



CD 8.5.1 CURRICULUM DISCIPLINĂ

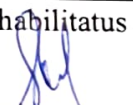
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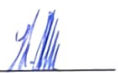
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**FACULTY OF MEDICINE**  
**STUDY PROGRAM S.07.O.060 MEDICINE**  
**DEPARTMENT OF INTERNAL MEDICINE**

**APPROVED**

at the meeting of the Commission for Quality Assurance and Evaluation of the Curriculum Faculty of Medicine  
Meeting Protocol No 1 from 16.09.2021  
Chairman, doctor habilitatus in medicine, professor  
Suman Serghei 

**APPROVED**

by the Council of Medicine Faculty No. 1 Meeting Protocol No 1 from 21.09.2021  
Dean of Medicine Faculty No.1, doctor habilitatus in medicine, associate professor  
Gheorghe Plăcintă 

**APPROVED**

at the meeting of Pneumology and Allergology Discipline

Meeting Protocol No. 2 from 14.09.2021

Head of chair, doctor habilitatus in medicine, professor

Botnaru Victor   
(signature)

**SYLLABUS**  
**(Analytical Program)**  
**Allergology Discipline**  
**Integrated studies**

Type of course: **Compulsory**

Curriculum developed by a group of authors:

Botnaru Victor, doctor habilitatus in medicine, professor

Calaraș Diana, Ph.D., associate professor

Chișinău, 2021



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### I. INTRODUCTION

- **General presentation of the discipline: place and role of the discipline in the formation of the specific competences of the professional training program.**

- Allergology is an integrative, interdisciplinary medical discipline, one of the basic specialty in the education of future doctors no matter what specialty they will choose later. The study of this discipline will allow the future doctor to gain the necessary skills for suggesting and supporting a correct diagnosis based on anamnesis, clinical and paraclinical examination, acquire the necessary knowledge for differential diagnosis and gain the necessary skills to solve the emergency situations, acquire the elements of prophylaxis and treatment of allergology.

- **Mission of the curriculum in professional training**

Strengthen the necessary knowledge and skills to get the right diagnosis, prescribe a particular medication and prophylaxis of lung disease as well as the social reintegration of these patients.

- Languages of the course: Romanian, English;
- Beneficiaries: students of the IV th year, Medicine Faculty No. 1 and No 2, faculty of General Medicine.

### II. MANAGEMENT OF THE DISCIPLINE

Code of discipline		<b>S.07.O.059</b>	
Name of the discipline		<b>Allergology</b>	
Person in charge of the discipline		doctor habilitatus in medicine, professor <b>Victor Botnaru</b>	
Year	<b>IV</b>	Semester/Semesters	<b>7</b>
Total number of hours, including:			<b>60</b>
Lectures	<b>6</b>	Practical/laboratory hours (just one)	<b>12</b>
Seminars	<b>12</b>	Self-training	<b>30</b>
Form of assessment	<b>E</b>	Number of credits	<b>2</b>

### III. TRAINING AIMS WITHIN THE DISCIPLINE

**At the end of the discipline study the student will be able to:**

**At the level of knowledge and understanding:**

- to know and to use correctly the notions specific to allergology discipline;
- to find the correlation between morphology and clinical aspects;
- to gain knowledge related to clinical and therapeutical aspects of allergology.



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### At the application level:

- to clinically evaluate the patient with allergic diseases;
- to make a correct analysis of skin testing, in vitro allergy testing, respiratory function tests, and administering inhaled medications;
- to provide emergency care in critical situations related to allergic diseases: bronchial asthma attacks, anaphylactic shock etc.;
- to elaborate the scientific research projects in the field of allergology.

### At the integration level:

- to be able to use morphological, pathophysiological, pharmacological knowledge in the context of allergic diseases;
- to develop clinical reasoning, based on the principles of syndromic diagnosis, differential diagnosis of various nosological forms;
- to creatively address fundamental medicine issues;
- to integrate the theoretical knowledge of allergology in a clinical context;
- to create interrelations between allergology and other medical disciplines (oncology, intensive care, physiology);
- to be able to assimilate new trends in the clinical disciplines.

## IV. PREVIOUS CONDITIONS AND REQUIREMENTS

For good results in learning allergology is required:

- to possess knowledge of the teaching language;
- to have skills in modern information technologies (internet use, document processing, electronic tables and presentations, use of graphic programs);
- ability to communicate and work in a team;
- qualities - tolerance, compassion, autonomy;
- good knowledge of the discipline of allergology requires deep knowledge of the subjects studied in previous years (anatomy, normal and pathological physiology, medical semiology, internal medicine etc.).

## V. THEMES AND ESTIMATE ALLOCATION OF HOURS

Lectures, practical hours/ laboratory hours/seminars and self-training

Nb.	THEME	Number of hours		
		Lectures	Practical lessons	Individual work
1.	Elements of immunology. Hypersensitivity reactions Urticaria and angioedema. Anaphylaxis	2	3	8
2.	Drug allergy	1	3	8
3.	Food allergy. Anaphylaxis	2	3	8
4.	Allergic rhinitis	1	3	6
<b>Total</b>		<b>6</b>	<b>12</b>	<b>30</b>



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### VI. PRACTICAL WORKS PURCHASED AT THE END OF THE COURSE

The essential practical tasks are:

- Examination of a patient with allergic pathology, detection of clinical syndromes, argumentation of the diagnosis.
- Recognition of different morphological types of skin elements encountered in allergological pathology.
- Interpretation of the results of an allergen panel.
- How to perform skin tests (skin test, prick test, scar test, intradermal test), reading and interpreting their results, the advantages and disadvantages of each method.
- Description of the principle and technique of provocation tests, interpretation of their results.
- Description of the principle and technique of performing the specific desensitization treatment.
- Knowledge of the emergency medical aid protocol in case of anaphylactic shock.
- Knowledge of medical care protocol in case of laryngeal edema.

### VII. REFERENCE OBJECTIVES OF CONTENT UNITS

Objectives	Content units
<b>Chapter 1. Elements of immunology. Urticaria and angioedema..</b>	
- To define	Acute and chronic urticaria.
- To know	<ul style="list-style-type: none"><li>- The basics elements of immunology: antigens, antibodies, immune system components. Cellular and humoral immune response.</li><li>- Hypersensitivity reactions</li><li>- Spectrum of investigations used in allergy</li><li>- Methods of performing diagnostic tests in allergology</li><li>- Classification of urticaria and angioedema</li><li>- Differential diagnosis in urticaria, angioedema</li><li>- Treatment of urticaria, angioedema</li></ul>
- To demonstrate the ability	<ul style="list-style-type: none"><li>- To identify the clinical signs of type 1 hypersensitivity reaction</li><li>- To be able to provide emergency care in critical situations in case of a patient with urticaria, angioedema</li></ul>
- To apply	<ul style="list-style-type: none"><li>- Practical knowledge and skills in a clinical context</li></ul>
- To integrate	<ul style="list-style-type: none"><li>- Knowledge in the field of fundamental, preclinical and clinical disciplines.</li></ul>
<b>Chapter 2. Drug allergy</b>	
- To define	<ul style="list-style-type: none"><li>- Drug allergy</li></ul>
- To know	<ul style="list-style-type: none"><li>- The incidence of drug allergy</li><li>- Etiology, risk factors and pathogenesis</li><li>- Classification of clinical manifestations</li><li>- Clinical features of cutaneous manifestations</li><li>- Stages of clinical and laboratory diagnosis</li><li>- Principles of treatment</li></ul>



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Obiectives	Content units
- To demonstrate the ability	- To identify the clinical forms of drug allergy - To compile a list of differential diagnoses with entities with similar clinical and paraclinical picture - To select optimal treatment based on specific clinical syndromes
- To apply	- Knowledges and practical skills gained at the clinical examination of the patient
- To integrate	- Knowledges related to morphopathological changes that occur with their clinical expression
<b>Chapter 3. Food allergy. Anaphylaxis.</b>	
- To define	- Food allergy
- To know	- Epidemiological data of food allergy - Risk factors associated with food allergy - Pathogenetic mechanisms of food allergy - Intestinal barrier theory and oral tolerance - Allergic sensitization in food allergy - Cross reactivity - Oral allergy syndrome - The clinical picture of food allergy - The stages of diagnosing food allergy - Clinical manifestations in anaphylaxis - Investigations used to evaluate a patient with a food allergy - The principles of treatment of food allergy and anaphylaxis
- To demonstrate the ability	- To identify clinical signs of obstructive syndrome in the patient - To make a correct interpretation of the results of laboratory and paraclinical investigations - To select the optimal treatment depending on the severity - To react in case of medical emergency in case of a patient with anaphylaxis
- To apply	- Knowledges related to the ability to make a correct interpretation of allergic skin tests - Management of food allergy in emergency situations
- To integrate	- Knowledges related to pathophysiology of intestinal absorption with immunological tolerance - Knowledges of the digestive tract particularities in a child and the mechanisms of intestinal absorption
<b>Chapter 4. Allergic rhinitis</b>	
- To define	- Allergic rhinitis
- To know	- Epidemiological data, risk factors and classification of allergic rhinitis - The clinical picture of allergic rhinitis - The paraclinical methods used for allergic rhinitis - The importance of skin testing in allergen identification - Treatment of allergic rhinitis depending on severity - Desensitization



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Obiectives	Content units
- To demonstrate the ability	- To identify signs of allergic rhinitis in a patient with rhinitis - To make a correct interpretation of the results of laboratory and paraclinical investigations - Knowledge of the treatment of allergic rhinitis - Select the optimal treatment scheme according to severity
- To apply	- Knowledges of performing the clinical examination in allergic rhinitis - Management of allergic rhinitis depending on the type of allergic rhinitis (seasonal or perennial)
- To integrate	- Knowledges related to the pathophysiology of the type I hypersensitivity reaction and the morphological changes that may occur in the nasal mucosa - Knowledges about the anatomic particularities of nasopharynx in children and their predisposition for various associated chronic conditions (nasal polyposis, otitis media etc) - Knowledges of the pharmacological mechanisms of drugs used in the treatment of allergic rhinitis and their effectiveness at various stages of the disease.

### VIII. PROFESIONAL SKILLS (SPECIFIC (CS) AND TRANSVERSAL (CT) ) AND AT THE FINAL STEPS OF THE DISCIPLINE

#### • Professional skills (specific (CS))

- CP1. Careful implementation of professional duties respecting values and principles of professional ethics, as well as regulations of the current legislation.
- CP2. Knowledge of the sciences about the structure of the body, the physiological functions and behavior of the human body in various physiological and pathological conditions, as well as the relationships between health, physical and social environment.
- CP3. Resolving clinical situations by developing a plan for diagnosis, treatment and rehabilitation in various pathological situations and selecting appropriate therapeutic plan for them, including the provision of emergency medical care.
- CP4. Promoting a healthy lifestyle, applying prevention and self-care measures.
- CP5. Interdisciplinary integration of the doctor's activity in a team with efficient use of all resources.
- CP6. Carrying out scientific research in the field of health and other branches of science.

#### • Transversale competences (TC)

- CT1. Autonomy and responsibility in the activity.

#### • Study outcomes

- To know the evolutive particularities in allergic diseases
- To know the methodology of differential diagnosis in various allergic diseases
- To know the role of clinical, laboratory and instrumental investigations in allergic diseases
- To be able to select the optimal treatment for patients with various allergic conditions



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- To be able to deduce the interrelationships between allergology and other medical disciplines (pneumology, oncology, cardiology) by performing multidisciplinary integration
- To be able to learn new achievements in allergology on a daily basis

### IX. STUDENT'S SELF-TRAINING

No.	Expected product	Implementation strategies	Assessment criteria	Implementation terms
1.	Work with information sources	Reading the material presented in the course and in the textbook on the topic  Highlight topics that need reflection  Get acquainted with the list of additional information sources on the respective topic  Formulation of generalizations and conclusions regarding the importance of the approached topic.	The ability to extract the essential; Acting skills; Volume of work	Throughout the course
2.	Working with materials online	Studying online materials on sites with databases and specialized literature	Present the results at seminars	Throughout the course
3.	Application of various learning techniques		Volume of work Degree of insight into the essence of the subject Level of scientific argumentation Quality of conclusions Elements of creativity Demonstration of clinical reasoning	Throughout the course
4.	Examination of patients during practical work	Clinical examination of the patient, identification of the clinical syndrome directly in the patient, in laboratory and instrumental examination, learning the algorithm of diagnosis, differential diagnosis and individual treatment	Correct formulation and reasoning of the diagnosis, investigation and treatment plan of the specific patient	Throughout the course



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5.	Preparing and delivering presentations on various topics in pulmonology	Selection of the theme of presentations and terms of delivery	Volume of work Degree of insight into the essence of the subject Level of scientific argumentation Quality of conclusions Elements of creativity Personal attitude formation Graphic presentation Presentation mode	Throughout the course
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### X. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

The discipline of allergology is taught in the classical manner: lectures, signings and practical work. The theoretical support will be read in theoretic lessons.

***Practical work consists of:***

Patient care - the student examines and observes patients assigned to supervision on a daily basis. He/she participates in the patient's diagnostic process by being present at paraclinical examinations and specialist consultations.

The lecturer visits the patient with each student by checking the student's skill in collecting the anamnesis, physical examination of the patient, complete the clinical observation file, make the diagnosis, indicate the treatment, etc. Particular attention will be paid to clinical thinking, differential diagnosis, rationale for selecting the medication of choice.

The student studies the particularities of disease progression in the treated patients and the effectiveness of the treatment. Participates in clinical and clinical-morphological conferences.

At the **seminars** is being discussed and analyzed the most important chapters of allergology, such as etiology, pathophysiology, clinical picture, diagnosis and differential diagnosis, treatment and prophylaxis of allergological diseases.

Seminars can be conducted in a classical manner, in the form of discussion, or applying modern teaching methods that emphasize individual study by the student, teamwork skills, and creative work with guidance or direction from the lecturer of the seminar course. For each chapter discussed the lecturer makes a generalization.

The seminars can also be based on the analysis of clinical cases - cases will be selected whose diagnosis is more difficult, or patients with rarer pathologies of theoretical and practical interest. During the case study, students will identify certain clinical and laboratory features, and then by delving deeper into the theoretical subject they will be able to identify the entity and establish the diagnosis of the case discussed. The particularities of the evolution of the disease and cases of atypical evolution of the disease will be studied and analyzed. Differential diagnosis will be discussed. The treatment will be indicated, with a justification of each indication.

- **Applied teaching strategies / technologies (discipline-specific):**

"Group Interview"; "Case Study"; "The round table"; practical work at the patient's bed.





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- **Methods of assessment:**

**Current:** frontal and / or individual control by:

- discussion;
- analysis of clinical cases;
- solving the problems/clinical cases;
- test evaluation.

At the Allergology discipline - students' knowledge will be evaluated daily, with a mark for each seminar.

**Final:** examination.

### Rounding of final marks

Intermediate marks (media avarage, practical exam, american test)	National mark system	Equivalent ECTS
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,0	6	
6,01-6,50	6,5	D
6,51-7,00	7	
7,01-7,50	7,5	C
7,51-8,00	8	
8,01-8,50	8,5	B
8,51-8,00	9	
9,01-9,50	9,5	A
9,51-10,0	10	

The annual average mark will be composed of the arithmetic average of the marks obtained in the current assessments.

The final exam consists of 2 stages: computer-assisted test and oral theory answer.

The marks for the theoretical oral answer will be expressed in numbers according to the marking scale (see table).

The final mark will be obtained by applying the following formula:

$$\text{Final mark} = (\text{Annual average mark} \times 0,5) + (\text{Grid test} \times 0,2) + (\text{Oral theory answer} \times 0,3)$$

The final mark obtained will be expressed as a number with two decimals, which will be entered in the mark book.

*The absence from the exam without any serious reason is marked as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.*

## XI. RECOMMENDED LITERATURE:

### A. Compulsory:

1. Botnaru V. Medicină internă. Breviar Modulul Alergologie. Tipografia Balacron. Chișinău 2019

### B. Optional:

1. Harrison. Manual de medicină internă tradus în română, Dan L. Longo, Editura ALL, 2014
2. Botnaru V. Brocovschii V. și colegii. Elemente de IMUNOLOGIE. Tipografia Balacron. Chișinău 2020