**Ministry of health of ukraine**

**Kharkiv national medical university**

**Department of Internal Medicine No. 2, Clinical Immunology and Allergology named after academician L.T. Malaya**

**Syllabus of discipline**

**(Optional course)**

**“Actual Issues of Clinical Immunology and Allergology”**

**for masters in the field of preparation 22 "Health"**

**specialty 222 "Medicine"**

**qualification Master of Medicine**

**Kharkiv – 2020**

**Sixth year of study**

**Required Items:**

Number of credits - 4

The total number of hours - 120.

Hours for full-time study: classroom - 20, independent student work - 100.

Year - 6, semesters - 11 and 12.

Practical classes - 20 hours.

Independent work - 120

Type of control: credit.

Location of practical classes: study rooms of the Department of Internal Medicine №2, Clinical Immunology and Allergology named after Acad. LT Small on the basis of the National Clinical Hospital "City Clinical Hospital №27" of KhCM (41 Pushkinskaya St.).

Classes: Monday, Tuesday, Wednesday, Thursday, Friday (800-1215 / 1225-1555 according to schedule).

**Course coordinators**

1. Pavlo Kravchun - Head of the Department of Internal Medicine No.2, Clinical Immunology and Allergology named after academician L.T. Malaya, Dr. med. Professor.

2. Volodymyr Babadzhan - Professor of the Department of Internal Medicine No.2, Clinical Immunology and Allergology named after academician L.T. Malaya, Dr. med. M.Sc., Professor, Email: [vladdoc2@gmail.com](mailto:vladdoc2@gmail.com).

3. Olexandra Yermak - Assistant professor of the Department of Internal Medicine No. 2, Clinical Immunology and Allergology, named after academician L.T. Malaya, Dr. Med.

**Course abstract**

The discipline "Actual Issues of Clinical Immunology and Allergology" includes the improvement in the master's understanding of the structure, laws and mechanisms of functioning of the immune system, knowledge of the etiology, pathogenesis, clinical picture, methods of diagnosis and treatment of typical immunopathological processes (primary and secondary immuno-deficiency, immunotherapy of tumors, transplant rejection) and allergic diseases, ability to diagnose major clinical and laboratory syndromes of immunopathological, allergic processes, identify tactics immunotherapy know the criteria of treatment effectiveness. The course "Actual Issues of Clinical Immunology and Allergology" is intended for masters of 6 years for study.

The purpose of teaching the course "Clinical Immunology and Allergology" is to deepen the knowledge, skills, and other competencies in clinical immunology and allergology required in the professional activity of a doctor, which are established on the basis of educational and professional program.

The main tasks of studying the discipline "Clinical Immunology and Allergology" are the acquisition of competencies by masters in accordance with the general and professional competences of educational and professional program "Medicine" of the second (master's) higher education level, specialty 222 Medicine Master's Degree in Medicine: 1) the ability to interpret the results of immunological studies, to determine the immunological characteristics and to appoint differentiated treatment of immunological disorders (primary and secondary immune-deficiencies, autoimmune diseases, immunodiagnostics and immunotherapy of tumors, transplant rejection, allografts, and allografts; 2) ability to detect immunological signs of immune disorders in patients with acute, recurrent and chronic pathology, to establish a preliminary clinical diagnosis; 3) the ability to classify the symptoms and syndromes of immunological disorders; 4) ability to perform differential diagnosis of hereditary and acquired immune disorders in different pathologies on the basis of immunological history, analysis of the family tree, clinical and laboratory examination of the patient; 5) the ability to draw up a plan of examination of the patient, to analyze the obtained research data in the light of the results of immunological examinations, which are able to determine the state of immunity, its disorders, signs of allergic process, considering age of the patient, health status, seasons; 6) keeping medical records, the ability to apply knowledge in practical situations; 7) understanding of the subject area and professional activity, the ability to adapt and act in a new situation, making informed decisions, the ability to work in a team, to act socially responsible and consciously.

**The organization of training - curriculum**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Titles of sections and topics | Number of hours | | | |
| All | Pr. | IWS | Including individual work |
| Section 1. Immunological status, principles of evaluation immunodeficiency diseases and ways of immuno-correction | | | | |
| Topic 1. Tasks of Clinical Immunology and Allergology. Structure and functions of the immune system. Immune cells and their co-operation. | 13 | 3 | 10 | Preparation of a review of scientific literature, a report or an abstract, the fulfillment of a creative task |
| Topic 2. The concept of an immunogram. Indicators of normal immunograms. Immunogram in acute infectious diseases of viral and bacterial etiology. | 18 | 3 | 15 |
| Topic 3. Immunogram in congenital (primary) immuno-deficiencies. Methods of immuno-correction in primary immuno-deficiencies. | 18 | 3 | 15 |
| Topic 4. Immunogram in acquired (secondary) immuno-deficiencies. Methods of immuno-correction of secondary immuno-deficiencies. | 18 | 3 | 15 |
| Section 2. Alergic diseases | | | | |
| Topic 5. Specific immuno-diagnostics and immunotherapy of patients with polynosis and allergic bronchial asthma. Food allergy. | 18 | 3 | 15 | Preparation of a review of scientific literature, a report or an abstract, the fulfillment of a creative task |
| TOPIC 6. Urticaria and angioneurotic edema. Differential diagnostics of immune and non-immune mechanisms (allergies and pseudoallergies). Atopic dermatitis. | 18 | 3 | 15 |
| Topic 7. Medicinal allergy and anaphylaxis. | 17 | 2 | 15 |
| 8. Credit |  |  |  |  |
| Total hours in discipline: 120  Кредитів ECTS: 4 | 120 | 20 | 100 |  |

**Topics of practical classes**

|  |  |  |
| --- | --- | --- |
| №  i/o | Title of topic | Number of hours |
| 1. | Structure and functions of the immune system. Immune cells and their co-operation. Indicators of normal immunograms.  Immunogram in acute infectious diseases of viral and bacterial etiology. Activated T- and B-cell immune response. Immune system dysfunction. | 5 |
| 2. | Classification, clinical picture and immunogram in congenital (primary) immuno-deficiencies. Methods of immuno-correction in primary immuno-deficiencies.  Classification, clinical picture and immunogram in acquired (secondary) immuno-deficiencies. Methods of immuno-correction of secondary immuno-deficiencies. | 5 |
| 3. | Specific immuno-diagnostics and immunotherapy of patients with polynosis and allergic bronchial asthma. Food allergy.  Urticaria and angioneurotic edema. Differential diagnostics of immune and non-immune mechanisms (allergies and pseudoallergies). | 5 |
| 4. | Atopic dermatitis. Drug allergy and anaphylaxis. | 5 |
| 5. | Credit |  |
|  | Total hours of practical classes | **20** |

**Independent work of students**

|  |  |  |
| --- | --- | --- |
| №  i/o | Title of topic | Number of hours |
| 1 | Contemporary presentation of the structure and function of the main complex of histocompatibility. Propensity for diseases depending on the HLA-phenotype. | 9 |
| 2 | Apoptosis is a special type of cell death. His role in physiological and pathological processes. | 9 |
| 3 | Stress, disorders of neurohumoral and immune regulation. Chronic fatigue syndrome Principles of treatment and immunorehabilitation. | 9 |
| 4 | Immunological system of mucous membranes. Lymphoid tissue associated with the gastrointestinal tract. Probiotics in the treatment of dysbiosis. | 7 |
| 5 | Fungal lesions of the skin and mucous membranes: immunopathogenesis, immunotropic therapy. | 7 |
| 6 | Clinical and Laboratory Criteria for HIV / AIDS Immunodiagnostics. | 7 |
| 7 | Specific immunodiagnostics and immunotherapy, mechanism of action, indications and contraindications, prognosis of effectiveness. | 9 |
| 8 | Food allergy, clinical manifestations, treatment and prevention | 7 |
| 9 | Anaphylaxis and other allergic reactions to medicines, treatment and prophylaxis. | 9 |
| 10 | The concept of allergy and pseudoallergy, differential diagnosis. Histamine-liberation mechanisms of development of pseudoallergic reactions. Principles of treatment. | 9 |
| 11 | Herpetic infections: immunopathogenesis, immunodiagnosis, features of clinical manifestations, immunotherapy, immunorehabilitation | 9 |
| 12 | Features of treatment for patients with acquired immunodeficiency diseases. | 9 |
|  | Total hours of independent work of the student | **100** |

**Individual tasks**

***Preparation of review of scientific literature or conducting scientific research  
(optional):***

• Immuno-neuro-endocrine regulation of body functions.

• Apoptosis as regulation of the immune response.

• Immunology of mucous membranes.

• Immuno-pathogenesis and immune therapy of sepsis;

• Epstein - Barr Viral Infection: Immuno-pathogenesis, Immunotherapy

• Polynomial. Allergen- specific immunotherapy: principles of appointment. Indications and contraindications, development of complications.

• Drug allergy.

• Cure of a patient with an immune-dependent or allergic pathology.

• Report of the history of the patient's illness on a practical lesson.

• Report of the abstract or presentation at the practical lesson

• Writing abstracts, articles

• Participation in Olympiads and conferences

**Methods of control**

**Current training activity.** Teachers shall ensure that each student receives the necessary competences in the areas covered by the practical classes. Mastering the topic (current control) is controlled by practical lessons according to specific goals. The following measures are used to assess the level of student preparation: interpretation and evaluation of the results of specific immuno-diagnostics, laboratory tests (ELISAs for determining the levels of specific IgEs), immunoassay tests and immunohistochemistry, specific immunotherapy, tests, solution of situational tasks, control of the acquisition of practical skills.

When assessing the mastering of each discipline subject (current training activity - CTA) and the final session (software), the student is awarded an assessment according to the traditional 4-point system: "excellent", "good", "satisfactory" and "unsatisfactory".

**Score from discipline.** The final lesson (FL) is conducted according to the program of the discipline during the semester on a schedule, during the classes. Assessment of the discipline is given to the student at the last (final) class. The total score for the CTA and the final lesson (FL) is defined as the arithmetic mean of the traditional scores for each lesson and the software, rounded to 2 decimal places (to the nearest hundredths), which are converted into points according to the "Instructions for Assessment of Student Learning Activities" … ”Using Table 2 or the average score (up to one hundredth) for the IPA and its conversion to ECTC points is automatically obtained by the teacher through the ACS electronic journal. The minimum number of points that a student must earn for his / her current activity while studying the discipline is 120 points, and the maximum number of points is 200 points.

The maximum number of points that a student can gain in studying the discipline is - 200, the minimum is 120 points. The type of final control is credit.

After completing the teaching of the discipline "Clinical Immunology and Allergology" the student gets a credit.

Assessment of students' independent work. Independent work of students, which is provided by the topic of the lesson along with the classroom work, is assessed during the ongoing control of the topic at the relevant lesson.

Assessment of individual tasks of the student is carried out under the conditions of the teacher's tasks (report of a lecture at a practical lesson, a report with a presentation at a practical lesson, a report at scientific and practical conferences of the department, university, writing abstracts, articles, participation in the Subject Olympiad). Points (no more than 10) are added as an incentive extra point to the final grade for the current learning activity. The total amount of points for the current educational activity may not exceed 200 points.

Table 2.

Recalculation of the average for current activity in a multi-scale scale

(for disciplines ending with a score)

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| 4-point scale | 200-point scale |  | 4-point scale | 200-point scale |  | 4-point scale | 200-point scale |
| 5 | 200 | 4.22-4,23 | 169 | 3.45-3,46 | 138 |
| 4.97-4,99 | 199 | 4.19-4,21 | 168 | 3.42-3,44 | 137 |
| 4.95-4,96 | 198 | 4.17-4,18 | 167 | 3.4-3,41 | 136 |
| 4.92-4,94 | 197 | 4.14-4,16 | 166 | 3.37-3,39 | 135 |
| 4.9-4,91 | 196 | 4.12-4,13 | 165 | 3.35-3,36 | 134 |
| 4.87-4,89 | 195 | 4.09-4,11 | 164 | 3.32-3,34 | 133 |
| 4.85-4,86 | 194 | 4.07-4,08 | 163 | 3.3-3,31 | 132 |
| 4.82-4,84 | 193 | 4.04-4,06 | 162 | 3.27-3,29 | 131 |
| 4.8-4,81 | 192 | 4.02-4,03 | 161 | 3.25-3,26 | 130 |
| 4.77-4,79 | 191 | 3.99-4,01 | 160 | 3.22-3,24 | 129 |
| 4.75-4,76 | 190 | 3.97-3,98 | 159 | 3.2-3,21 | 128 |
| 4.72-4,74 | 189 | 3.94-3,96 | 158 | 3.17-3,19 | 127 |
| 4.7-4,71 | 188 | 3.92-3,93 | 157 | 3.15-3,16 | 126 |
| 4.67-4,69 | 187 | 3.89-3,91 | 156 | 3.12-3,14 | 125 |
| 4.65-4,66 | 186 | 3.87-3,88 | 155 | 3.1-3,11 | 124 |
| 4.62-4,64 | 185 | 3.84-3,86 | 154 | 3.07-3,09 | 123 |
| 4.6-4,61 | 184 | 3.82-3,83 | 153 | 3.05-3,06 | 122 |
| 4.57-4,59 | 183 | 3.79-3,81 | 152 | 3.02-3,04 | 121 |
| 4.54-4,56 | 182 | 3.77-3,78 | 151 | 3-3,01 | 120 |
| 4.52-4,53 | 181 | 3.74-3,76 | 150 | **Less 3** | **Not enough** |
| 4.5-4,51 | 180 | 3.72-3,73 | 149 |  |  |
| 4.47-4,49 | 179 | 3.7-3,71 | 148 |
| 4.45-4,46 | 178 | 3.67-3,69 | 147 |  |  |
| 4.42-4,44 | 177 | 3.65-3,66 | 146 |  |
| 4.4-4,41 | 176 | 3.62-3,64 | 145 |  |  |
| 4.37-4,39 | 175 | 3.6-3,61 | 144 |  |  |
| 4.35-4,36 | 174 | 3.57-3,59 | 143 |  |  |
| 4.32-4,34 | 173 | 3.55-3,56 | 142 |  |  |
| 4.3-4,31 | 172 | 3.52-3,54 | 141 |  |  |
| 4,27-4,29 | 171 | 3.5-3,51 | 140 |  |  |
| 4.24-4,26 | 170 | 3.47-3,49 | 139 |  |  |

**Score from discipline**

The course grade is given only to students who have completed all practical classes and lectures. If a student has arrears of absenteeism (absent or unsatisfactory) and lectures (absent), he or she may complete an internship or lecture (write an abstract and answer questions on a lecture topic) during the current semester, as well as approved the schedule of the educational process for a period of two weeks during the winter holidays before the beginning of the next semester, after the end of the corresponding semester with the permission of the dean.

**Recommended literature**

1. Oxford Handbook of Clinical Immunology and Allergy/ Third edition/Edded by Gavin P.S. – Oxford University Press, 2015 - 659 p.

2. USMLE STEP 1Lecture Notes, 2016/ Immunology and Microbiology/Tiffany L. Alley, Kim Moscatello- NY-Kaplan, Inc., 2016 – 519 p.

**Information resources**

1. Library of Congress Cataloging-in-Publication Data

2. [www.allergen.org](http://www.allergen.org)

3. [www.allergyeducation-ma.com](http://www.allergyeducation-ma.com)

**Course Policy**

In order to achieve the learning goals and successfully complete the course, it is necessary: from the first day to join the work; attend lectures regularly; read the material beforehand before considering it in a practical session; not to be late or miss classes; to come to the department dressed in a medical gown, to have replaceable shoes, to have a phonendoscope, a notebook, a pen; complete all necessary tasks and work daily; be able to work with a partner or as part of a group; seek help and receive it when you need it.

Provided academic mobility, interchangeability of credit credits (volume of 1 credit 30 hours). Masters can discuss different tasks, but their implementation is strictly individual. Writing, using any kind of software, tips, using a mobile phone, tablet or other electronic gadgets during the class are not permitted. Masters are not allowed to be late for practical classes. The absences of the practical classes are worked out hour by hour by the group teacher or the regular teacher. Reception of workings and consultations are held daily from 1500 - 1700, on Saturdays in accordance with the "Regulations on the order of working out by students of educational classes" from 07.12.2015 № 415.

Masters with special needs should meet with the teacher or warn him or her before the class starts, at the request of the student, this may be done by the head of the group. If you have any questions, please contact your teacher.

Head of the Department of Internal Medicine №2,

clinical immunology and allergology

named after academician L.T. Malaya,

Doctor of medicine, Profssor P. Kravchun