

**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 2026/2027 – according to the educational cycle 2026-2030**

| No.      | Module/subject name  | Hours of classes |                   |    | ECTS points | Form of crediting |        |
|----------|--|------------------|-------------------|----|-------------|-------------------|--------|
|          |  | Year 1           |                   |    |             |                   |        |
|          |  | Total            | including:        |    |             |                   |        |
| Lectures | Seminars   |                  | Practical Classes |    |             |                   |        |
| 1.       | <b>Health and Safety principles in scientific and didactic work</b>  | 4                | 2                 | -  | 2           | -                 | Credit |
|          | <i>University Health and Safety Inspector (Hygiene, Epidemiology and Ergonomics Department)</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><br><i>Department of Biostatistics and Medical Informatics</i>  | 20               | 6                 | -  | 14          | 2                 | Exam   |
| 3.       | <b>Specialist English - developing academic language skills</b><br><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>Department of Experimental Physiology and Pathophysiology</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 Director of the Doctoral School</i>  |                  | -                 | 9  | -           |                   |        |
| 6.       | <b>Methods of obtaining grants</b><br><i>University Units designated by the Director of the Doctoral School</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 (<i>in vitro</i> research)</b><br><i>Department of Medicinal Chemistry</i>   | 5                | -                 | -  | 5           |                   |        |
|          | <b>Methods of molecular imaging in diagnostics and therapy</b><br><i>Department of Medicinal Chemistry</i>   | 5                | -                 | -  | 5           |                   |        |
|          | <b>Preventive method</b><br><i>Population Medicine and Lifestyle Diseases Prevention</i>   | 5                | -                 | -  | 5           |                   |        |
|          | <b>Population studies - methodology, interpretation</b><br><i>Department of Population Medicine and Lifestyle Diseases Prevention</i>  | 5                | -                 | -  | 5           |                   |        |
|          | <b>Application of qualitative methods in health sciences</b><br><i>Department of Developmental Age Medicine and Paediatric Nursing</i>   | 5                | -                 | -  | 5           |                   |        |
|          | <b>Methods of collecting and analysing data in epidemiological research for the purposes of reparative medicine</b><br><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><br><i>Department of Hygiene, Epidemiology and Ergonomics</i> | 5                | -                 | -  | 5           |                   |        |
| 8.       | <b>Facultative classes (2 topics to be selected - 20 hours)</b><br>– <b>Principles of elaborating and preparing presentations of scientific study results (10 hours)</b>                             | 20               | -                 | 20 | -           | 2**               | Credit |

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

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**DOCTORAL SCHOOL'S PLAN – academic year 2027/2028 – according to the educational cycle 2026-2030**

| No.  | Module/subject name  | Hours of classes |                   |    |        | ECTS points | Form of credits |
|--|--|------------------|-------------------|----|--------|-------------|-----------------|
|  |  | Year II          |                   |    |        |             |                 |
|  |  | Total            | including:        |    |        |             |                 |
| Lectures   | Seminars   |                  | Practical Classes |    |        |             |                 |
| 1.   | <b>Specialist English - developing academic language skills</b><br><i>Department of Foreign Languages</i>  | 30               | -                 | -  | 30     | 2           | Exam            |
| 2.   | <b>Biostatistics in scientific research - advanced statistical methods</b><br><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 research and pharmaceutical research</b><br><i>Department of Inorganic and Analytical Chemistry</i>  | 10               | -                 | -  | 10     |             | Credit          |
|  | <b>Advanced analytical techniques in omics research</b><br><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><br><i>Department of Histology and Cytophysiology</i>  | 5                | -                 | -  | 5      |             | Credit          |
|  | <b>Modern design methods and drug synthesis</b><br><i>Department of Synthesis and Technology of Drugs</i>  | 5                | -                 | -  | 5      |             | Credit          |
|  | <b>Proteomics techniques in diagnostics of nervous system diseases</b><br><i>Department of Neurodegeneration Diagnostics</i>   | 5                | -                 | -  | 5      |             | Credit          |
|  | <b>Personalized medicine</b><br><i>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><br><i>Department of Hygiene, Epidemiology and Ergonomics</i> | 5                | -                 | -  | 5      |             | Credit          |
|  | <b>Planning and interpreting analytical epidemiology studies - cohort studies</b><br><i>Department of Hygiene, Epidemiology and Ergonomics</i>   | 5                | -                 | -  | 5      |             | Credit          |
| <b>Planning and interpreting analytical epidemiology studies - clinical-control studies</b><br><i>Department of Hygiene, Epidemiology and Ergonomics</i> | 5  | -                | -                 | 5  | Credit |             |                 |
| 4.   | <b>Foreign expert lecture</b><br><i>Department of Neurodegeneration Diagnostics</i>  | 4                | 4                 | -  | -      | 1           | Credit          |
| 5.   | <b>Interdisciplinary summer school in the scope of civilization diseases</b><br><i>Director of the Doctoral School</i>   | 10               | -                 | 10 | -      | 1           | Credit          |
| 6.   | <b>Law in medicine</b><br><i>Department of Medical Law and Medical Deontology</i>  | 5                | 5                 | -  | -      | 1           | Credit          |
| 7.   | <b>Interdisciplinary lecture</b><br><i>Director of Doctoral School/invited expert</i>  | 5                | 5                 | -  | -      | 1           | Credit          |

|     |   |                                       |           |           |                                      |           |                    |
|-----|---|---------------------------------------|-----------|-----------|--------------------------------------|-----------|--------------------|
| 8.  | <b>Didactic faculty</b> (2 topics to be selected - 10 hours):<br>– <b>Interpersonal and environmental communication</b> (5h)<br><i>Department of Psychology and Philosophy</i><br>– <b>Methods and assessment of learning results</b> (5h)<br><i>Department of Psychology and Philosophy</i><br>– <b>Didactics directed at educational success of students</b> (5 h)<br><i>Department of Psychology and Philosophy</i><br>– <b>Psychopedagogy</b> (5h)<br><i>Department of Psychology and Philosophy</i><br>– <b>Psychopedagogical diagnostics</b> (5h)<br><i>Department of Psychology and Philosophy</i><br>– <b>Design thinking in theory and experimental practice</b> (5h)<br><i>Department of Bromatology</i><br>– <b>Education focused on the students, the so-called Student Cantered Learning</b> (5h)<br><i>Department of Bromatology</i><br>– <b>Professionalism in medicine</b> (5h)<br><i>Department of Psychology and Philosophy</i> | 10                                    | -         | 10        | -                                    | 1**       | Credit             |
| 9.  | <b>Doctoral seminar II</b><br>Presentation of individual research plan realization<br><i>Director of the Doctoral School</i>  | 10                                    | -         | 10        | -                                    | 1         | Credit             |
| 10. | <b>Conduct of didactic classes.</b><br><i>Designated MUB unit</i>   | 60                                    | -         | -         | 60                                   | 2         | Credit             |
| 11. | <b>Doctoral LAB II</b><br>(Realization of individual research plan of the doctoral student)<br><i>Designated MUB unit</i>   | 800                                   | -         | -         | 800                                  | -         | Credit             |
|     | <b>Total</b>  | <b>104<br/>+<br/>60<br/>+<br/>800</b> | <b>22</b> | <b>30</b> | <b>52<br/>+<br/>60<br/>+<br/>800</b> | <b>14</b> | <b>2<br/>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   | Hours of classes |                   |    |    | ECTS points | Form of credits |
|----------|---|------------------|-------------------|----|----|-------------|-----------------|
|          |   | Year III         |                   |    |    |             |                 |
|          |   | Total            | including:        |    |    |             |                 |
| Lectures | Seminars  |                  | Practical 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><br><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><br><i>Department of Biopharmacy and Radiopharmacy</i>  | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Application of immunoblotting techniques in biomedical-pharmaceutical tests</b><br><i>Department of Immunology</i>   | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Receptor tests in isolated organs</b><br><i>Department of Experimental Physiology and Pathophysiology</i>  | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Flow cytometry - possibilities of application in biomedical and pharmaceutical research</b><br><i>Department of Pharmaceutical Biochemistry</i>  | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Application of the method of isoelectrofocusing in diagnosing neurodegenerative diseases</b><br><i>Department of Neurodegeneration Diagnostics</i>   | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Clinical and experimental epidemiology</b><br><i>Department of Hygiene, Epidemiology and Ergonomics</i>  | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Construing an epidemiological research protocol</b><br><i>Department of Hygiene, Epidemiology and Ergonomics</i>   | 5                | -                 | -  | 5  |             | Credit          |
|          | <b>Metanalysis</b><br><i>Department of Hygiene, Epidemiology and Ergonomics</i>   | 5                | -                 | -  | 5  |             | Credit          |
| 2.       | <b>Foreign expert lecture</b><br><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) <ul style="list-style-type: none"> <li>- <b>Civilization diseases as an interdisciplinary issue (5 hours)</b><br/><i>Department of Medicinal Chemistry</i></li> <li>- <b>Immunology aspects of biomedical-pharmaceutical research (5h)</b><br/><i>Department of Immunology</i></li> <li>- <b>Progress in molecular biology (5h)</b><br/><i>Department of Medical Chemistry</i></li> <li>- <b>Biotechnological methods in biomedical-pharmaceutical research (5h)</b><br/><i>Department of Biotechnology</i></li> <li>- <b>Pharmacotherapy of cancer diseases (5h)</b><br/><i>Department of Medicinal Chemistry</i></li> </ul> | 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)<br/><i>Department of Experimental Physiology and Pathophysiology</i></li> <li>– <b>Interactions of medications with food</b> (5h)<br/><i>Department of Bromatology</i></li> <li>– <b>Metabolomics</b> (5h)<br/><i>Clinical Research Centre</i></li> <li>– <b>Planning, realizing and assessing the effects of programmes concerning population health</b> (10h)<br/><i>Department of Hygiene, Epidemiology and Ergonomics</i></li> <li>– <b>How to achieve scientific success in an international area</b> (5h)<br/><i>Department of Psychology and Philosophy</i></li> </ul> |                                      |          |           |                                      |          |          |
| 4. | <b>Doctoral seminar III</b><br>Methodology of tests conducted under realization of individual research plans<br><i>Director of the Doctoral School</i>   | 15                                   | -        | 15        | -                                    | 1        | Credit   |
| 5. | <b>Conduct of didactic classes.</b><br><i>Designated MUB unit</i>  | 60                                   | -        | -         | 60                                   | 2        | Credit   |
| 6. | <b>Doctoral LAB III</b><br>(Realization of individual research plan of the doctoral student)<br><i>Designated MUB unit</i>   | 800                                  | -        | -         | 800                                  | -        | Credit   |
|    | <b>Total</b>   | <b>49<br/>+<br/>60<br/>+<br/>800</b> | <b>4</b> | <b>25</b> | <b>20<br/>+<br/>60<br/>+<br/>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 in 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   | Hours of classes                     |                   |           |                         | ECTS points | Form of crediting |
|----------|---|--------------------------------------|-------------------|-----------|-------------------------|-------------|-------------------|
|          |   | Year 4                               |                   |           |                         |             |                   |
|          |   | Total                                | including:        |           |                         |             |                   |
| Lectures | Seminars  |                                      | Practical Classes |           |                         |             |                   |
| 1.       | <b>Doctoral seminar IV</b><br>Presentation of doctoral dissertation outcomes<br><i>Director of the Doctoral School</i>    | 10                                   | -                 | 10        | -                       | 1           | Credit            |
| 2.       | <b>Conduct of didactic classes.</b><br><i>Designated MUB unit</i>   | 60                                   | -                 | -         | 60                      | 2           | Credit            |
| 3.       | <b>Doctoral LAB IV</b><br>(Realization of individual research plan of the doctoral student)<br><i>Designated MUB unit</i> | 350                                  | -                 | -         | 350                     | -           | Credit            |
|          | <b>Total</b>  | <b>10<br/>+<br/>60<br/>+<br/>350</b> | <b>-</b>          | <b>10</b> | <b>60<br/>+<br/>350</b> | <b>3</b>    | <b>-</b>          |

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