaints, anamnesis of diseases and life, to conduct physical examination (using allergy tests) of respective patients.	PR1
Ab -2	To know a technique of conducting diagnostic tests (determination of psoriatic phenomena etc.), collection of material for further laboratory study; to assess and interpret the obtained results.	PR2, PR3
Ab -3	To be able to apply topical remedies and topical drugs in patients with allergic diseases	PR4, PR5, PR6
Ab -4	To be able to provide first aid in emergencies, which can occur in a clinical immunologist's and allergologist's practice.	PR7, PR8
Ab -5	To know methods and technique of conducting diagnostic and therapeutic manipulations, which can be used in a clinical immunologist's and allergologist's practice.	PR11
Ab -6	To know how to perform early diagnostics of skin/allergic and immunodeficiency diseases, be able to plan and implement measures to prevent the spread of these diseases.	PR12, PR13, PR14, PR17
Ab -7	To know how to record documents necessary for a clinical immunologist's and allergologist's practice (case history, patient's medical chart, medical disability certificate, reports etc.).	PR15, PR16
Ab -8	To have necessary knowledge of information technologies, used in professional practice in the Ukrainian and foreign languages.	PR17
Ab -9	To be able to perform professional practice following safety rules.	PR25, PR22
Ab -10	To be able to apply knowledge in detecting, setting and solving problems of professional	PR21, PR23

	activity.	
Ab -11	To follow moral and ethical principles of a young specialist in medical practice and rules of professional subordination.	PR24
Ab -12	To be able to conduct analysis of professional information, make sensible decisions, acquire contemporary knowledge.	PR21, PR2, PR24
Ab -13	To be able to perform professional practice, which requires innovations and integration of knowledge.	PR21, PR23, PR24
Ab -14	To follow moral and ethical principles of a medical specialist and rules of professional subordination in practical activity.	PR21, PR23, PR24
C-1	Ability of abstract reasoning and analysis; ability of studying and understanding new information and communication technologies.	PR23, PR16
C-2	Ability of search, elaboration and analysis of information from different sources in the Ukrainian and foreign languages.	PR17, PR16
C-3	Ability of acting according to ethical rules, working in a team with colleagues and patients.	PR24
C-4	Skills of performing safe activity, ability of assessing and providing quality of conducted work.	PR25
C-5	To determine etiological and pathogenic factors of appearance and further clinical course of the most common human allergic and immunedependent diseases.	PR1, PR2, PR3
C-6	To describe dermatological conditions and refer a patient with signs of allergic and immunedependent diseases to a specialist.	PR1, PR2, PR3
C-7	To prescribe laboratory and/or instrumental examination, perform differential diagnostics of dermatoses.	PR1, PR2
C-8	To determine basic principles of treating patients according to their diagnosis.	PR4, PR5, PR6
C-9	To determine tactics of management of patients with allergic and immunedependent diseases.	PR4, PR5, PR6
C-10	To administer proper topical and systemic therapy.	PR4, PR5, PR6
C - 11	Organization of work on prophylaxis of allergic and immunological diseases in different dispensary groups.	PR12, PR13, PR14, PR17, PR18
C - 12	To establish proper relationships to achieve goals.	PR1, PR2, PR3, PR4, PR5, PR6
C - 13	To form communication strategy in professional activity.	PR24, PR23,
C - 14	To establish relationships with subjects of practical activity.	PR23

AR -1	To take responsibility for following valid legal standards of relationships doctor- clinical immunologist and allergologist → patient.	<i>PR1, PR24, PR23</i>		
AR -1	To take responsibility for accuracy of anamnesis record, conduction of examination and detection of the main risk factors for development of allergic and immunodependent diseases.	<i>PR1, PR2, PR3, PR17, PR18</i>		
AR -2	To be responsible for accuracy of performing stages of examination of a immunological patient and conduction of additional examination methods.	<i>PR2, PR3</i>		
AR -3	To be responsible for having knowledge at an adequate level concerning basic principles and methods of treating patients with allergic and immunodependent diseases. To have knowledge of classification of dermatological and functional equipment.	<i>PR4, PR5, PR6, PR7, PR8</i>		
AR -4	To be responsible for having knowledge at an adequate level concerning basic principles and methods of prophylaxis and prevention of spread of skin and venereal diseases.	<i>PR12, PR13, PR14, PR17</i>		
AR -5	To be responsible for timely acquiring of knowledge.	<i>PR1, PR23, PR24</i>		
AR -6	To be responsible for continuing development with high level of autonomy.	<i>PR1, PR23</i>		
AR -7	To be responsible for substantiation of decisions.	<i>PR13, PR14,</i>		
AR -8	To be responsible for quality of professional tasks performed in a new situation.	<i>PR1, PR2, PR3, PR4, PR5, PR6, PR7, PR8</i>		
AR -9	To be responsible for following moral and ethical principles of a medical specialist and rules of professional subordination.	<i>PR1, PR2, PR24</i>		
6. Form and scope of the course				
Course format (full-time or part-time)	Full-time			
Type of classes	Q-ty of hours		Number of groups	
Practical classes (P)	18			
Self educational work (SW)	12			
7. Topics and content of the course				
Class type and code	Topic	Class content	Educational result code	Professor

P-1	<p>Basic immunopathological syndromes. Immunodiagnostics and immunotherapy in oncology. Immunology of reproduction. Immune-dependent male and female infertility</p>	<p>Stages of formation of clinical immunology and allergology as a separate clinical discipline. The anatomy of immune system and oral mucosa; Histological structure of skin, its appendages and oral mucosa; nature of functional properties of immune system, its age characteristic;</p> <p><u>Passive cellular immunotherapy</u> Lymphokine-activated killer (LAK) cells Tumor-infiltrating lymphocytes Genetically modified T cells</p> <p><u>Passive Humoral Immunotherapy</u> <u>Active Specific Immunotherapy</u> Peptide-based vaccines DNA vaccines Autochthonous tumor cells Allogeneic tumor cells</p> <p><u>Immunotherapy and Targeting Inhibitors of Immune Responses</u> Cytotoxic T-lymphocyte-associated protein 4 (CTLA-4) PD-1 and PD ligand 1 and 2 inhibitors Combinations of immune checkpoint blockers</p> <p><u>Nonspecific Immunotherapy Interferons</u></p>	<p><i>PR1, PR2, PR3, PR4, PR5, PR6, PR11, PR12, PR15, PR17, PR18, PR21, PR22, PR23, PR24</i></p>	<p>According to the Schedule</p>
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		Immune/immunological infertility and Antibody formation. Anti-sperm antibodies. Role of seminal fluid in female immune infertility. Auto-immune aspects in infertility. Mucosal immunity of the female genital tract		
P-2	<p>Therapeutic use of vaccines in allergology, oncology, reproductive medicine.</p> <p>Immunodiagnostics, immunotherapy and prevention of viral COVID-19 infection.</p> <p>Biological therapy in the treatment of organ - specific and systemic autoimmune diseases</p>	<p>Biotechnology is a modern way of creating effective drugs.</p> <p>Approaches to the use of monoclonal antibody drugs in adult and pediatric rheumatology practice.</p> <p>The use of monoclonal antibodies in the treatment of Inflammatory bowel disease (inc. Crohn's disease).</p> <p>Biosimilars: definitions, advantages and disadvantages.</p> <p>Manifestations of immunogenicity of immunobiological drugs.</p> <p>Ways of influence of biosimilars on pathological process at autoimmune diseases.</p> <p>Immunoglobulins for intravenous administration in the treatment of autoimmune diseases.</p> <p>Ways of SARS-CoV-2 infection and anti-epidemic quarantine measures</p> <p>Symptoms of COVID-19</p> <p>Features of COVID-19.</p> <p>Diagnosis of SARS-CoV-2 and COVID-19.</p> <p>Is there a specific etiotropic therapy for coronavirus infection?</p> <p>Types of vaccines against SARS-CoV-2</p>	<p><i>PR1, PR2, PR3, PR4, PR5, PR6, PR11, PR12, PR13, PR14, PR15, PR21, PR22, PR23, PR24</i></p>	According to the Schedule

P-3	<p>Immunosuppressive therapy of posttransplant patients.</p> <p>Immunodependent post-COVID complications.</p> <p>Drug allergy</p>	<p>Positive and negative immunological memory.</p> <p>Prophylactic and therapeutic effect of vaccines</p> <p>Allergic IgE-dependent diseases: modern approaches to their treatment</p> <p>Immune system and carcinogenesis. Basic antitumor immune mechanisms</p> <p>Basic principles of laboratory diagnosis of allergy and cancer patients before and after vaccine treatment</p> <p>Epidemiology, structure of SARS-CoV-2 virus infection</p> <p>Pathogenesis of COVID-19</p> <p>Symptoms of COVID-19</p> <p>COVID-19 treatment</p> <p>COVID-19 complications</p> <p>Definition and triggers of drug allergy.</p> <p>Evaluation of patients with suspected drug allergy</p> <p>Physical examination</p> <p>Diagnostic of drug allergy/ tests in vivo and in vitro/</p> <p>Patients management</p>	<p><i>PR1, PR2, PR3, PR4, PR5, PR6, PR11, PR13, PR14, PR15, PR16, PR21, PR22, PR23, PR24</i></p>	<p>According to the Schedule</p>
SW -1	<p>Herpetic immunotropic infections: clinical parameters, diagnosis, immunotherapy</p>	<p>General Biology of Human Herpesviruses:</p> <p>Alpha herpesviruses;</p> <p>Beta herpesviruses;</p> <p>Gamma herpesviruses.</p> <p>Clinical Manifestations:</p> <p>Herpes Simplex Viruses</p> <p>Varicella-Zoster Virus</p> <p>Cytomegalovirus</p> <p>Human Herpesvirus 6 and 7</p> <p>Human Herpesvirus 6 and 7</p>	<p><i>PR21, PR23</i></p>	<p>According to the Schedule</p>
SW -2	<p>Drug allergy: diagnosis and treatment</p>	<p>Triggers of drug allergy.</p> <p>Evaluation of patients with suspected drug allergy</p> <p>Diagnostic of drug allergy/ tests in vivo and in vitro/</p> <p>Patients management</p> <p>Modern methods of therapy in allergology.</p>	<p><i>PR4, PR5, PR6</i></p>	<p>According to the Schedule</p>

SW -3	Immunodiagnosis and immunotherapy in patients with oncopathology	<p>How does immunotherapy work against cancer?</p> <p>What are the types of immunotherapy?</p> <p>Which cancers are treated with immunotherapy?</p> <p>What are the side effects of immunotherapy?</p> <p>How is immunotherapy given?</p> <p>How often do you receive immunotherapy?</p> <p>How can you tell if immunotherapy is working?</p> <p>What is the current research in immunotherapy?</p> <p>How do you find clinical trials that are testing immunotherapy?</p>	<i>PR1, PR3, PR4, PR5, PR6, PR7, PR8, PR12, PR13, PR14, PR15, PR17, PR18, PR21, PR22, PR23, PR24</i>	According to the Schedule
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Traditional teaching methods are used in studying the discipline “Clinical Immunology and Allergology”: verbal, visual, practical; as well as methods of educational and cognitive activity: explanatory and illustrative, reproductive, problematic methods, partially exploratory, research method. The methods of control, which are teaching methods, include lecturer’s control, self- control, mutual control, self-correction and mutual correction.

Multimedia and tables available at the department are used during lectures to transfer and help acquire necessary knowledge.

Textbooks, methodological guides for Masters, methodical materials on the class theme, handouts, moulages, microsections, demonstration of slides, and certain means of instrumental diagnostics for development of practical skills, situational tasks are used during practical classes to transfer and help acquire necessary knowledge. Interactive technologies are used during every class: educational films, photo tasks, quizzes on each theme etc.

Masters’ individual work includes preparation for practical classes and learning of certain themes, which constitute a part of practical classes or are referred to self-study section. Therefore, educational textbooks, methodological guides etc. have been compiled.

All necessary materials (theses and presentations of lectures, methodological guides, and standardized documents) are presented on an information platform of Danylo Halytsky Lviv National Medical University – MISA.

8. Verification of results

Continuous control

Continuous control is carried out during each practical according to the specific objectives for each topic. The learned topic of each thematic module covered during semester is assessed with marks per the traditional 4-graded scale: 5-points, 4-points, 3-points, 2-points. Assessment forms of continuous educational activity must be standardized and include control of theoretical and practical training. The learned topic of each thematic module covered during semester is assessed with marks per the traditional (national) 4-graded scale, which are then converted into points. It takes into account all types of work provided by the discipline program. The student should

receive an assessment from each topic for further conversion of marks into points on a multi-point (200-point) scale.

Types of educational activities of students according to the educational schedule:

a) practical classes,

b) individual students work (SW) with teachers' consultations. Thematic plans of lectures, practical classes, ISW ensure the implementation in the educational process of all topics that are part of the content of the program. The lecture course consists of 3 lectures. The topics of the lecture course reveal the problematic issues of the relevant sections of children's infectious diseases.

Code of the results of studies	Code of the class type	Method of verifying of the results of studies	Criteria for passing
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<i>Kn-1, Ab -1, C-1, AR-1</i>	<i>P-1</i>	Written tests, oral examination	5 “excellent” – the Master acquired theoretical material of the class theme perfectly, demonstrates profound and extensive knowledge on the theme, basic rules of scientific literature sources and recommended references, thinks and responds logically, freely uses acquired theoretical knowledge for analysis of practical material, expresses his/her attitude to certain problems, demonstrates high level of acquiring practical skill;
		Written tests, oral examination	4 “good” – the Master acquired theoretical material of the class theme well, demonstrates basic aspects from literature sources and recommended references, can substantiate the material; possesses practical skills, expresses his/her opinion on certain problems, but makes some mistakes and speaks with ambiguities while presenting theoretical content or performing practical skills;
<i>Kn-2, C-2, AR-2</i>	<i>P-1, SW-1</i>	Written tests, oral examination	3 “satisfactory” – the Master acquired theoretical knowledge of the class theme in general, is acquainted with literature sources and recommended references, but answers unconvincingly, speaks with ambiguities, feels unconfident if asked additional questions, demonstrates lack of stable knowledge, cannot assess facts and phenomena associated with future activity, makes mistakes while performing practical skills;
<i>Kn-3, Ab-2, C-5, AR-3</i>	<i>P-1, SW-1</i>	Written tests, oral examination	2 “unsatisfactory” – the Master did not learn educational material of the theme, does not know scientific facts, definitions, is hardly acquainted with literature sources and recommended references, scientific reasoning is absent, practical skills are not formed.
<i>Kn-4, Ab-3, C-4, AR-4</i>	<i>P-1</i>	Written tests, oral examination	
<i>Kn-5, Ab-8, Ab-5, C-5, AR-5</i>	<i>P-1, P-2, P-3, SW-1, SW-2, SW-3</i>	Written tests, oral examination	
<i>Kn-6, Ab-6, C-6,</i>	<i>P-1, P-2, P-3, SW-1, SW-2, SW-3</i>	Written tests, oral examination	<u>Criteria for test assessment:</u> <i>Excellent</i> – the Master did 95-100 % of the suggested tests correct! <i>Good</i> – the Master did 80-94 % of the suggested tests correctly;

		Written tests, oral examination	<p><i>Satisfactory</i> – the Master did 60.5-79 % of the suggested tests correctly;</p> <p><i>Unsatisfactory</i> – the Master did less than 60.5 % of the suggested tests correctly;</p> <p><u>Criteria for assessment of situational tasks:</u></p> <p><i>Excellent</i> – the Master completely learned theoretical material of the class theme, can link theory and practice, thus, can solve complicated situational tasks.</p> <p><i>Good</i> – the Master learned theoretical material of the theme well, correctly uses theoretical knowledge in solving situational tasks of average difficulty.</p> <p><i>Satisfactory</i> – the Master learned only basic material without details, solves only the easiest tasks, makes mistakes and indistinct statements, and is inconsistent in presenting reports.</p> <p><i>Unsatisfactory</i> – the Master does not know a considerable part of theoretical material of the class theme, makes significant mistakes, does not solve a situational task.</p> <p><u>Criteria for assessment of a set of open questions:</u></p> <p>A task includes five open questions on the theme of the practical class. Maximum points are three, which are included in the total score of a test task.</p> <p><u>Criteria for assessment of practical skills:</u></p> <p><i>Excellent</i> – the Master completely performs practical skills, can link theory and practice.</p> <p><i>Good</i> – the Master partially performs practical skills, uses theoretical statements correctly in solving practical tasks.</p> <p><i>Satisfactory</i> – the Master can perform</p>
<i>Kn-7, Ab-3, Ab-7, C-7, AR-6</i>	<i>P-1, P-2, P-3</i>	Written tests, oral examination	
<i>Kn-8, Ab-4, C-8, AR-7</i>	<i>P-3</i>	Written tests, oral examination	
<i>Kn-9, Ab-9, C-9, AR-8</i>	<i>P-2, P-3</i>	Written tests, oral examination	
<i>Kn-10, Ab-10, C-10, AR-10</i>	<i>P-1, P-2, P-3</i> <i>SW-1, SW-2</i>	Written tests, oral examination	
<i>Kn-11, Ab-11, C-11,</i>	<i>P-1</i>	Written tests, oral examination	
<i>Kn-12, Ab-12, C-12</i>	Written tests, oral examination	Written tests, oral examination	
<i>Kn-13, Ab-13, C-13</i>	Written tests, oral examination	Written tests, oral examination	
<i>Kn-14, Ab-14, C-14</i>	<i>P-1, P-2, P-3,</i>	Written tests, oral examination	

		only minimum of a required practical task, is acquainted with the technique of performance. <i>Unsatisfactory</i> – the Master cannot perform a practical skill.
Final control		
General evaluation system	Participation in the work during the semester on a 200-point scale	
Rating scales	traditional 4-point scale, multi-point (200-point) scale, rating scale ECTS	
Conditions of admission to the final control	The student attended all practical (laboratory, seminar) classes and received at least 72 to 120 points	
Type of final control	Methods of final control	Enrollment criteria
Credit	<p>this is a form of final control, which consists in assessing the student's mastery of educational material in the discipline on the basis of current control and completed individual test tasks during the last lesson. Credit is made in writing form, according to the schedule. The test lasts 2 academic hours and is carried out according to the following regulations.</p> <p>Stage 1 - Test control - 30 test tasks, 30 minutes. The block of test consists of 15 questions of the first level of difficulty, the maximum points that a student can receive is 15 (1 point for a question); and 20 questions of the second level of difficulty, each of which can bring 3 points, ie 60 per block.</p> <p>Stage 2 – The solve of a complex clinical task, including the definition of a preliminary clinical diagnosis, interpretation of laboratory findings, determination of therapeutic management /30 minutes/. The maximum number of points is 20 for one clinical task.</p>	<p>The maximum number of points is - 80. The minimum number of points is – 50.</p>
Criteria for assessing credit		
Credit	<p>The block of test consists of 20 questions of the first level of difficulty, the maximum points that a student can receive is 20 (1 point for a question); and 20 questions of the second level of difficulty, each of which can bring 3 points, ie 60 per block. The maximum number of points is - 80. The minimum number of points is – 50.</p>	<p>Final Control is accepted if student's score is 50 or more points.</p>
<p>The maximum number of points that a student can score for the current academic activity for the semester for admission to the differentiated test is 120 points. The minimum number of points that a student must score for the current academic activity for the semester for admission to the differentiated test is 72 points. The calculation of the number of points is based on the grades obtained by the student on a traditional scale during the study of the discipline during the semester, by calculating the arithmetic mean (AM), rounded to two decimal places. The resulting value is converted into points on a multi-point scale as follows:</p> $x = \frac{CA \times 120}{5}$ <p>Scheme of allocation and distribution of points received by students: For the disciplines with the final examination in a form of Semester credit is defined as the sum of points for the current educational activity (not less than 72) and marks for the performance of individual test tasks in the last lesson (not less than 50). Conversion of points for a discipline into the ECTS scale rates and 4-point scale (traditional). ECTS scores on the 4-point scale are not converted and vice versa.</p>		

Points of students studying in one specialty, taking into account the number of points scored from the discipline, are ranked on the ECTS scale as follows:

ECTS mark	Statistical indicator
A	The best 10 % of students
B	The following 25 % of students
C	The following 30 % of students
D	The following 25 % of students
E	The last 10 % of students

A, B, C, D, E rankings are awarded to students of this course, who study in one specialty and successfully complete the study of discipline. Students rated FX, F ("2") are not included in the list of ranked students. Students with an FX mark after reassembly automatically receive a "E" mark.

The number of points for a discipline, which a student has gained, is converted into the 4-point scale as follows:

Points for discipline	Mark per the 4-point scale
From 170 to 200 points	«5»
From 140 to 169 points	«4»
From 139 points to the minimum number of points which a student should gain	«3»
Less than the minimum number of points which a student should gain	«2»

The ECTS marks are not converted into a traditional scale because the ECTS scale and the four-point scale are independent.

Objectivity of evaluation of students' educational activity is checked by statistical methods (correlation coefficient between ECTS assessment and national scale assessment).

9. Course policy

Educational discipline "Clinical Immunology and Allergology" is based on the principles of scientificity, self-development, humanism, democracy, continuity, personal and general responsibility, collectivity and open discussion of issues that belong to its competency.

Academic integrity in learning the discipline is provided by:

- **Masters** by means of:
- ✓ Individual performance of tasks during continuous assessment, individual work without using external information sources, except for those permitted for use, in particular during

- assessment of study results;
- ✓ Personal presence during all lectures and practical classes, except for the cases due to reasonable excuses;
- **Pedagogical staff** by means of:
- ✓ Providing qualified educational services with application of educational innovation approaches in practical professional activity;
- ✓ Independence of professional activity from political parties, public and religious organizations;
- ✓ Improvement of professional level by self-study and self-development, refresher courses;
- ✓ Following rules of staff regulations, working discipline, corporation ethics;
- ✓ Objective and impartial assessment of the Masters' training results;
- ✓ Control of Masters' following academic integrity; informing of Masters on typical violations of academic integrity and kinds of responsibility for such violation.
- **attending classes by higher education students:**
- ✓ - Attendance at all classes is mandatory for the current and final assessment of knowledge (except for emergency reasons).
- ✓ rearranging topics and working off missed classes by higher education students:
- ✓ - practice of missed classes is according to the schedule of practice - rearrangement of the topic of the lesson, for which the student received a negative grade, is held at a convenient time for the teacher and the student outside the classroom, the maximum grade - "good"
- ✓ - rearrangement of the topic during the current training and final control in order to increase the assessment is not allowed

10. Literature

Basic academic literature:

1. Skin and venereal diseases / under the editorship of Prof., Y.C. Skripkin. – Moscow: Medicina, 1995. – V. 3. – 447 p.
2. Skin and venereal diseases. Textbook / V.H.Kolyadenko, V.I. Stepanenko, P.V.Fedorych, S.I.Sklyar. – C.: Nova knyha, 2006. – 424p.
3. Skin and venereal diseases / under the editorship of V.K. Kravchenko. – K., 1995. – 300 p.
4. Savchak V.K. Practical dermatology / V. Savchak, S. Galnykina. – K.: Ukrmedknyha, 1998. – 508 p.
5. Stepanenko V.I. Dermatology. Venereology. Textbook / V.I. Stepanenko, M.M. Shupenko, O.O. Syzon [et al.] - Kyiv.: KIM, 2013. – 560 p., 257 p.

Additional academic literature:

1. Adaskevych V.P. Skin and venereal diseases / V.P. Adaskevych, V.M. Kozin. – M.: Med.lit., 2013. – 672p.
2. Ajzhatulov R.F. Syphilis. – Donetsk: Donechchyna, 1998. – 227 p.
3. Venericheskie bolezni. Rukovodstvo dlya vrachei. / Pod red. O.K. Shaposhnikova. – M. «Meditsina», 1991, –544p.
4. Vladimirov V.V., Zudin B.I. Kozhnye i venericheskie bolezni.-M.:Atlas.Meditsina,1980 .- 287p.
5. Djudjun A.D. ta spivavt. Infekciji, shho peredajutsja statevym shljakhom (navchalnyj posibnyk).- Kyjiv: Polighraf pljus, 2012. –133 p.
6. Koljadenko V.Gh., Fedorenko O.E., Gholovchenko D.Ja. Medycynskaja deontologhija v dermatologhyy y venerologhyy. - K.: «Zdorov'ja», 1989. – 167 p.
7. Mavrov I.I. Osnovy diagnostiki i lecheniya v dermatologii i venerologii. – Khar'kov, 2007. – 800 p.
8. Fitspatrik T. i dr. Dermatologiya // Atlas-spravochnik. Per.s angl.- M.: Praktika , 1999.- P. 885-898.
9. Fedotov V.P. Lektsii po klinicheskoi dermatovenerologii. Tom.I. – Dnepropetrovsk, 2010. – 397 p.
10. Fedotov V.P., Dyudyun A.D., Stepanenko V.I. Dermatovenerologiya. – Dnepropetrovsk, 2011. – 651s.
11. Fedotov V.P., Makarchuk A.I. Klinicheskie lektsii po dermatovenerologii i kosmetologi. Tom. II. – Zaporozh'e –Dnepropetrovsk, 2013. – 552 p.

11. Equipment, inventory support and software of the discipline

The department is equipped with devices necessary for examination and conduction of a series of diagnostic and therapeutic measures, including cosmetology chair (for dermatological examination of patients, collection of material for examination and conduction of dermatocosmetic manipulations), centrifuge (for PRP injections), disposable sets for gynecological examination (examination and collection of material), Wood's lamp (for differential diagnosis of dermatosis); instruments necessary for collection of biopsy materials; dermatoscopes for early diagnosis and differential diagnostics of skin neoplasms); electrocoagulator (for electrosurgical manipulations) etc., as well as moulages, slides and microsections. The department is equipped with computers, multifunctional copiers, printers, multimedia projectors, notebooks, display, smart TV, projector. Wireless Internet access is available.

12. Additional Information

Together with the department staff, students participate in social and educational activities (Immunodeficiency days, Asthma days, Vaccination week, atopic skin care etc.).

All the practical classes are held at the Department of Clinical Immunology and Allergology 70010, Lviv, 69_b Pekarska street

Creators of syllabus:

PhD, assoc. prof.

Kh. Lishchuk-Yakymovych

Head of the Department, MD, PhD, prof.

V. Chopyak

13. Appendices

List 1

Symptoms

1. Subfebrile Temperature/ fever
2. Hyperemia of the skin and mucous membranes
3. Itching of the skin and mucous membranes
4. Rash on the skin and mucous membranes
5. Hyperkeratosis
6. Hyper and hypopigmentation
7. Hypertrichosis, Hypotrichosis, alopecia
8. edema
9. cold
10. sneeze
11. cough
12. polyposis
13. lymphadenopathy
14. diarrhea
15. arthralgia and arthritis
16. myalgia
17. visual impairment,
18. hearing impairment,
19. impaired sensitivity
20. pain in the extremities
21. polyneuropathy
22. increase sensitivity to cold
23. increase sensitivity to heat
24. increase sensitivity to the sun

Syndromes

1. lymphopenic
2. neutropenic
3. anemic and thrombocytopenic
4. eosinophilic
5. syndrome of prolonged fever
6. cryopathy syndrome
7. lymphadenopathy syndrome
8. edematous syndrome
9. chronic fatigue syndrome
10. antiphospholipid syndrome
11. autoimmune syndrome
12. immunoproliferative syndrome
13. systemic inflammatory response syndrome
14. immunoconflict
15. post-vaccination

List 2 (diseases)

1. immunodeficiencies (primary, secondary)
2. sarcoidosis
3. allergic diseases
4. autoimmune diseases (hematopoietic organs, digestive organs, respiratory, cardiovascular, endocrine, nervous systems); systemic autoimmune diseases
5. immunoproliferative diseases

List 3 (emergencies):

- 1) anaphylactic shock
- 2) acute urticaria
- 3) angioneurotic edema
- 2) Stevens-Johnson syndrome
- 3) Lyell's syndrome

List 4 (laboratory and instrumental research):

- 1) general blood test
- 2) general urine analysis and urine cytology
- 3) general feces analysis
- 4) determination of hemostasis
- 5) blood proteins and their fractions, C-reactive protein, homocysteine
- 6) serum ferritin, iron and copper
- 7) evaluation of phagocytic cells
- 8) examination of the complement system

