



Syllabus for academic year: 2021/2022 Training cycle: 2019/2020 – 2024/2025													
Description of the course													
Course	Clinical Immunology										Group of detailed education results		
											Group code C	Group name Pre-clinical course	
Faculty	Faculty of Medicine												
Major	medicine												
Level of studies	<input checked="" type="checkbox"/> uniform magister studies <input type="checkbox"/> 1 <sup>st</sup> degree studies <input type="checkbox"/> 2 <sup>nd</sup> degree studies <input type="checkbox"/> 3 <sup>rd</sup> degree studies <input type="checkbox"/> postgraduate studies												
Form of studies	<input checked="" type="checkbox"/> full-time <input type="checkbox"/> part-time												
Year of studies	III						Semester:	<input type="checkbox"/> winter <input checked="" type="checkbox"/> summer					
Type of course	<input checked="" type="checkbox"/> obligatory <input type="checkbox"/> limited choice <input type="checkbox"/> free choice / optional												
Language of study	<input type="checkbox"/> Polish <input checked="" type="checkbox"/> English												
Number of hours													
Form of education													
	Lectures (L)	Seminars (SE)	Auditorium classes (AC)	Major Classes – not clinical (MC)	Clinical Classes (CC)	Laboratory Classes (LC)	Classes in Simulated Conditions (CSC)	Practical Classes with Patient (PCP)	Foreign language Course (FLC)	Physical Education (PE)	Vocational Practice (VP)	Directed Self-Study (DSS)	E-learning (EL)
<b>Winter semester:</b>													
..... (Dep. in charge of the course)													
Direct (contact) education <sup>1</sup>													
Distance learning <sup>2</sup>													
<b>Summer semester: 70</b>													
Clinical Immunology Department													
Direct (contact) education <sup>1</sup>		6		44									
Distance learning <sup>1</sup>	20												

<sup>1</sup> Education conducted with direct participation of university teachers or other academics

<sup>2</sup> Education with applied methods and techniques for distance learning



<b>TOTAL per year: 70</b>													
Clinical Immunology Department													
Direct (contact) education <sup>1</sup>		<b>6</b>		<b>44</b>									
Distance learning <sup>2</sup>	<b>20</b>												
<b>Educational objectives</b> (max. 6 items)													
<p><b>C1.</b> Providing the knowledge of the basics of the development and mechanisms of the immune system, components of immune reactions, characteristics of non-specific and specific humoral and cellular immunity, the role of the main histocompatibility system and regulation of the immune response.</p> <p><b>C2.</b> Providing knowledge about the types of hypersensitivity reactions, pathomechanism of hypersensitivity diseases (allergic and autoimmune diseases) and developing the ability to use knowledge in the field of immunomodulation.</p> <p><b>C3.</b> Providing knowledge about the basics of cancer immunology and the immunological aspects of transplantation as well as the principles of selecting the donor and transplant recipient.</p> <p><b>C4.</b> Providing the knowledge of primary and secondary immunodeficiencies as well as the principles and forms of immunotherapy.</p> <p><b>C5.</b> Acquiring the ability to plan the diagnostics of immune-based diseases, and the development of the ability to interpret the results of laboratory tests in connection with the clinical symptoms of the disease and an interview.</p> <p><b>C6.</b> Development social competences needed to practice the medical profession, in accordance with graduate's profile.</p>													
<b>Education result for course in relation to verification methods of the intended education result and the type of class:</b>													
Number of detailed education result	Student who completes the course knows/is able to						Methods of verification of intended education results			Form of didactic class <i>*enter the abbreviation</i>			
<b>C.W21.</b>	the basic development and mechanisms of action of the immune system, including specific and non-specific humoral and cellular immunity mechanisms						MCQ test			L			
<b>C.W22.</b>	major histocompatibility complex						MCQ test			L			
<b>C.W23.</b>	the types of hypersensitivity reactions, types of immunodeficiency and basics of immunomodulation						MCQ test			L			
<b>C.W24.</b>	issues in the field of cancer immunology						MCQ test			L, SE			
<b>C.W25.</b>	the genetic basis of donor and recipient selection and the basis of transplantation immunology						MCQ test			L			
<b>C.W31.</b>	the issues in detailed organ pathology, macroscopic and microscopic images and the clinical course of pathomorphological changes in individual organs						MCQ test			L			
<b>C.W32.</b>	the consequences of developing pathological changes on topographically adjacent organs						MCQ test			L			
<b>C.W42.</b>	the basic trends in the development of therapies, in particular the potential of cellular, gene and targeted therapies for specific diseases						MCQ test			L, SE			
<b>C.U8.</b>	use the antigen-antibody reaction in current modifications and techniques for the diagnosis of infectious, allergic, autoimmune and neoplastic diseases and blood disorders						execution of the commissioned task, MCQ test, oral answer			MC			



C.U11.	associate the images of tissue and organ damage with clinical signs of disease, history and laboratory findings	execution of the commissioned task, MCQ test, oral answer	MC
C.U12.	analyse the reactive, defensive and adaptive phenomena and impairment of regulation caused by the aetiological agent	execution of the commissioned task, MCQ test, oral answer	MC

\* L- lecture; SE- seminar; AC- auditorium classes; MC- major classes (non-clinical); CC- clinical classes; LC- laboratory classes; CSC- classes in simulated conditions; PCP- practical classes with patient; FLC- foreign language course; PE- physical education; VP- vocational practice; DSS- directed self-study; EL- E-learning

**Student's amount of work (balance of ECTS points):**

Student's workload (class participation, activity, preparation, etc.)	Student Workload
1. Number of hours of direct contact:	50
2. Number of hours of distance learning:	20
3. Number of hours of student's own work:	107,8
4. Number of hours of directed self-study	n/a
Total student's workload	177,8
<b>ECTS points for course</b>	<b>5,5</b>

**Content of classes:** (please enter topic words of specific classes divided into their didactic form and remember how it is translated to intended educational effects)

**Lectures (10 meetings x 2h)**

1. Human immune system - characteristics of cells involved in the immune response.
2. Nonspecific cellular and humoral immunity.
3. Specific (adaptive) immune response. The major histocompatibility complex - HLA.
4. The anti-infectious response. Vaccines.
5. The mechanisms of the immune response regulation. The role of cytokines.
6. Primary and secondary immune deficiencies.
7. Hypersensitivity type I, II, III and IV. The immune tolerance.
8. Mechanisms of autoimmune diseases.
9. The basics of tumor immunity.
10. The basics of transplant immunity.

**Seminars (2 meetings x 3h)**

1. Immunological aspects in oncology. Elements of reproductive immunology.
2. Immunological therapies in allergic, autoimmune and neoplastic diseases.

**Classes (11 meetings x 4h)**

1. Introduction to the immunology. The structure and basics of the immune system functioning. Possibilities of the immune parameter assessment.
2. Cellular immunity –the phenotype assessment.
3. Cellular immunity – the function assessment.
4. Humoral immunity – antibodies, the complement system, cytokines assessment.
5. Immune deficiencies. Diagnostics of primary and secondary immune deficiencies.
6. Hypersensitivity. Gell and Coombs classification. Allergic reactions. Allergy diagnostics.
7. Hypersensitivity – autoaggression. Detection of organ-specific and organ-non-specific autoantibodies.
8. Immune aspects of the respiratory and the digestive tract diseases.
9. Immune aspects of the circulatory and the nervous system diseases.
10. Immunohematology – selected aspects. Immune aspects of transplantation.
11. Re-take classes



**Basic literature** (list according to importance, no more than 3 items)

1. K. Abbas, A. H. Lichtman, S. Pillai: "Basic Immunology. Functions and disorders of the immune system"; Elsevier Saunders, 6<sup>th</sup> edition 2019
2. K. Abbas, A. H. Lichtman, S. Pillai: "Cellular and Molecular Immunology"; 9<sup>th</sup> Edition, Elsevier, 2017.
3. M. Peakman, D. Vergani: "Basic and Clinical Immunology"; 2<sup>nd</sup> edition Elsevier, 2009

**Additional literature and other materials** (no more than 3 items)

1. D. Male, J. Brostoff, D. Roth & I. Roitt: "Immunology", 8th Edition, Elsevier, 2012
2. "Allergy: European Journal of Allergy and Clinical Immunology"; Wiley Blackwell, Journal of Allergy and Clinical Immunology. Elsevier

**Preliminary conditions:** (minimum requirements to be met by the student before starting the course)

Credit for the course: anatomy, histology with cytophysiology, physiology.

**Conditions to receive credit for the course:** (specify the form and conditions of receiving credit for classes included in the course, admission terms to final theoretical or practical examination, its form and requirements to be met by the student to pass it and criteria for specific grades)

- The verification of knowledge is systematic - during each class, students orally answer the issues discussed in the previous class, in terms of knowledge and data analysis skills. Students are asked randomly, each student must have a grade from the oral answer, for a positive answer the student gets points (2 or 3). Failed oral answers require subsequent crediting.
- During classess, there are two mid-term tests (MCQ test - 20 questions, the pass threshold is 12 correct answers). Failed mid-term tests require subsequent crediting.
- Practical skills are assessed during each class by the teacher. The student should perform the practical part of the exercise on their own or with the help of an assistant. Completing excused absences takes place during the last catch-up classes.
- As part of the subject, students in groups prepare two presentations for the seminar, for completion.
- Each absence must be excused (sick leave) and credited.
- If the classes are not held for reasons beyond the students' control (rector / dean days / hours), at their request, the classes will be conducted on a different date agreed with the teacher or in groups of 4-6 students prepare essays / presentations on a fixed topic.

**The conditions for passing the course are** (the grade criteria are given in the table below):

- credit for two seminar presentations
- passing all practical exercises
- justification and credit for absences
- obtaining credit for two partial tests
- passing the oral answer
- obtaining a minimum of 26 points for mid-term tests and answers
- students who did not obtained the above criteria, during the last classes will write a final test on the entire material (MCQ test - 30 questions, the pass threshold is 18 correct answers).

Detailed rules for completing all forms of classes are specified in the didactic regulations of the subject.

Obtaining a course pass with a positive grade is a condition for admission to the theoretical exam. The exam takes place in direct contact with the teacher. In justified cases, the Rector's decision may take place remotely.

**The written exam (MCQ test type A, 1 verstraktor + 4 distractors) consists of 50 questions** testing knowledge at the factual level and understanding of phenomena related to disorders of the immune system as well as the ability to select and interpret the results of laboratory tests in relation to a specific pathology.



Grade:	Criteria for courses ending with a grade <sup>3</sup>
Very Good (5.0)	40-43 points from 3 mid-term tests and oral answer
Good Above (4.5)	37-39 points from 3 mid-term tests and oral answer
Good (4.0)	33-36 points from 3 mid-term tests and oral answer
Satisfactory Plus (3.5)	30-32 points from 3 mid-term tests and oral answer
Satisfactory (3.0)	26-29 points from 3 mid-term tests and oral answer / or >18 points from final test

Grade:	Criteria for exam <sup>3</sup>
Very Good (5.0)	94-100% 47-50 correct answers
Good Above (4.5)	86-92% 43-46 correct answers
Good (4.0)	78-84% 39-42 correct answers
Satisfactory Plus (3.5)	70-76% 35-38 correct answers
Satisfactory (3.0)	60-68% 30-34 correct answers

<b>Department in charge of the course:</b>	Departament of Clinical Immunology
<b>Department address:</b>	50-368 Wrocław, ul. Chałubińskiego 5
<b>Telephone:</b>	tel. 71 784 17 40, faks 71 784 04 17
<b>E-Mail:</b>	<a href="mailto:agnieszka.czerniawska@umed.wroc.pl">agnieszka.czerniawska@umed.wroc.pl</a>

<b>Person in charge for the course:</b>	Prof. Marek Jutel, MD
<b>Telephone:</b>	tel. 71 784 17 40, faks 71 784 04 17
<b>E-Mail:</b>	<a href="mailto:marek.jutel@umed.wroc.pl">marek.jutel@umed.wroc.pl</a>

List of persons conducting specific classes:				
Name and surname	Degree/scientific or professional title	Discipline	Performed profession	Form of classes
Marek Jutel	Prof., MD	Medical science	Academic teacher, doctor	L
Paweł Gajdanowicz	PhD	Medical science	Academic teacher	L, MC, SE
Ewa Sobańska	PhD		Academic teacher	L, MC, SE
Magdalena Zemelka-Wiącek	PhD	Medical science	Academic teacher	L, MC, SE
Ewa Wyrodek	PhD		Academic teacher	L, MC, SE
Anna Kosowska	PhD, MD	Medical science	Academic teacher, doctor	MC, SE
Sylwia Smolińska	PhD	Medical science	Academic teacher	MC, SE

**Date of Syllabus development**  
29.06.2021

**Syllabus developed by**  
Magdalena Zemelka-Wiącek.

**Signature of Head of teaching unit**

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**Dean's signature**

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<sup>3</sup> The verification must cover all education results, which are realized in all forms of classes within the course