

DOCTORAL SCHOOL EDUCATIONAL PROGRAMME OF THE MEDICAL UNIVERSITY OF BIALYSTOK

for the training cycle commencing in the academic year 2023/2024

1. General Assumptions

The Doctoral School run at the Medical University of Bialystok constitutes an organised form of doctoral training in the medical and health sciences in three scientific disciplines:

- medical sciences
- pharmaceutical sciences
- health sciences.

Training at the Doctoral School focuses on supporting the scientific and personal development, including the skills and general competences of young researchers.

The Doctoral School at the Medical University of Bialystok is a preparation for receiving a doctoral degree in one of the three disciplines listed below:

- medical sciences
- pharmaceutical sciences
- health sciences.

Training at the Doctoral School lasts four years and is based on a training programme and an individual research plan. The training programme provides for professional practice by the doctoral student in the form of teaching or participating in their conduct not exceeding 60 teaching hours per year. The training concludes with the submission of a doctoral dissertation.

The programme of the Doctoral School is based on the conclusions developed as part of the so-called Salzburg II Initiative, published in 2010, and the “Principles for the Innovative Doctoral Training” developed by the ERA Steering group and recommended in the Conclusions of the Council of the European Union on the modernisation of higher education of 28 and 29 November 2011. It is in line with the European Charter for Researchers.

The implementation of the educational programme at the Doctoral School ensures the achievement of learning outcomes for qualifications at level 8 of the Polish Qualifications Framework, as defined in the Regulation of the Minister of Science and Higher Education of 14 November 2018 (Journal of Laws 2018, item 2218), on the basis of Article 7 section

3 of the Act of 22 December 2015 on the Integrated Qualification System (i.e. Journal of Laws of 2020 item 226).

2. Main Learning Objectives

The main aim of training in the Doctoral School is for the doctoral student to prepare and submit a dissertation on the basis of which they will be able to obtain a doctoral degree in the discipline of medical sciences, pharmaceutical sciences or health sciences.

The training at the Doctoral School allows to acquire highly specialised knowledge in the area of medical and health sciences and prepares for independent research and teaching. It creates the conditions for world-class scientific development and enhance scientific and research competence while working in research teams, including international teams, with experts in the respective disciplines. Doctoral students have the opportunity for scientific development in innovative topics using advanced technologies used in modern science. The training programme ensures the development not only of research competences, but also of the doctoral student's "soft" competences based on personal and interpersonal skills. As part of their training in the Doctoral School, doctoral students take tailored classes, including research methodology classes, and have the option of selecting optional activities of interest to them. The activities in the Doctoral School have been planned in a manner that make them a support to the activities of doctoral students aimed at preparing their dissertation. The interdisciplinary nature of the training programme, as well as the rich offer of classes in research methodology and classes in biostatistical methods in scientific research mention this programme's value. As part of the optional course, doctoral students will also be able to improve their competence in developing and preparing presentations of research results, including manuscripts for publication. The ability to present the assumptions and results of their own research and to engage in substantive discussion in the scientific community will be honed by doctoral students during the annual doctoral seminar and the interdisciplinary summer school.

Participants in the Doctoral School also gain skills in fundraising for research and managing research grants. Doctoral students are introduced to the basic principles of knowledge transfer to the economic and social sphere and the possibilities of commercialising research results, as well as ways of self-presentation and attracting cooperation partners. They also learn how to teach independently, which is the basis of preparation for the academic teaching profession.

Training at the Doctoral School enables improving the competence in the use of scientific medical terminology in English. A section of the classes are conducted in English.

3. Relationship of education at the Doctoral School to the mission and development strategy of the Medical University of Bialystok

Establishment and development of a Doctoral School at the Medical University of Bialystok in the discipline of medical sciences, pharmaceutical sciences and health sciences are a direct response to the mission and development strategy of the University on many levels. In line with its mission, the Medical University in Bialystok provides medical education. The University aims to strive for a comprehensive education and to provide outstanding graduates of master's programmes with opportunities for quick academic advancement. The curriculum at the Doctoral School emphasises priority actions in the development strategy of the Medical University of Bialystok, such as increasing the innovation of research and commercialisation of its results and increasing the innovation of educational programmes and their adaptation to the needs of the labour market, including the internationalisation of education.

In addition to acquiring the knowledge and skills necessary to the preparation and defence of the doctoral thesis, education at the Doctoral School is also oriented towards the needs of the socio-economic environment, including the identification and solving the current health issues of the society. This is in line with the University's mission to provide medical services at the highest level of reference.

An important component of training at the Doctoral School is for doctoral students to obtain methodological skills such as: building research hypotheses, presentation and interpreting the results of own research and discussing them critically in relation to the current state of knowledge. Graduates of the Doctoral School are prepared both for research work in interdisciplinary scientific teams and for independent planning, organisation and coordination of scientific work. Increased knowledge of English in medical and health sciences, the ability to use existing databases and to create their own, complete the graduate's profile. The process of training of young academics, capable of creating their own body of scientific work, through education at the Doctoral School is perfectly in line with the development strategy of the Medical University of Bialystok.

The programme of the Doctoral School, which is also geared towards preparing the graduate to teaching allows for the training of fully qualified

research and teaching personnel. They can later become a part of the body of scientists at universities providing education in medical and health sciences.

In order to fully shape the young scientist, education at the Doctoral School also takes place on a social and ethical level, which is in line with the University's mission to shape the silhouette and behaviour of graduates in line with moral and ethical principles.

4. Assumed Learning Outcomes

Training programme at the Doctoral School at the Medical University of Białystok in the discipline of medical sciences, pharmaceutical sciences and health sciences allows to achieve the learning outcomes specified in the second-degree characteristics for qualifications at level 8 of the Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education of 14 November 2018 on second-level characteristics of learning outcomes for qualifications at levels 6-8 of the Polish Qualifications Framework (Journal of Laws of 2018 item 2153).

Learning outcomes for qualifications at level 8 of the Polish Qualifications Framework achieved at the Doctoral School

Outcomes learning characteristics category:

Knowledge: knows and understands

Descriptive category – aspects of fundamental importance	Description component code	Characteristics of the second level of learning outcomes for the qualification at level 8 of the Polish Qualifications Framework
Scope and depth – completeness of cognitive perspective and interdependence	P8S_WG	<ul style="list-style-type: none"> • to the extent that existing paradigms can be revised – global body of work covering theoretical foundations and general and selected specific issues – appropriate to the specific scientific or artistic discipline • the main development trends in the scientific or artistic disciplines in which the education is provided • research methodology • the rules for dissemination of scientific results, including through open access
Context – determinants, effects	P8S_WK	<ul style="list-style-type: none"> • fundamental dilemmas of modern civilisation • economic, legal, ethical and other relevant considerations of the scientific activity • the basic principles for the transfer of knowledge to the economic and social spheres and for the commercialisation of the results of scientific activities and the knowledge related to these results

Outcomes learning characteristics category:

Skills: able to

Descriptive category – aspects of fundamental importance	Description component code	Characteristics of the second level of learning outcomes for the qualification at level 8 of the Polish Qualifications Framework
Use of Knowledge – solved issues and tasks performed	P8S_UW	<ul style="list-style-type: none"> • use knowledge from different fields of science or art to creatively identify, formulate and innovatively solve complex problems or carry out tasks of a research nature, and in particular: <ul style="list-style-type: none"> – define the aim and subject of research, formulate a research hypothesis – develop research methods, techniques and tools and apply them creatively – make inferences from scientific findings • critically analyse and evaluate the results of scientific research, expert activities and other work of a creative nature and their contribution to the development of knowledge • transfer the results of scientific activities to the economic and social spheres
Communicating – receiving and producing speech, dissemination of knowledge within the scientific community and use of foreign language	P8S_UK	<ul style="list-style-type: none"> • communicate on specialist subjects to the extent allowing active participation in the international scientific community • disseminate the results of scientific activities, including in popular forms • initiate debate • participate in scientific discourse • speak a foreign language at B2 level of the Common European Framework of Reference for Languages to the extent necessary for participation in an international scientific and professional environment
Work organisation – planning and team work	P8S_UO	<ul style="list-style-type: none"> • plan and carry out individual and team research or creative projects, including in an international environment
Learning – planning own development and development of other persons	P8S_UU	<ul style="list-style-type: none"> • independently plan and act for one’s own development and inspire and organise the development of other persons • plan and deliver a class or group of classes using modern methods and tools

Outcomes learning characteristics category:

Social competence: willing to

Descriptive category – aspects of fundamental importance	Description component code	Characteristics of the second level of learning outcomes for the qualification at level 8 of the Polish Qualifications Framework
Assessments – critical approach	P8S_KK	<ul style="list-style-type: none">• critically evaluate achievements within a scientific or artistic discipline• critically appraise own contribution to the development of a scientific or artistic discipline• recognise the importance of knowledge in solving cognitive and practical issues
Responsibility – meeting social responsibilities and acting towards public interest	P8S_KO	<ul style="list-style-type: none">• meeting the social obligations of researchers and creators• initiate actions in the public interest• think and act entrepreneurially
Professional role – independence and ethos development	P8S_KR	<ul style="list-style-type: none">• sustaining and developing the ethos of the research and creative communities, including:<ul style="list-style-type: none">– carrying out scientific activities in an independent manner– respect the principle of public ownership of scientific results, taking into account the principles of protection of intellectual property

A graduate of the Doctoral School is able

to:

- plan, organise and coordinate scientific work
- build research hypotheses and propose a research methodology to address a specific scientific problem
- apply the law and principles of ethics in research
- use modern research methods in scientific tasks
- process the results of biomedical research using statistical methods
- interpret research results and analyse them critically in relation to the current knowledge
- develop research results for presentation in university, national and international scientific bodies,
- cooperate with the socio-economic environment
- teach independently.

A graduate of the Doctoral School will be superbly prepared to meet the needs of today's science and the economy, which will undoubtedly increase its competitiveness in the labour market.

5. Means of verifying learning outcomes

The learning outcomes for each subject in the Doctoral School Plan pursued by the doctoral student will be verified during credits or examinations. The method for passing the grade is specified in the Doctoral School Plan. Doctoral students should be informed about the way in which the credit and examination will be conducted before the start of the respective course cycle.

The learning outcomes achieved by the doctoral student will also be verified through the assessment:

- of the manner and timeliness of implementation of the individual research plan by the Head of the Doctoral School
- presentation by the doctoral student of the theoretical foundations and assumptions as well as the methodology and results of his/her own research at the annual doctoral seminar
- the participation of the doctoral student in scientific discussions at the annual doctoral seminar and interdisciplinary summer school
- implementation of the individual research plan and preparation of the dissertation during the mid-term evaluation of the doctoral student by an evaluation committee
- the factual and editorial merits of the prepared dissertation by three independent reviewers who are experts in the specific discipline.

The individual research plan should specify the tasks to be carried out during the respective accounting periods, in particular a description of the planned research and stages of preparation of the doctoral thesis.