

ODESSA NATIONAL MEDICAL UNIVERSITY

Clinical immunology, genetics and medical biology department

SYLLABUS OF THE OPTIONAL COURSE "FUNDAMENTALS OF MOLECULAR ALLERGOLOGY AND ALLERGEN IMMUNOTHERAPY"

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| Scope | 4 ECTS credits/120 hours |
| Semesters, year of education | IV semester, 2 year of study |
| Days, time, place | According to the approved schedule in the auditoria of clinical immunology, genetics and medical biology department Odesa, Olhiivska str, 4. Main building of ONMedU, 3rd floor |
| Lecturers | Goncharuk Sergii Fedorovich, doctor of medical sciences, professor, head of clinical immunology, genetics and medical biology department; Osintseva Viktoriia Ihorivna, assistant of clinical immunology, genetics and medical biology department |
| Contact telephone number | Goncharuk Sergii Fedorovich 0674806106 |
| E-mail | goncharuks@ukr.net |
| Work place | Auditoria of clinical immunology, genetics and medical biology department, Olhiivska str., 4 |
| Supervision | <i>Face-to-face:</i> every Thursday – from 14:00 till 17:00, every Saturday – from 09:00 till 13:00. <i>For distance online studying consultations:</i> every Thursday – from 14:00 till 17:00, every Saturday – from 09:00 till 13:00 on the <i>Microsoft Teams, Zoom, Telegram, Viber</i> platforms |

COMMUNICATION

Communication with students will be through face-to-face meetings, by phone and e-mail. In the case of online learning, communication with students will be carried out on *Microsoft Teams* platform and by phone, e-mail and, *Zoom, Telegram, Viber* for each group.

COURSE ANNOTATION

The subject of study of the optional course "Fundamentals of molecular allergology and allergen immunotherapy" is the issue of a modern approach to the diagnosis of allergic diseases according to international recommendations and a personalized approach to the treatment of patients with allergic pathology.

The purpose of the optional course "Fundamentals of molecular allergology and allergen immunotherapy " is to acquire a complex of knowledge, skills, and other competencies in professional medical activity and research work.

The main tasks of the optional educational discipline are:

- 1) provision of in-depth knowledge regarding modern diagnostic methods, personalized treatment of patients with allergic diseases;
- 2) knowledge of the pathogenetic mechanisms of the occurrence and further progression of allergic diseases;
- 3) knowledge of various clinical variants of the course of allergic diseases and their complications;
- 4) knowledge and ability to develop individual diagnostic and treatment programs for a patient with allergic pathology;
- 5) the ability to interpret the results of a molecular allergological examination;
- 6) the ability to choose personalized allergy vaccines for effective allergen immunotherapy

Learning outcomes for the discipline.

A graduate student (applicant) **should know:**

- structural and clinical physiology of the immune system, modern methods of its assessment;
- possibilities and limitations of using allergological research methods (molecular allergology methods) in the clinic;
- main types of hypersensitivity reactions;
- clinical symptoms of various allergic diseases, principles of their diagnosis and treatment;
- principles of prescribing allergen immunotherapy.

A graduate student (applicant) **must be able to:**

- identify clinical, laboratory, functional signs of allergic disorders in patients, establish a clinical diagnosis;
- to classify the symptoms of allergic disorders;
- carry out differential diagnosis of allergic diseases and other diseases based on the data of clinical and laboratory examination of patients;
- to evaluate the results of molecular allergy diagnostics for various types of allergic pathology;
- determine the nature and principles of treatment of allergic diseases in patients, form dispensary groups, risk groups, conduct allergen-specific immunotherapy.

COURSE DESCRIPTION

Forms and methods of education

The discipline will be taught by academics in the form of seminars (60 classroom hours); organization of the applicant's independent work (60 hours).

Teaching methods: The teaching of the selective educational discipline "Fundamentals of molecular allergology and allergen immunotherapy" in seminar classes is provided by methodical developments for each class, visual teaching aids for each class (presentations, video lectures), the department's information resource, structured skill control algorithms.

Independent work in the study of an optional course is provided by visual means of learning (video lectures, presentations), the information resource of the department, the subject of independent work, structured algorithms of skill control.

Course content:

Topic 1. Structure and principles of functioning of the immune system

Topic 2. Etiology and pathogenesis of allergic diseases.

Topic 3. Nomenclature of molecular components of allergens. The concept of major and minor allergic components.

Topic 4. Modern standards of diagnosis and treatment of patients with bronchial asthma and allergic rhinitis

Topic 5. Molecular diagnosis of sensitization to household (indoor) allergens

Topic 6. Molecular diagnosis of sensitization to plant allergens.

Topic 7. Molecular diagnosis of sensitization to food allergens.

Topic 8. Molecular diagnosis of sensitization to insect allergens and latex.

Topic 9. Principles of prescribing and carrying out allergen immunotherapy.

Topic 10. Control of practical skills and theoretical knowledge. Credit class.

Final control of mastering the discipline.

List of recommended reading

Main literature:

1. Consensus document WAO-ARIA-GA2LEN on molecular allergy diagnosis (<https://forpost.ua/allergiya/molekulyarnaya-allergologiya/soglasitelnyy-dokument-wao-aria-ga2len-po-molekulyarnoy-allergodiagnostike-2103213618/>)

2. Martricardi P. Molecular allergology user's guide //Paolo Martricardi et al/ - EAACI, 2016/ - 401 p. /ISBN 978-3-033-05653-4/

3. Abbas A.K., Lichtman E.G., Pillai Sh. Fundamentals of immunology (functions and disorders of the immune system) under science. ed. prof. V.V. Chopyak - K: Medical University "Medicine". - 2020. - 327 p.

4. Clinical immunology and allergology: study guide (University III-IV of the Russian Academy of Sciences) / V.V. Chopyak, G.O. Potemkina, A.M. Gavrylyuk and others. - K.: Medical University "Medicine". - 2017. – 224 p

Additional literature:

1. EAACI European Academy of Allergy and Clinical Immunology White Paper on Research, Innovation and Quality Care. Published by the European Academy of Allergy and Clinical Immunology 2018
2. Global Atlas of ALLERGY. Published by the European Academy of Allergy and Clinical Immunology 2014.
3. GLOBAL ATLAS OF SKIN ALLERGY. Published by the European Academy of Allergy and Clinical Immunology 2019.
4. Basic immunology : functions and disorders of the immune system / Abul K. Abbas, Andrew H. Lichtman, Shiv Pillai ; Illustrations by David L. Baker, Alexandra Baker. -- Fifth edition. 318 p. ; cm. Includes bibliographical references and index.
5. ISBN 978-0-323-39082-8 I. Lichtman, Andrew H., author. II. Pillai, Shiv, author. III. Title. [DNLM: 1. Immunity. 2. Hypersensitivity. 3. Immune System--physiology. 4. Immunologic Deficiency Syndromes. QW 504] QR181 616.07'9--dc23.
6. 5th Edition of Clinical Immunology: Principles and Practice / Robert R. Rich. Elsevier – 2019. C. – 1323.
7. V.V. Chopyak, G.O. Potemkina, A.M. Gavrilyuk, Y.F. Tolstyak, S.O. Zubchenko. "Modern problems of clinical immunology and allergology in therapeutic practice." - Lviv: "NeoDruk", - 2020. - 219 p.

Information resources:

- <https://elifesciences.org/subjects/immunology-inflammation>
- <https://www.eaaci.org/>
- <https://www.facebook.com/EAACI>
- <http://aalu.org.ua/>
- <https://allergy.immunologyconferences.com/events-list/asthma>
- <https://www.immunopaedia.org.za/>
- <https://www.worldallergy.org/meetings>

EVALUATION

Current control is carried out at seminar classes in accordance with formulated tasks for each topic. When evaluating educational activities, preference is given to standardized methods of control: oral survey, reports, structured written works, solving situational problems. At the end of the study of the topic for the current educational activity, the student is given grades on a traditional 4-point scale. At the end of the study of the discipline, the current success rate is calculated as the average current score, that is, the arithmetic average of all the grades received by the graduate student on a traditional scale, rounded to a whole number (up to two decimal places).

Assessment of current discipline control:

The value of the rating is "excellent": the graduate student shows creative abilities, knows how to independently find and process the necessary information and use acquired knowledge and skills to solve situational problems, convincingly argues his own answers, takes an active part in the class discussion.

The value of the "good" grade: the graduate student has a good command of the studied material, solves situational problems freely, but makes minor mistakes, which he is able to correct on his own.

The value of the assessment is "satisfactory": the graduate student possesses a significant part of the theoretical material, demonstrates knowledge and understanding of the main provisions, but makes mistakes in answers and solving situational problems, including sometimes significant ones.

The value of the assessment is "unsatisfactory": the graduate student does not know the theoretical material of the class or knows the material at the level of individual fragments, makes significant mistakes in the answers, is not able to participate in the discussion on the topic of the class.

Only graduate students who do not have academic debt and have an average score for current academic activities of at least 3.00 are admitted to the final certification.

Forms and methods of final control

The final control is conducted in the form of a credit at the last seminar session. The grade for the discipline is the average current score as the arithmetic average of all current grades obtained in seminar classes. The obtained average score for the discipline is converted into a grade on a 200-point scale by multiplying it by 40 (the obtained grade is rounded to whole numbers), which is then converted into a traditional grade from the discipline on a 4-point scale.

Table of conversion of multi-point assessment to traditional

| National score for a discipline | Sum of points for a discipline |
|---------------------------------|--------------------------------|
| «5» | 185 – 200 |
| «4» | 151 – 184 |
| «3» | 120 – 150 |
| «2» | Less than 120 |

COURSE POLICY

The policy of studying the discipline "Theoretical bases of molecular medicine" is determined by the system of requirements that the teacher imposes on the applicant in the study of the discipline. Requirements apply to attendance of all types of classes (inadmissibility of absences, being late), rules of conduct in the classroom (active participation, compliance with the required minimum of educational work), incentives and penalties. The policy of the academic discipline is built taking into account the norms of the legislation of Ukraine on academic integrity, the Statute and provisions of ONMedU, other normative documents.

Deadline and reattempt policy.

Applicants, have not missed lectures and seminar classes or completed missed auditorium classes and have an average score of at least 3.00 are allowed for control. Reassignment of unsatisfactory grades and absences is allowed for 2 weeks without the permission of the dean on the days of consultations and practice

(Tuesday and Saturday), later - with the permission of the dean; in case of distance online learning - in the terms determined and agreed with the teacher.

Academic Integrity Policy.

Observance of academic integrity by PhD seekers provides independent fulfillment of all types of educational tasks, tasks of current and final control of learning outcomes; references to informational sources in the case of using borrowed ideas, developments, statements, information; providing reliable information on the results of their own educational activities, used research methods and sources of information.

Unacceptable in educational activities for participants of educational process are usage of prohibited auxiliary materials or technical means (cheat sheets, abstracts, headphones, telephones, smartphones, etc.) during control; passing the procedures of control of learning outcomes by fictitious persons.

For violation of academic integrity, students may be held subject to the following academic liability: reduction of evaluation results; repeating of the differential test; appointment of additional control measures (individual tasks, additional control tests, etc.); re-passing the relevant educational component of the educational program, notification of the parents of the applicant for higher education about the committed violation;

Attendance and lateness policy.

Attendance of practical classes is obligate.

The student is allowed to be late for no more than 10 minutes and only for a serious reason

Mobile devices.

Mobile devices can be used during classroom classes only with the permission of the teacher.

Behavior in the classroom.

While in the classroom, friendliness, correctness, respect for the teacher and classmates, tolerance for the opposite point of view, a constructive approach to solving problems, adherence to the ethics of academic relations are important. Teachers and students must be in medical gowns and hats, during face-to-face classes in case of special epidemic regime (adaptive quarantine) - in properly dressed protective medical masks or respirators.