

## DESCRIPTION OF THE COURSE OF STUDY

<b>Course code</b>	<b>0912-7LEK-C3.4-I</b>	
<b>Name of the course in</b>	Polish	<b>Immunologia</b>
	English	<b>Immunology</b>

### 1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

<b>1.1. Field of study</b>	Medicine
<b>1.2. Mode of study</b>	Full-time
<b>1.3. Level of study</b>	Uniform Master's studies
<b>1.4. Profile of study*</b>	General academic
<b>1.5. Specialization*</b>	Lack
<b>1.6. Unit running the course of study</b>	Faculty of Medicine and Health Sciences
<b>1.7. Person/s preparing the course description</b>	Prof. dr. hab. n. med. Robert Bucki, Dr hab. n. med. Marcin Pasiarski prof. UJK
<b>1.8. Person responsible for the course of study</b>	Dr hab. n. med. Marcin Pasiarski prof. UJK
<b>1.9. Contact</b>	marcinpasiarski@gmail.com

### 2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

<b>2.1. Affiliation with the module</b>	Preclinical sciences
<b>2.2. Language of instruction</b>	English
<b>2.3. Semesters in which the course of study is offered</b>	3rd
<b>2.4. Prerequisites*</b>	Anatomy, Histology, Physiology, Pathophysiology, Microbiology

### 3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

<b>3.1. Form of classes</b>	LECTURE - 15 , CLASSES – 30	
<b>3.2. Place of classes</b>	Lecture/Classes - Courses in the teaching rooms of the Department of Hematology, Holycross Cancer Centre	
<b>3.3. Form of assessment</b>	LECTURES– E, CLASSES Zo (Credit with grade)	
<b>3.4. Teaching methods</b>	Practical Classes, Informative lecture, Discussion	
<b>3.5. Bibliography</b>	<b>Required reading</b>	<ol style="list-style-type: none"> <li>Basic immunology Function and disorders of the immune system 5e (5th Edition) by Abul K. Abbas, Shiv Pillai</li> <li>Immunology: A Short Course (Coico, Immunology) 7th Edition by Richard</li> </ol>
	<b>Further reading</b>	<ol style="list-style-type: none"> <li>Microbiology and Immunology (Board Review Series) Sixth Edition by Louise Hawley MD, Benjamin Clarke Ph.D, Richard J. Ziegler PhD</li> <li>Autoantibodies, 3rd Edition (editors: Shoenfeld, Meroni, Gershwin)</li> </ol>

### 4. OBJECTIVES, SYLLABUS CONTENT AND INTENDED TEACHING OUTCOMES

<p><b>4.1. Course objectives (including form of classes)</b></p> <p>The student should acquire knowledge in the scope of:</p> <ol style="list-style-type: none"> <li>The structure and functions of the immune system (lecture).</li> <li>Types of immune response (classes).</li> <li>The structure and role of the major histocompatibility complex HLA (lecture).</li> <li>The development of immunological tolerance and autoimmunity (classes).</li> <li>Types of hypersensitivity reactions (classes).</li> <li>The basis of tumor immunology (lecture).</li> <li>Immunology of neonatal and childhood period (classes).</li> <li>Immune responses against infectious diseases (classes). Passive and active immunoprophylaxis (classes).</li> <li>Primary versus secondary immunodeficiencies (classes).</li> <li>Effects of aging on the immune system (lecture).</li> </ol> <p>The student should be able to: plan immunological tests as a part of diagnosis of autoimmune diseases, allergic diseases, haematological malignancies, primary and secondary immunodeficiency disorders, interprets the results of above studies and plans the schedule of immunomodulatory treatment.</p>
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**4.2. Detailed syllabus (including form of classes)**

Course contents

Subject Form (lecture, classes, etc...)

**Lectures**

1. LECTURE 1. General information related to Immunology course. Milestones in the development of the doctrine of immunity. Structure and function of the immune system (duration of the meeting 3x45 minutes)
2. LECTURE 2. The types of immune response – innate and acquired immunity (duration of the meeting 2x45 minutes)
3. LECTURE 3. Major histocompatibility complex. Transplantations (duration of the meeting 2x45 minutes)
4. LECTURE 4. Overview of tumor immunology (duration of the meeting 2x45 minutes)
5. LECTURE 5. Effects of aging on the immune system. Immunomodulation (duration of the meeting 2x45 minutes)
6. LECTURE 6. Vaccines and vaccinations (duration of the meeting 2x45 minutes)
7. LECTURE 7. Hypersensitivity reactions (duration of the meeting 2x45 minutes)

**Classes**

1. CLASSES 1. Cells of the immune system. Evaluation of the immune system in clinical practice (duration of the meeting 3x45 minutes)
2. CLASSES 2. Immunological methods: flow cytometry, enzyme-linked immunosorbant assay, western blot, immunoprecipitation (duration of the meeting 3x45 minutes)
3. CLASSES 3. Infectious agents and immunity (duration of the meeting 3x45 minutes)
4. CLASSES 4. Primary immunodeficiency disorders. Case studies (duration of the meeting 3x45 minutes)
5. CLASSES 5. Secondary immunodeficiency disorders. Case studies (duration of the meeting 3x45 minutes)
6. CLASSES 6. Autoimmune disorders. Case studies (duration of the meeting 3x45 minutes)
7. CLASSES 7. Allergy – clinical manifestations, diagnosis and treatment. Case studies (duration of the meeting 3x45 minutes)
8. CLASSES 8. Reproductive immunology. Case studies (duration of the meeting 3x45 minutes)
9. CLASSES 9. Immunoprophylaxis and immunomodulatory treatment. Case studies (duration of the meeting 3x45 minutes)
10. CLASSES 10. Interpretation of the results of immunological tests (duration of the meeting 3x45 minutes)

Code	A student, who passed the course	Relation to teaching outcomes
within the scope of <b>KNOWLEDGE:</b>		
W01	knows the basis for the development and the mechanisms of the immune system, including specific and non-specific mechanisms of humoral and cellular immunity;	C.W20.
W02	describes major histocompatibility complex;	C.W21.
W03	knows the types of hypersensitivity reactions, types of immunodeficiency and immunomodulation base;	C.W22.
W04	understands the issues concerning the immunology of cancer;	C.W23.
W05	defines the genetic basis for selection of the donor and recipient and the basics of the immunology of transplantation;	C.W24.
within the scope of <b>ABILITIES:</b>		
U01	uses the antigen - antibody reaction in current modifications and techniques for the diagnosis of infectious diseases, allergies, autoimmune diseases, blood diseases and cancer;	C.U8.
U02	analyses defensive and adaptation reactions as well as regulation disorders caused by the etiological factor;	C.U12.
within the scope of <b>SOCIAL COMPETENCE:</b>		
K01	student is conscious of the need of learning through the whole life, inspiration and organization of learning process for other persons in a scope of issues which are put in the studied subject;	K1A_K01
K02	student is eager to cooperate and work in a team for solving the problems which are put in a scope of studied subject	K1A_K02

#### 4.4. Methods of assessment of the intended teaching outcomes

Teaching outcomes (code)	Method of assessment (+/-)																				
	Exam oral/written*			Test*			Project*			Effort in class*			Self-study*			Group work*			Others*		
	Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes			Form of classes		
	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...	L	C	...
W01	+	+		-	+		-	+		-	+		+	+		-	+		-	-	
W02	+	+		-	+		-	+		-	+		+	+		-	+		-	-	
W03	+	+		-	+		-	+		-	+		+	+		-	+		-	-	
W04	+	+		-	+		-	+		-	+		+	+		-	+		-	-	
W05	+	+		-	+		-	+		-	+		+	+		-	+		-	-	
U01	-	+		-	+		-	+		-	+		+	+		-	+		-	-	
U02	-	+		-	+		-	+		-	+		+	+		-	+		-	-	
K01	-	-		-	-		-	+		-	+		-	+		-	+		-	-	
K02	-	-		-	-		-	+		-	+		-	+		-	+		-	-	

\*delete as appropriate

#### 4.5. Criteria of assessment of the intended teaching outcomes

Form of classes	Grade	Criterion of assessment
Lecture (L)	3	Learning programme content on the basic level, replies chaotic, leading questions necessary.
	3,5	Learning programme content on the basic level, answers systematized, requires assistance from the teacher.
	4	Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations.
	4,5	The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations
	5	The scope of presented knowledge exceeds the basic level based on independently acquired scientific sources of information.
classes (C)*	3	From 50% Learning programme content on the basic level, replies chaotic, leading questions necessary.
	3,5	From 62,5% Learning programme content on the basic level, answers systematized, requires assistance from the teacher.
	4	Learning programme content on the basic level, answers systematized, independent. Solving of problems in typical situations
	4,5	From 82,5% The scope of presented knowledge exceeds the basic level based on the supplementary literature provided. Solving of problems in new complex situations
	5	From 90% The scope of presented knowledge goes beyond the primary level based on independently gained scientific sources of information

#### Conditions for obtaining credit

1. Condition for admission to the examination is the completion of all classes (including written tests) as well as presence in all lectures.
2. Practical and theoretical knowledge required, not only the current subject, but also aspects previously discussed and related to the course subject.
3. All students will be assessed during each class.
4. The grade, including insufficient can be improved only once within 14 days, during subsequent classes. Test correction will be performed within two weeks.
5. Study Regulations do not allow an unexcused absence. An unexcused absence can be fulfilled during next class.
6. The assistant conducting classes with the group of students is responsible for the above mentioned organizational matters
7. A final written exam.

**Criteria for evaluation of oral answer**

1. Provision of a comprehensive answer to the problem (task)
2. Skill of integration of knowledge from allied domains (disciplines)
3. Independence and/or creativity in the presentation of the scope of problems, proposals of solutions
4. Presentation of the current knowledge related with the discipline (domain)
5. Recognition of problems resulting from the task

**Criteria for evaluation of written answer**

1. Compliance with the essence of the subject matter of work (task) /
2. Provision of a comprehensive answer to the problem (task) /
3. Skill of integration of knowledge from allied domains (disciplines) /
4. Independence and/or creativity in the presentation of the scope of problems
5. Presentation of the current knowledge related with the discipline (domain), pertinent selection of literature

**5. BALANCE OF ECTS CREDITS – STUDENT’S WORK INPUT**

Category	Student's workload
	Full-time studies
<i>NUMBER OF HOURS WITH THE DIRECT PARTICIPATION OF THE TEACHER /CONTACT HOURS/</i>	<b>45</b>
<i>Participation in lectures*</i>	<b>15</b>
<i>Participation in classes, seminars, laboratories*</i>	<b>30</b>
<i>Preparation in the exam/ final test*</i>	
<i>Others*</i>	
<i>INDEPENDENT WORK OF THE STUDENT/NON-CONTACT HOURS/</i>	<b>30</b>
<i>Preparation for the lecture*</i>	<b>15</b>
<i>Preparation for the classes, seminars, laboratories*</i>	<b>15</b>
<i>Preparation for the exam/test*</i>	
<i>Gathering materials for the project/Internet query*</i>	
<i>Preparation of multimedia presentation</i>	
<i>Others*</i>	
<b>TOTAL NUMBER OF HOURS</b>	<b>75</b>
ECTS credits for the course of study	<b>3</b>

**Accepted for execution** (date and signatures of the teachers running the course in the given academic year)

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