

**Subject card**

Subject name and code	Basic of medical immunology , PG_00153623						
Field of study	Biotechnology						
Date of commencement of studies	October 2024	Academic year of realisation of subject			2024/2025		
Education level	Master's studies	Subject group			Obligatory subject group in the field of study		
Mode of study	full-time studies	Mode of delivery			at the university		
Year of study	1	Language of instruction			Polish English is the official language of the course		
Semester of study	2	ECTS credits			3.0		
Learning profile	academic	Assessment form					
Conducting unit	Intercollegiate Faculty of Biotechnology UG-MUG -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		prof. dr hab. Marcin Okrój				
	Teachers		prof. dr hab. Marcin Okrój				
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	0.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		40.0	75
Subject objectives	The course aims to make students familiar with the structure and organization of the immune system. During the lectures, students will learn the principles of innate and adaptive immunity. Detailed knowledge about molecular mechanisms of antigen presentation, production of antibodies, cellular response, eradication of pathogens and tumor cells as well as pathomechanisms of chosen autoimmune diseases and immunodeficiencies will be provided. <b>The lectures are taught in English.</b>						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[BIOTECHMU2_W03] The graduate knows and understands general concepts of therapy and diagnostic methods of human diseases, including the mechanisms of action of selected drugs, immunotherapy and gene therapy		The student knows the pathogenesis of chosen diseases of the immune system and immune deficiencies. The student knows the challenges that emerge from bacterial, viral, and fungal infections as well as the principles of dedicated therapies and immunotherapy.		[SW4] test/exam - oral or written		
	[BIOTECHMU2_W01] The graduate knows and understands complex biological phenomena at the molecular level, their importance for biotechnology		The student knows the pillars and organization of the immune system. The student knows molecular mechanisms that enable the functionality of the immune system and the activity of its particular components.		[SW4] test/exam - oral or written		

Subject contents	<p>1. Evolution of immune system. General characteristics of human immune system: cells and organs of immune system, innate and acquired immunity, role of bone marrow</p> <p>2. Mechanisms of innate immunity: skin, tissue and organ barriers, secretions, PAMP, DAMP, PRRs, phagocytes, complement system, ADCC and CDCC activities</p> <p>3. Mechanisms of acquired immunity: development and selection of B and T lymphocytes, rearrangement of genes coding for antibodies and TCR, subpopulations of lymphocytes, major histocompatibility complex (MHC), signal transduction through antigen-binding receptors, immune deficiencies, production and application of poly- and monoclonal antibodies</p> <p>4. Communication between components of immune system, cytokines</p> <p>5. Antiviral and anti-infection response</p> <p>6. Autoimmunity and hypersensitivity reactions</p> <p>7. Role of programmed cell death in immunology</p> <p>8. Tumor immunology</p> <p>9. Psychoneuroimmunology</p>											
Prerequisites and co-requisites	Admission to the lecture exam is possible after passing the laboratory exercises in the subject.											
Assessment methods and criteria	<table border="1" data-bbox="448 978 1477 1106"> <thead> <tr> <th data-bbox="448 978 794 1010">Subject passing criteria</th> <th data-bbox="794 978 1141 1010">Passing threshold</th> <th data-bbox="1141 978 1477 1010">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td data-bbox="448 1010 794 1070">students' activity and answers during the lectures</td> <td data-bbox="794 1010 1141 1070">0.0%</td> <td data-bbox="1141 1010 1477 1070">0.0%</td> </tr> <tr> <td data-bbox="448 1070 794 1106">single choice test</td> <td data-bbox="794 1070 1141 1106">51.0%</td> <td data-bbox="1141 1070 1477 1106">100.0%</td> </tr> </tbody> </table>			Subject passing criteria	Passing threshold	Percentage of the final grade	students' activity and answers during the lectures	0.0%	0.0%	single choice test	51.0%	100.0%
Subject passing criteria	Passing threshold	Percentage of the final grade										
students' activity and answers during the lectures	0.0%	0.0%										
single choice test	51.0%	100.0%										
Recommended reading	<table border="1" data-bbox="448 1113 1477 1727"> <tbody> <tr> <td data-bbox="448 1113 794 1451">Basic literature</td> <td colspan="2" data-bbox="794 1113 1477 1451"> <ol style="list-style-type: none"> <li>1. A.K. Abbas Cellular and Molecular Immunology (5th edition. 2003)</li> <li>2. Immunologia pod redakcją Jakuba Gołąba, Marka Jakóbsiaka i Witolda Laska, PWN 2007 (Polish)</li> <li>3. Roitts Essential Immunology, 12th edition (2006)</li> <li>4. Goldsby Kuby Immunology, 7th Edition (2013)</li> </ol> </td> </tr> <tr> <td data-bbox="448 1451 794 1697">Supplementary literature</td> <td colspan="2" data-bbox="794 1451 1477 1697"> <ol style="list-style-type: none"> <li>1. C.A. Janeway Immunobiology, 5th Edition</li> <li>2. R.R. Rich Clinical Immunology, 3rd Edition</li> <li>3. Nature Reviews Immunology (journal)</li> </ol> </td> </tr> <tr> <td data-bbox="448 1697 794 1727">eResources addresses</td> <td colspan="2" data-bbox="794 1697 1477 1727">Adresy na platformie eNauczanie:</td> </tr> </tbody> </table>			Basic literature	<ol style="list-style-type: none"> <li>1. A.K. Abbas Cellular and Molecular Immunology (5th edition. 2003)</li> <li>2. Immunologia pod redakcją Jakuba Gołąba, Marka Jakóbsiaka i Witolda Laska, PWN 2007 (Polish)</li> <li>3. Roitts Essential Immunology, 12th edition (2006)</li> <li>4. Goldsby Kuby Immunology, 7th Edition (2013)</li> </ol>		Supplementary literature	<ol style="list-style-type: none"> <li>1. C.A. Janeway Immunobiology, 5th Edition</li> <li>2. R.R. Rich Clinical Immunology, 3rd Edition</li> <li>3. Nature Reviews Immunology (journal)</li> </ol>		eResources addresses	Adresy na platformie eNauczanie:	
Basic literature	<ol style="list-style-type: none"> <li>1. A.K. Abbas Cellular and Molecular Immunology (5th edition. 2003)</li> <li>2. Immunologia pod redakcją Jakuba Gołąba, Marka Jakóbsiaka i Witolda Laska, PWN 2007 (Polish)</li> <li>3. Roitts Essential Immunology, 12th edition (2006)</li> <li>4. Goldsby Kuby Immunology, 7th Edition (2013)</li> </ol>											
Supplementary literature	<ol style="list-style-type: none"> <li>1. C.A. Janeway Immunobiology, 5th Edition</li> <li>2. R.R. Rich Clinical Immunology, 3rd Edition</li> <li>3. Nature Reviews Immunology (journal)</li> </ol>											
eResources addresses	Adresy na platformie eNauczanie:											

<p>Example issues/ example questions/ tasks being completed</p>	<p>NET is an acronym of:</p> <ul style="list-style-type: none"> <li>a) neutrophil extracellular trap</li> <li>b) neuroendocrine eotaxin transporter</li> <li>c) non-essential transcytosis (e.g. of sIgA)</li> <li>d) none of above</li> </ul> <p>Specialized phagocytes are common in:</p> <ul style="list-style-type: none"> <li>a) all animals</li> <li>b) some invertebrates and all vertebrates</li> <li>c) higher plants and vertebrates</li> <li>d) only in vertebrates</li> </ul>
<p>Work placement</p>	<p>Not applicable</p>

Document generated electronically. Does not require a seal or signature.