

CURRICULUM OF STUDIES AT THE DOCTORAL SCHOOL OF THE MEDICAL UNIVERSITY OF BIALYSTOK

1. General assumptions

Doctoral school functioning at the Medical University of Bialystok is an organized form of educating doctoral students in the area of medical sciences and health-related sciences in three scientific disciplines:

- medical sciences
- pharmaceutical sciences
- health sciences

Education at the Doctoral School focuses on supporting scientific and personal development including general skills and competencies of young scientists. Doctoral School at the Medical University in Bialystok prepares for obtaining a degree of Doctor in the selected discipline from the below three:

- medical sciences
- pharmaceutical sciences
- health sciences

Education in the doctoral school lasts 4 years and is organized on the basis of the programme of education and the individual research plan. The curriculum envisages professional practice to be conducted by the doctoral student in the form of classes and participation in their conduct in the dimension not exceeding 60 hours of didactic classes per year. Education ends with submission of doctoral dissertation.

The programme of Doctoral School is based on applications elaborated as part of the so-called Salzburg II initiative, published in 2010 and “Principles of innovative education of doctoral students” elaborated by ERA Steering group and recommended in the European Union Council Conclusions concerning modernizing higher education from 28 and 29 November 2011. It complies with the European Scientist Card.

Realization of the curriculum at the Doctoral School ensures obtaining learning outcomes for qualification at the 8th level of the Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education from 14 November 2018 on the characteristics of the second-cycle studies for qualification at levels 6– 8 of the Polish Qualification Framework (Journal of Laws from 2018,

item 2218), pursuant to Article 7 sec. 3 of the Act of 22 December 2015 on Integrated Qualification System (that is Journal of Laws from 2023, item 2005).

2. Key educational goals

The key goal of education at the Doctoral School is to elaborate and submit a doctoral dissertation by doctoral students on the basis of which they will be able to obtain a doctoral degree in the discipline of medical sciences, pharmaceutical sciences or health-related sciences. Education in the Doctoral School enables obtaining highly specialized knowledge in the field of medical sciences and health-related sciences and prepares for an independent research and didactic work. It creates conditions for the scientific development on the international level and enhancement of scientific-research competencies during work in research teams, including international teams with participation of experts in individual disciplines. Doctoral students have an opportunity to pursue scientific development in innovative fields with the use of advanced technologies applied in modern science. The curriculum ensures development not only of research competencies but also “soft” competencies of the doctoral student based on their personal and interpersonal capacities.

As part of education at the Doctoral School doctoral students participate in classes adjusted to their needs, including classes in methodology of scientific research. They also have an opportunity to select facultative classes of interest. Classes at the Doctoral School have been designed in such a way so as to constitute support of actions of doctoral students targeted at preparing a doctoral dissertation. The interdisciplinary nature of the curriculum and a rich offer of classes in the scope of methodology of scientific research and classes in the scope of biostatistical methods in scientific research increases the value of this programme. As part of facultative classes doctoral students will be able to increase also their competencies in the scope of elaborating and preparing presentation of scientific results, including manuscripts for printout. The ability to present assumptions and results of own research and conduct substantive discussions in a scientific environment will be improved by doctoral students during annual doctoral seminars and interdisciplinary summer school.

Participants of the Doctoral School also gain an ability to obtain funds for scientific research and manage research grants. Doctoral Students are familiarized with basic principles of knowledge transfer to the economic and social sphere and possibilities of commercialization of scientific research results as well as methods of auto presentation and achievement of partners for cooperation. They also learn how to autonomously conduct didactic classes which constitutes the basis for preparing for the profession of an academic teacher.

Education at the Doctoral School enables increasing competencies in the scope of applying scientific medical terminology in English. Part of didactic classes is conducted in English.

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

Launching and running of the Doctoral School by the Medical University of Bialystok in medical sciences, pharmaceutical sciences and health-related sciences corresponds to The mission and development strategy of the University in many areas. In accordance with the mission, the Medical University of Bialystok educates students in medical fields of study. The goal of the University is to strive to provide extensive education and ensure that distinguishing graduates of master studies have an opportunity to achieve swift scientific advancement. The curriculum of the Doctoral School places emphasis on priority actions in the scope of development strategy of the Medical University of Bialystok such as increasing innovation of scientific research and commercialization of their results and increasing innovation of educational programmes as well as adjusting them to the needs of the labour market, including internationalization of education.

Education at the Doctoral School, apart from achieving knowledge and skills necessary in order to prepare and defend doctoral dissertation is also directed at the needs of the social-economic environment, including detection of the current health issues of the society and solving them. It is in line with the University mission in the scope of providing medical services at the highest referral level.

An important element of education at the Doctoral School is for the doctoral students to achieve such methodological skills as: building research hypotheses, presentation and interpretation of results of own research and conducting their critical discussion with regards to the current state of knowledge. Graduates of the Doctoral School are prepared both to carry out research work in interdisciplinary scientific teams and to independently plan, organize and coordinate scientific work. Enhanced command of English in the area of medical sciences and health-related sciences, ability to use the existing databases and create one's own databases supplement the profile of a graduate. The process of educating young scientific personnel, capable of creating its own scientific work workshop through educating at the Doctoral School perfectly fits into the development strategy of the Medical University of Bialystok. The Doctoral School programme which is directed also at the graduate preparation to carry out didactic classes enables educating fully qualified

research-didactic employees. They may be an excellent addition to the circle of scientists of higher universities carrying out education in the area of medical sciences and health sciences.

In order to fully shape the profile of a young scientist, education at the Doctoral School is also organized at the social and ethical level which matches the University mission consisting in educating the profile and behaviour of graduates in line with moral and ethical principles.

4. Assumed learning outcomes

The curriculum at the Doctoral School of the Medical University of Bialystok in medical sciences, pharmaceutical sciences and health sciences enables reaching learning outcomes specified in the characteristics of the second cycle for qualifications at the level of 8 Polish Qualification Framework, specified in the Regulation of the Minister of Science and Higher Education from 14 November 2018 on characteristics of the second cycle learning outcomes for qualification at 6-8 levels of the Polish Qualification Framework (Journal of Laws from 2018, item 2218).

Learning outcomes for qualification at level 8 of the Polish Qualification Framework achieved at the Doctoral School

Category of characteristics of learning effects:

Knowledge: knows and understands

Descriptive category - aspects regarding basic meaning	Code of description component	Characteristics of the second-cycle learning effects for qualification at level 8 of the Polish Qualification Framework
Scope and depth – completeness of the cognitive perspective and dependencies	P8S_WG.	<ul style="list-style-type: none"> • in a degree that enables a review of the existing paradigms – world achievements covering the theoretical bases and general issues as well as the selected detailed issues – proper for a given scientific or artistic discipline • Key development trends of scientific or artistic disciplines in which education occurs • methodology of scientific research • principles of promoting the results of scientific activity, also in the mode of open access
Context conditions, effects	P8S_WK.	<ul style="list-style-type: none"> • fundamental dilemmas of modern civilization • economic, legal, ethical and other significant conditions of scientific actions • basic principles of knowledge transfer to economic and social zone and commercialization of scientific outcomes and the know-how related to these results

Category of characteristics of learning effects:

Skills: is able

Descriptive category - aspects regarding the basic meaning	Code of description component	Characteristics of the second-cycle learning effects for qualification at level 8 of the Polish Qualification Framework
Use of Knowledge - solving issues and carrying out tasks	P8S_UW.	<ul style="list-style-type: none"> • using knowledge in various disciplines of science or art for the creation of identification, formulation and innovative solution to the complex issues or performance of tasks of research nature, in particular: <ul style="list-style-type: none"> – defining the goal and the subject of scientific research, formulating research hypothesis, – developing methods, techniques and research tools as well as applying them in a creative manner, – drawing conclusions on the basis of scientific research results • conducting critical analysis and assessing scientific research results, expert activity and other works of creative character and their input into the development of knowledge • transferring the results of scientific activity into economic and social zone
Communicating - receiving and creating utterances, promoting knowledge in the scientific environment and using a foreign language	P8S_UK.	<ul style="list-style-type: none"> • communicating on specialist topics in a degree allowing for an active participation in the international scientific environment • promoting scientific activity results, also in popular forms • initiating debates • participating in scientific discussions • using a foreign language at B2 level of the European System of Language Command Description in a degree enabling participation in international scientific and professional environments
Organization of work – planning and team work	P8S_UO.	<ul style="list-style-type: none"> • planning and realizing individual and team research or creative ventures, also in the international environment
Learning - planning own development and development of other persons	P8S_UU.	<ul style="list-style-type: none"> • individual planning and acting towards self-development and inspiring and organizing the development of others • planning classes and groups of classes and realizing them with the use of modern methods and tools

Category of characteristics of learning effects:

Social competencies: is ready to

Descriptive category - aspects regarding the basic meaning	Code of description on component	Characteristics of the second-cycle learning effects for qualification at level 8 of the Polish Qualification Framework
Assessment - critical approach	P8S_KK.	<ul style="list-style-type: none">• critical assessment of scientific achievements under a given scientific or artistic discipline• critical assessment of one's impact in a given scientific or artistic discipline• acknowledging the importance of knowledge in solving cognitive and practical issues
Responsibility – fulfilment of social obligations and actions towards public interest	P8S_KO.	<ul style="list-style-type: none">• fulfilment of social obligations of researchers and creators• Initiating actions towards public interest.• thinking and acting in an entrepreneurial manner
Professional role – independence and ethos development	P8S_KR.	<ul style="list-style-type: none">• sustaining and developing ethos among research and creative societies, including:<ul style="list-style-type: none">– carrying out scientific activity in an independent manner– respecting the principles of public ownership of the results of scientific activity bearing in mind the principles of intellectual property rights

Doctoral School graduates are able to:

- plan, organize and coordinate scientific work
- test research hypotheses and propose research methodology to resolve specific scientific issues
- apply the provisions of law and the principles of ethics in scientific research
- use modern research methods in scientific tasks
- elaborate the results of biomedical research via statistical methods
- interpret the results of research and carry out their critical analysis with regards to the current state of knowledge
- elaborate test results in order to present them in scientific university, national and international circles.
- cooperate with the social-economic environment
- independently conduct didactic classes.

Doctoral School graduate will be perfectly prepared to realize the needs of modern science and economy which will undoubtedly increase his competitiveness on the labour market.

5. Course of verification of learning effects

Learning effects in the scope of each subject from the Doctoral School Plan realized by the doctoral student will be verified during credits or exams. The form of passing a subject has been specified in the Doctoral School Plan. Doctoral Students should be informed of the manner of conducting credits and exams prior to commencing a given cycle of classes.

Obtaining the learning effects by the doctoral student will be verified also by way of assessing:

- the manner and timeliness of realization of the individual research plan by the Doctoral School Director
- presentation by the doctoral student of theoretical bases and assumptions and the methodology and own test results during annual doctoral seminars
- participation of the doctoral student in a conceptual discussion in a scientific environment during annual doctoral seminars and interdisciplinary summer schools
- realization of individual research plan and preparation of the doctoral dissertation during mid-term assessment of the doctoral student performed by the evaluation board
- substantive and editorship values of the prepared doctoral dissertation performed by three independent reviewers who are experts in a given discipline.

Individual research plan should specify the tasks provided for the realization in individual settlement periods, in particular, the description of planned scientific research and stages of doctoral dissertation preparation.

Chairman of the Senate

prof. dr hab. Adam Krętowski

