

**DOCTORAL SCHOOL AT THE MEDICAL UNIVERSITY OF BIALYSTOK**  
**In the discipline of pharmaceutical sciences, medical sciences and health sciences**

**DOCTORAL SCHOOL'S PLAN – academic year 2024/2028 – according to the educational cycle  
2024-2028**

No.	Module/subject name	Class times			ECTS	Form of credits	
		Year 1					
		Total	including:				
Lectures	Seminars		Classes				
1.	<b>Health and Safety principles in scientific and didactic work</b>	4	2	-	2	-	Credit
	<i>University Health and Safety Inspector (Department of Hygiene, Epidemiology and Ergonomics)</i>		2	-	-		
	<i>University unit in which the doctoral student conducts scientific research</i>		-	-	1		
	<i>University unit in which the doctoral student conducts didactic research</i>		-	-	1		
2.	<b>Biostatistics in scientific research - basic statistical methods</b> <i>Department of Biostatistics and Medical Informatics</i>	20	6	-	14	2	Exam
3.	<b>Specialist English - developing academic language skills</b> <i>Department of Foreign Languages</i>	30	-	-	30	2	Credit
4.	<b>Bioethics and law in biomedical research</b>	10	-	10	-	1	Credit
	<i>Department of Psychology and Philosophy</i>		-	2	-		
	<i>Department of Medicinal Chemistry</i>		-	4	-		
	<i>Physiology and Experimental Pathophysiology Department</i>		-	4	-		
5.	<b>Basics of entrepreneurship</b>	12	-	12	-	1	Credit
	<i>Department of Medicinal Chemistry</i>		-	3	-		
	<i>University Units designated by the Doctoral School Director</i>		-	9	-		
6.	<b>Methods of obtaining grants</b> <i>University Units designated by the Doctoral School Director</i>	4	-	4	-	1	Credit
7.	<b>Progress in scientific research methodology I (2 topics to be selected - 10 h)</b>	10	-	-	10	2*	Credit
	<b>Research methods in assessing biological activity of new compounds (in vitro research)</b> <i>Department of Medicinal Chemistry</i>	5	-	-	5		
	<b>Methods of molecular imaging in diagnostics and therapy</b> <i>Department of Medicinal Chemistry</i>	5	-	-	5		
	<b>Preventive method</b> <i>Department of Population Medicine and Lifestyle Diseases Prevention</i>	5	-	-	5		
	<b>Population studies - methodology, interpretation</b> <i>Department of Population Medicine and Lifestyle Diseases Prevention</i>	5	-	-	5		
	<b>Application of qualitative methods in health sciences</b> <i>Department of Obstetrics, Gynaecology and Maternity Care</i>	5	-	-	5		
	<b>Methods of collecting and analysing data in epidemiological research for the purposes of reparative medicine</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		
	<b>Methods of collecting and analysing data in epidemiological research for the purposes of health promotion and disease prevention</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		
8.	Facultative classes (2 topics to be selected - 20 hours) – <b>Principles of elaborating and preparing presentations of scientific study results (10 h)</b>	20	-	20	-	2**	Credit

	<i>Department of Toxicology</i> – <b>From manuscript to published work</b> (10 h) <i>Department of Toxicology</i> – <b>Principles and methods of assessing safety of chemical substances, drugs and medical products</b> (10 h) <i>Department of Toxicology</i> – <b>Thinking in a business mode - Canvas business model</b> (10 h) <i>University Units designated by the Doctoral School Director</i>						
9.	<b>Methods of statistical planning and analysing scientific research</b> <i>Department of Biostatistics and Medical Informatics</i>	20	10	-	10	2	<b>Exam</b>
10.	<b>Doctoral seminar I</b> Presentation of individual research plan <i>Doctoral School Director</i>	11	-	11	-	1	Credit
11.	<b>Conduct of didactic classes.</b> <i>Designated UMB unit</i>	60	-	-	60	2	Credit
12.	<b>Doctoral LAB I</b> (Realization of individual research plan of the doctoral student) <i>Designated UMB unit</i>	600	-	-	600	-	Credit
	<b>Total</b>	<b>141 + 60 + 600</b>	<b>18</b>	<b>57</b>	<b>66 + 60 + 600</b>	<b>16</b>	<b>2 exa ms</b>

\* ECTS points in the volume of 2 will be granted after realizing 10 h of selected classes under the module “Progress in methodology of scientific research I”

\*\* ECTS points in the volume of 2 will be granted after realizing 20 h of classes under the module “Facultative classes I”

Plan of approval on 04.01.2024 by the Programme Committee of the Doctoral School at UMB in accordance with the resolution no. 21/2020 of the Senate of the Medical University of Białystok from 16.01.2020

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No.	Module/subject name	Class times				ECTS	Form of credits
		Year II					
		Total	including:				
Lectures	Seminars		Classes				
1.	<b>Specialist English - developing academic language skills</b> <i>Knowledge of foreign languages</i>	30	-	-	30	2	Exam
2.	<b>Biostatistics in scientific research - advanced statistical methods</b> <i>Department of Biostatistics and Medical Informatics</i>	20	8	-	12	2	Exam
3.	<b>Progress in scientific research methodology II</b> (1- 2 topics to be selected - 10 h)	10	-	-	10	2*	
	<b>Modern analytical techniques in biomedical and pharmaceutical research</b> <i>Department of Inorganic and Analytical Chemistry</i>	10	-	-	10		Credit
	<b>Advanced analytical techniques in omics research</b> <i>Department of Inorganic and Analytical Chemistry</i>	10	-	-	10		Credit
	<b>Histomorphological techniques in assessing the functionality of cells in physiology and pathological states</b> <i>Department of Histology and Cytophysiology</i>	5	-	-	5		Credit
	<b>Modern design methods and drug synthesis</b> <i>Department of Synthesis and Technology of Drugs</i>	5	-	-	5		Credit
	<b>Proteomics techniques in diagnostics of nervous system diseases</b> <i>Department of Neurodegeneration Diagnostics</i>	5	-	-	5		Credit
	<b>Personalized medicine</b> <i>Department of Population Medicine and Lifestyle Diseases Prevention</i>	5	-	-	5		
	<b>Planning and interpreting descriptive epidemiology research - cross-sectional studies, correlation studies, studies of trends and inequalities</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		Credit
	<b>Planning and interpreting analytical epidemiology studies - cohort studies</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		Credit
<b>Planning and interpreting analytical epidemiology studies - clinical-control studies</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5	Credit		
4.	<b>Foreign expert lecture</b> <i>Department of Neurodegeneration Diagnostics</i>	4	4	-	-	1	Credit
5.	<b>Interdisciplinary summer school in the scope of civilization diseases</b> <i>Doctoral School Director</i>	10	-	10	-	1	Credit
6.	<b>Law in medicine</b> <i>Department of Medical Law and Medical Deontology</i>	5	5	-	-	1	Credit
7.	<b>Interdisciplinary lecture</b> <i>Doctoral School Director/invited expert</i>	5	5	-	-	1	Credit

8.	<b>Didactic faculty</b> (2 topics to be selected - 10 hours): – <b>Interpersonal and environmental communication</b> (5h) <i>Department of Psychology and Philosophy</i> – <b>Methodology and assessment of learning results</b> (5h) <i>Department of Psychology and Philosophy</i> – <b>Didactics directed at educational success of students</b> (5 h) <i>Department of Psychology and Philosophy</i> – <b>Psychopedagogy</b> (5h) <i>Department of Psychology and Philosophy</i> – <b>Psychopedagogical diagnostics</b> (5h) <i>Department of Psychology and Philosophy</i> – <b>Design thinking in theory and experimental practice</b> (5h) <i>Department of Bromatology</i> – <b>Education focused on the students, the so-called Student Cantered Learning</b> (5h) <i>Department of Bromatology</i> – <b>Professionalism in medicine</b> (5h) <i>Department of Psychology and Philosophy</i>	10	-	10	-	1**	Credit
9.	<b>Doctoral seminar II</b> Presentation of individual research plan realization <i>Doctoral School Director</i>	10	-	10	-	1	Credit
10.	<b>Conduct of didactic classes.</b> <i>Designated UMB unit</i>	60	-	-	60	2	Credit
11.	<b>Doctoral LAB II</b> (Realization of individual research plan of the doctoral student) <i>Designated UMB unit</i>	800	-	-	800	-	Credit
	<b>Total</b>	<b>104 + 60 + 800</b>	<b>22</b>	<b>30</b>	<b>52 + 60 + 800</b>	<b>14</b>	<b>2 exams</b>

\* ECTS points in the volume of 2 will be granted after realizing 10 h of selected classes under the module “Progress in methodology of scientific research II”

\*\* ECTS points in the volume of 1 will be granted after realizing 10 h of classes under the module “Didactic Faculty”

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No.	Module/subject name	Class times				ECTS	Form of credits
		Year III					
		Total	including:				
Lectures	Seminars		Classes				
1.	<b>Progress in scientific research methodology III</b> (3- 4 topics to be selected - 20 h)	20	-	-	20	3*	
	<b>Metabolomics in identifying biomarkers of diseases and pharmacotherapy grip points</b> <i>Department of Pharmaceutical and Biopharmaceutical Analysis</i>	10	-	-	10		Credit
	<b>Application of in-vivo confocal microscopy in biomedical research and in pursuit of new drugs</b> <i>Department of Biopharmacy</i>	5	-	-	5		Credit
	<b>Application of immunoblotting techniques in biomedical-pharmaceutical tests</b> <i>Department of Immunology</i>	5	-	-	5		Credit
	<b>Receptor tests in isolated organs</b> <i>Department of Experimental Physiology and Pathophysiology</i>	5	-	-	5		Credit
	<b>Flow cytometry - possibilities of application in biomedical and pharmaceutical research</b> <i>Department of Pharmaceutical Biochemistry</i>	5	-	-	5		Credit
	<b>Application of the method of isoelectrofocusing in diagnosing neurodegenerative diseases</b> <i>Department of Neurodegeneration Diagnostics</i>	5	-	-	5		Credit
	<b>Clinical and experimental epidemiology</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		Credit
	<b>Construing an epidemiological research protocol</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5		Credit
<b>Meta analysis</b> <i>Department of Hygiene, Epidemiology and Ergonomics</i>	5	-	-	5	Credit		
2.	<b>Foreign expert lecture</b> <i>Department of Neurodegeneration Diagnostics</i>	4	4	-	-	1	credit
3.	<b>Facultative classes II</b> (1 or 2 topics to be selected - 10 hours) – <b>Civilization diseases as an interdisciplinary problem</b> (5h) <i>Department of Medicinal Chemistry</i> – <b>Immunology aspects of biomedical-pharmaceutical research</b> (5h) <i>Department of Immunology</i> – <b>Progress in molecular biology</b> (5h) <i>Department of Medicinal Chemistry</i> – <b>Biotechnological methods in biomedical-pharmaceutical research</b> (5h) <i>Department of Biotechnology</i> – <b>Pharmacotherapy of cancer diseases</b> (5h) <i>Department of Medicinal Chemistry</i>	10	-	10	-	2**	Credit

	<ul style="list-style-type: none"> <li>– <b>Pre-clinical tests of new compounds with potential importance for pathophysiology of the circulatory system</b> (5h) <i>Department of Experimental Physiology and Pathophysiology</i></li> <li>– <b>Interactions of medications with food</b> (5h) <i>Department of Bromatology</i></li> <li>– <b>Metabolomics</b> (5h) <i>Clinical Research Centre</i></li> <li>– <b>Planning, realizing and assessing the effects of programmes concerning population health</b> (10h) <i>Department of Hygiene, Epidemiology and Ergonomics</i></li> <li>– <b>How to achieve scientific success in an international area</b> (5h) <i>Department of Psychology and Philosophy</i></li> </ul>						
4.	<b>Doctoral seminar III</b> Methodology of tests conducted under realization of individual research plans <i>Doctoral School Director</i>	15	-	15	-	1	Credit
5.	<b>Conduct of didactic classes.</b> <i>Designated UMB unit</i>	60	-	-	60	2	Credit
6.	<b>Doctoral LAB III</b> (Realization of individual research plan of the doctoral student) <i>Designated UMB unit</i>	800	-	-	800	-	Credit
	<b>Total</b>	<b>49 + 60 + 800</b>	<b>4</b>	<b>25</b>	<b>20 + 60 + 800</b>	<b>9</b>	<b>-</b>

\* ECTS points in the volume of 3 will be granted after realizing 20 h of selected classes under the module “Progress in methodology of scientific research III”

\*\* ECTS points the volume of 2 will be granted after realizing 10 h of classes under the module “Facultative classes II”

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No.	Module/subject name	Class times			ECTS	Form of credits	
		Year 4					
		Total	including:				
Lectures	Seminars		Classes				
1.	<b>Doctoral seminar IV</b> Presentation of doctoral dissertation outcomes <i>Doctoral School Headmaster</i>	10	-	10	-	1	Credit
2.	<b>Conduct of didactic classes.</b> <i>Designated UMB unit</i>	60	-	-	60	2	Credit
3.	<b>Doctoral LAB IV</b> (Realization of individual research plan of the doctoral student) <i>Designated UMB unit</i>	350	-	-	350	-	Credit
	<b>Total</b>	<b>10 + 60 + 350</b>	<b>-</b>	<b>10</b>	<b>60 + 350</b>	<b>3</b>	<b>-</b>

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