Ministry of Education and Science of Ukraine
Petro Mohyla Black Sea National University

«APPROVE»

President of
Petro Mohyla Black Sea National
University
Professor_____ L.P. Klymenko

«20»_____03_____2019

ACADEMIC PROGRAM

Third (academic) level
(name of higher education)

Doctor of Philosophy
(name of assigned degree)

FIELD OF STUDY 22 Healthcare
(code and name of field of study)

SPECIALITY 222 Medicine
(code and name of speciality)

Mykolayiv, 2019

II - General characteristics

Level of higher education	Third (academic)
Degree of higher education	Doctor of Philosophy
Field of study	22 Healthcare
Speciality	222 Medicine
Form of education	Full-time course, evening classes, distance education (contract)
Educational degree	Doctor of Philosophy in the field of healthcare with specialty "Medicine".
Diploma degree	Doctor of Philosophy in the field of healthcare with specialty "Medicine".
Description of the subject area	• *Object of study and practice:* Ethics, methodology, methods of scientific research, current problems of medical science. • *Learning Goals:* Acquiring knowledge and skills sufficient for performing original research, obtaining of new facts and introducing them into practical medicine and other spheres of life. • *Theoretical content of the subject area:* Ethics and methodology of scientific research; modern methods of scientific research in medicine and related specialties in accordance with the direction of scientific project; in-depth study of the specialty in the direction of scientific research; development of language competences and communication skills, adoption of presentation technique for the results of scientific research and other competencies. • *Methods, techniques and technologies:* Post graduate education is based on the use of lectures, practical classes, seminars, trainings with the use of distance learning. During postgraduate education, student should master the technique of information search, communications,

	presentations of research results, writing a dissertation, etc. ***Tools and equipment (objects / things, devices that student has to learn to apply and use):*** Modern equipment in accordance with the scientific methods, mastering of which is supposed during the scientific research.
Academic rights of graduate students	After obtaining the degree of a doctor of philosophy, the graduate has the right to obtain a scientific degree of a doctor of sciences and award of the corresponding scientific degrees and academic degrees.
Amount of ECTS credits	The Ph.D. program is designed for 4 years and includes educational and scientific parts. The scientific part of the doctors of philosophy training program involves conducting their own scientific research under the direction of one or two scientific supervisors and making its results into a dissertation. The amount of credits for the educational program is 37.5 ECTS on the basis of the pre-master's degree (for foreigners and people without citizenship - 46.5 credits at the expense of studying the discipline "Ukrainian as a Foreign Language"). The amount of credits for the educational program can be increased to 60 – on condition of the multidisciplinary research implementation - in terms of agreement with the scientific supervisor and the head of the unit. The program includes regulatory training courses and elective disciplines. The amount of elective courses should be at least 25%. The credits given to a candidate while studying of courses of the corresponding educational level in other universities of the country and abroad, including online courses (with the presence of a corresponding world-standard certificate) can be included into the volume of educational training.

III - Competence of the graduate

Integral competence

Ability to solve complex problems in the field of professional medical activities, to conduct the original research and carry out research and innovation activities in the field of health care based on a deep rethinking of existing integrated theoretical or practical knowledge and/or professional practice and the creation of new ones.

General competencies

1. Ability to increase professional qualifications.
2. Ability to search, process and analyze information from various sources.
3. Ability to identify and solve problems, to generate ideas.
4. Ability to design and manage projects.
5. Ability to communicate in a professional environment and with the representatives of other professional directions within the national and international context.
6. Ability to assess and ensure the quality of performed work.

Special competencies

1. Ability to understand the subject area by the chosen scientific direction and educational activity.
2. Ability to realize the need for additional knowledge in the field of medicine and in the direction of scientific research, generate scientific hypotheses.
3. Ability to formulate a research question, to develop a project of scientific research.
4. Ability to choose methods and endpoints of research in accordance with the goals and objectives of the scientific project.
5. Knowledge of scientific research modern methods.
6. Ability to interpret the results of scientific research, to conduct its analysis and make a summary.
7. Ability for the implementation of new knowledge (scientific data) into science, education and other areas of society.
8. Ability to present the results of scientific research in oral and written language in accordance with the national and international standards.
9. Ability to organize and implement pedagogical activities.
10. Leadership and team management ability.
11. Adherence to ethics and academic integrity.

Competency Matrix

Competence classification according to NQF	Knowledge	Ability	Communication	Autonomy and responsibility
Integral competence				
Ability to solve complex problems in the field of professional medical activities, to conduct the original research and carry out research and innovation activities in the field of health care based on a deep rethinking of existing integrated theoretical or practical knowledge and/or professional practice and the creation of new ones.				
General competencies				
1. Ability to increase the professional qualification	To know: • Cognitive processes regularities • Education strategy throughout life • Methods of productive training • Value orientations theory and personality motivation • Rhetorical principles • Principles of time management	To be able to: • Operate philosophical categories and doctrines • Use self-education methods • Evaluate the level of motivation • Permanently improve your educational and general cultural level	Identify values and personality motivational level Ability to self-education and self-realization Ability to effective own-time management	System scientific worldview formation and general cultural outlook Cognitive capabilities development Ability to self-education and self-realization
2. Ability to search, process and analyze information from various sources	To know: • Bibliographic search principals • List of scientometric databases and their significance • Leading information resources for the information search • Modern information	To be able to: • Use modern information technologies to find and process information • Conduct an information search • Analyze and interpret data from foreign information sources in a proper way	Use information and communication technologies to search and process information Hold a discussion in the sphere of informative nature scientific data analysis	Ability to complete and versatile information search Responsibility for an adequate assessment and interpretation data obtained by the results of a search

	technologies			
3. Ability to identify, raise and solve problems, generate ideas.	To know: Science development regularities Cognitive process stages and regularities Research process stages Creativity principals and conditions	To be able to: Analyze data obtained from information sources	Communication with academic advisor, colleagues and partners while the discussing problems, finding ways to solve them	Ability to individual and independent thinking, ideas formulation and hypotheses making
4. Ability to develop and manage projects	To know: • Systems of educational and scientific grants at the national and international levels • Participation conditions and technology preparation for grant application • Project development technology	To be able to: • Conduct new programs search • Prepare the project in accordance with the application form • Prepare an application for participation in the competition in order to get a financial support	Search for partners to form a consortium Knowing of terminology, use of written language competences in native and foreign languages for the project reasoning and application processing for grant	Individual search, data systematization, responsible attitude to the project development
5. Ability to the communication in a professional environment and with representatives of other professions in the national and international context	To know: • Perception features of different target audiences • Management conflict principals • Rhetorical principles and argumentation theory • Professional vocabulary and terminology in accordance with specialty and specialization	To be able to: • Present scientific results in native and English languages in oral and written forms • Hold communication with different target audiences • Perform different social roles • Keep in possession speech culture and argumentation	Realization of scientific communication, international cooperation, upholding of own scientific views Keep in possession verbal and non-verbal communication skills Collective cooperation to perform the tasks	Permanent improvement of foreign language culture Scientific achievements and ideas distribution

	(training line) • Foreign language at level no lower than B2 • Conversational cliches of business etiquette and language behavior	methods		
6. Ability to evaluate and ensure the quality of performed works	To know: • Quality standards • Quality assessment criteria • Assessment forms and methods results of educational and scientific activity	To be able to: • Monitor the educational and scientific process • Apply effective methods to evaluate the cognitive sphere • Develop proposals for its improvement	Interaction, cooperation with colleagues and leadership, with students	Own activity results improvement and of others activity results one Individual responsibility for the assignment fulfilment results Integrity, trust and responsibility for own actions
Special (professional) competencies				
1. Ability to understand the subject area by the chosen scientific direction and educational activity	To know: • Discipline content (by specialization) according to the future professional activity • Essential concepts in the scientific research sphere • Priority directions of science and medicine development	To be able to: • Analyze the main theories and concepts according to the direction research • Interpret the research results by chosen scientific direction	Formulation of own view and participation in discussions on the main content, methods, latest achievements according to the scientific research direction	Permanent self-education and self-improvement

2. Ability to reveal the need for additional knowledge in the field of medicine and in the direction of scientific research, generate scientific hypotheses	To know: • Information world resources • Research process essence • Modern achievements according to the scientific research direction • Latest research methods, their informational content, specificity and sensitiveness	To be able to: • Conduct the critical analysis of modern scientific literature • Assess in a proper way the research achievements and limitations by chosen scientific direction • Determine the solution problems extent and modern science and medicine needs	Information resources use to receive information Communications and discussions with specialists in the certain sphere of scientific activity	Use modern information technology to conduct scientific research Keep in possession the scientific methodology research for correct hypotheses formulation and research questions
3. Ability to formulate a research question, develop a research project	**To know:** • Scientific research methodology • Principles of generating statistical and scientific hypotheses • Technology formulation of the research question • Types of systematic mistakes, methods to prevent them	**To be able to:** • Formulate research questions and hypotheses • Determine a research design • Develop a research plan • Evaluate the impact of intervening factors • Predict system errors	Argumentation and proof of the developed project advantages Conducting discussions on the purpose and scientific project tasks Use knowledge and skills from the scientific research methodology to find partners	Initiative, independence, responsibility Systematic mistakes prevention while a conducting the scientific research
4. Ability to choose methods and evaluation criteria (endpoints) of	**To know:** • Modern research methods • Biomarkers of different processes and states, their	**To be able to:** •Select appropriate research methods to achieve the goal and objectives of the research project	Argumentation of the chosen research methods advantages To discuss the informational value of the research methods	Individual choice of appropriate research methods

research according to the goals and objectives of scientific project.	informational value • Informative criteria of the processes evaluation, functions, phenomena	•Interpret different research methods results	with the scientific community and the possibility of their improvement and combining	
5. Proficiency of modern scientific research methods	**To know:** • Peculiarity and sensitivity of different research methods • Research methodologies on scientific project`s subject, their capabilities and limitations	**To be able to:** •Use modern research methods •Use research methodologies •Modify and improve research methodologies	To know research methods and methodologies To exchange information and impart knowledge to colleagues	Individual performance of scientific research Accuracy and repeatability of research results
6.Ability to interpret scientific research results, to conduct their correct analysis and generalization	**To know:** • Biostatistics fundamentals • Methods of statistical analysis • Submitting of statistical data processing results	**To be able to:** • Justify the size of sample • Formulate statistical hypotheses • Use statistical analysis methods in a proper way	Reasoning of selected analysis methods and discussion of received data	Responsibility for conducting data analysis Obtaining accurate and repeatable results Prevention of fraud in data processing
7. Ability to introduce new knowledge (scientific data) into science, education and other society spheres	**To know:** • Prior art technology • Copyright fundamentals • Copyright registration stages and principles • Technology of patent acquisition	**To be able to:** • Conduct patent searches • Register intellectual property right • Introduce scientific achievements into educational process	Communications and discussions with specialists in a certain area of scientific activity Adapt the results of scientific researches into educational programs and educational process	Responsible patenting Regular updating of educational programs and content
8. Ability to present the results of scientific research in spoken and written language according to national and international standards	**To know:** • Technology of presenting data in the form of posters and presentations • Technology of writing articles for national scientific publications • Requirements and technology for writing articles for international peer-reviewed publication • List of publications indexed by Scopus, Web of Science • Standards for execution of	**To be able to:** • Work with PowerPoint, Prezi, Adobe Photoshop, Adobe Reader • Prepare presentation • Prepare oral presentation • Write an article according to the scientific publication requirements	Academic integrity Communication with reviewers and editorial staff Argumentation, critical assessment, ability to conduct scientific discussion	Responsibility for the scientific research results Preventing plagiarism and falsifications

	scientific works			
9. Ability to organize and realize pedagogical activities	To know: • Standards of higher education in the specialty • Pedagogy fundamentals • Didactic basis of problem learning • Competency approach in the design and implementation of educational activities • Forms of educational and cognitive activity organization • Principles of student-oriented education • Program and content of discipline	To be able to: • Formulate education goals and ways of their achievement • Correctly formulate the content of education and forms of control • Apply the latest pedagogical technologies • Monitor and manage educational process • Use modern information technologies to optimize learning	The proficiency of didactics, oratory, argumentation basis Application of interactive education methods Demonstrate leadership and manage the educational process	Acquiring of oratory skills Leadership Ability to self-evaluation and non-stop self-improvement Responsibility for effectiveness of the educational process
10. Ability for leadership, team management	To know: • Communication theory • Mechanisms of effective management • Leadership psychology	To be able to: • Form effective communications • Manage a team	Ability to communicate and to manage of different groups, ability to inspire and motivate students and colleagues	Initiativity, leadership and management ability Self-realization
11. Adherence to ethics and academic integrity	To know: • Research ethics • Legal copyright basis • Principles of plagiarism, falsification, corrupt practices prevention	To be able to: • Act individually in education and scientific spheres • Suggest own views • Make own decisions • Use informational technologies to identify plagiarism	Conscientious and responsible implementation of educational and scientific activities Gaining trust and respect among colleagues and students	Responsibility for the activity results Integrity, trust and responsibility for own actions Preventing plagiarism, falsification and corrupt practices

IV. Results of Studying

1. To demonstrate non-stop development of intellectual and universal cultural level, self-realization.
2. To interpret and analyze information using the latest informational technologies.
3. To identify unsolved problems in a subject sphere, to formulate problems and find ways of their solution.
4. To make the scientific hypotheses, goal and objectives of scientific research.

5. To develop scientific research design and plan.
6. To conduct original scientific research.
7. To explain principles, peculiarity and sensitivity of research methods, informational value of selected indicators.
8. To know, improve and implement new scientific methods according to chosen field of a scientific project and educational activity.
9. To analyze the results of scientific researches, to apply the statistic research methods.
10. To implement the results of scientific researches into educational process, medical practice and society.
11. To present the results of scientific researches in the form of presentation, poster reports, publications.
12. To develop communications in professional environment and public sphere.
13. To organize educational process.
14. To evaluate educational process effectiveness; to recommend ways of its improvement.
15. To organize team work (students, colleagues, interdisciplinary team).
16. To adhere to ethical principles, working with patients, laboratory animals.
17. To adhere to academic integrity; to bear responsibility for authenticity of received scientific results.

	Competency	
Program of learning outcomes	Integral competence: Acquiring of knowledge, skills and abilities sufficient to carry out an original scientific research that provides the acquisition of new knowledge aimed at solving complex problems in the sphere of medicine, has a theoretical and practical value.	
	General competencies	Special (professional competencies)

	Ability to increase professional skill	Ability to search, process and analyze information from various sources	Ability to identify, put and solve problems, ability to generate ideas.	Ability to work out and run the projects	Ability to communicate in a professional environment and with representatives others professions in the national and international context	Ability to evaluate and ensure the quality of completed works	Ability to understand the topical area by the chosen scientific direction and educational activity	Ability to identify the need for additional knowledge in the medicine sphere and in scientific research direction, generate scientific hypotheses	Ability to formulate a research question, work out a project of scientific research	Ability to choose research methods and endpoints in accordance with the goals and objects of a scientific project.	Possession of scientific research modern methods	Ability to interpret the results of scientific research, to undertake the their correct analysis and generalization	Ability to implantation new knowledge (scientific data) into science, education and other vectors of society	Ability to present the results of scientific research in oral and written language in accordance with national and international standards	Ability to organize and realize pedagogical activities	Ability to lead, team management	observation to ethics and academic integrity
	1	2	3	4	5	6	1	2	3	4	5	6	7	8	9	10	11
To develop own intellectual and general cultural level, self-realization	+++	+++	++	+	+	+	+	+	++	++	++	++	+++	++	+++	+++	++
Interpret and analyze information with using the modern information technology	++	+++	++	+	+	+	+++	+++	++	+	+	++	+	-	-	+	+
Identify remaining challenges in the subject area, formulate	++	+++	+++	+	++	+	+++	+	+++	+++	-	+	-	+	-	-	+

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questions and identify ways to solve them																	
To formulate scientific hypotheses, the purpose and tasks of scientific research	+	+	+++	++	+	+	++	+++	+++	+++	+	+	-	-	-	-	-
create design and research plan	++	++	++	+++	++	+++	+++	+++	+++	+++	-	-	-	+	-	-	+
Perform original scientific research	+++	+	+	+	++	+++	+++	+	+	++	+++	+++	+	+++	-	+	+++
Explain the principles, specificity and sensitivity of research methods, informativeness of selected indicators	++	+	+	+	++	+++	++	+	+	+++	+++	+++	+++	++	-	-	+++
be in possession, improve and introduce new research methods in chosen direction of a scientific project and educational activity	+++	+++	+++	+	+++	+++	++	+++	-	+	+++	++	+++	++	-	+	++
Analyze the results of scientific research, use statistical	++	+++	+++	+	+	+	+++	+++	+	++	+++	+++	++	++	-	-	++

research methods																	
To inculcate the results of scientific research into the educational process, medical practice and society	+	+++	+	+	+	+	+++	+++	-	-	-	-	+++	+++	+++	+	++
Present the results of scientific research in the form of presentations, poster reports, publications	++	+	+	+	+++	+	+++	++	+	+	+	+	+++	+++	+	+	+++
To develop communication in the professional environment and the public sphere	+	+	+	-	+++	+	++	+++	+								
Organize the educational process	+++																
Evaluate the effectiveness of the educational process, recommend ways to improve it	+++																
Organize the collective work (students, colleagues, interdisciplinary	+++																

team)																			
Adhere to ethical principles of working with patients, laboratory animals	+																		
To adhere to academic integrity, to be responsible for the reliability of the obtained scientific results	+++																		

Note: The number of "+" signs reflects the component impact on the formation of a programmatic learning result:

"+++" - This component is dominant

"++" - this component is sufficient

"+" - this component does not make a significant contribution

"-" - this component is not assimilated

V – Certification forms of candidates for higher education degree of the Doctor of Philosophy

Certification forms of candidates for higher education degree of the Doctor of Philosophy	Education program qualification – according to ECTS (European Credit Transfer and Accumulation System) (considering the total amount of credits and the level of mastering of each education year)
	Public defense of scientific achievements in the form of thesis
	PhD student is allowed to defend his thesis only after mastering an educational program
Requirements for final qualifying paper	• PhD student conducts scientific researches according to an individual plan of scientific work, which is approved by the Academic Council; • an individual plan of scientific work is a separate document, which is developed on the basis of an educational-scientific program and used to evaluate planned scientific work success; • an individual plan of scientific work completes thesis defense; • thesis is an individual creative research work, carried out by PhD student under the scientific supervisor direction; • it should be the result of a complete creative development and show that the author is proficient in modern research methods and is able to solve professional and scientific problems of theoretical and practical importance in the field of health care independently; • thesis is presented in Ukrainian or English. It should have clear, comprehensible formulation of aspects, obtained results etc.; • PhD student, the author of thesis, is directly responsible for all outlined information, procedure for the use of actual material and other information during thesis writing, validity of conclusions and aspects, that are stated in the work; • thesis execution must satisfy the existing requirements; • the expert commissions of the institutions where thesis was carried out, study the issue of presence or absence of borrowings in it, use of ideas, scientific results and materials of other authors without reference to the source; • the content of thesis is published on the official website of university
Requirements for public defense of qualifying paper	• The procedure and conditions for public defense of thesis comply with current Regulations and the law

VI - System requirements of higher education internal quality assurance

Principles and procedures for ensuring the quality of education	Defined and legitimized in the documents: Law of Ukraine "On Higher Education" of 01.07.2014. No 1556-VII, "Standards and Guidelines for Quality Assurance in the European Higher Education Area" of the European Association for the Quality Assurance in Higher Education, National Standard of Ukraine "Quality Management Systems", DSTU (State Standard of Ukraine) ISO 9001: 2009.
	Principles of quality assurance:
	• correspondence with European and national standards of higher education quality;
	• autonomy of a higher educational institution that is accountable for ensuring the quality of educational activities and the quality of higher education;
	• quality monitoring;
	• a systematic approach that involves quality managing at all stages of the educational process;
	• continuous improvement of the quality of educational and scientific process;
	• exposure of information at all stages of quality assurance.
	Quality assurance procedures:
	• research and educational environments provision;
	• improving the educational activities planning: mentoring and periodicly updating the educational program;
	• qualitative selection of the cohort of higher education graduates of the educational-scientific level PhD;
	• qualitative selection of scientific supervisors for the PhD education;
	• improvement of material, technical, scientific and methodological bases for the educational program implementation;
	• provision of the necessary resources to finance the higher education graduates training at the PhD level;
	• information systems development in order to increase the efficiency of educational and scientific process

	management; • ensuring the publicity of information about the activities of university; • creation of an effective system of preventing and detecting academic plagiarism in the scientific works of university staff and PhD students; • creation of an effective system of prevention of corruption and bribery in the educational process of higher educational institutions.
Educational program monitoring and periodic review	The educational-scientific process at thePhD level is carried out in accordance with the standard of higher education and the educational program developed on its basis. The monitoring and periodic review of the educational program is conducted in accordance with the provisions developed by the university. The criteria for reviewing the educational program are formulated as a result of feedback from scientific and pedagogical staff, graduate students, employers, and as a result of the prediction of branch development, the needs of society and the labor market. Indicators of the modern educational program are: • updating in accordance with the current state of medicine; • participation of employers in the development and implementation of changes in the educational program; • positive responses of reviewers for the educational program; • satisfaction degree of graduate students with the educational program content; • positive feedback from employers of scientific opponents and reviewers on the level of postgraduate training.
Annual assessment of higher education candidates	Assessment of knowledge, skills and abilities of postgraduates is carried out in higher educational institutions on the basis of their own regulations on the educational process organization. The postgraduate quality assessment system includes: entry, current, semester, annual, final control. During the annual certification, the postgraduate student reports once a year to the postgraduate department of the university on the plan of

	educational and scientific program implementation.
Qualification improvement of scientific and pedagogical, pedagogical and scientific workers	The teaching staff of higher educational establishment increases the qualification in Ukraine and abroad.

Higher education establishment provides different forms of professional development of scientific and pedagogical workers at least once in 5 years in accordance with a five-year plan-schedule, which is approved by the Academic Council of the University and put into operation by the order of the university president.

The university has the right to implement its own programs and forms of advanced training (seminars, master classes, trainings, conferences, webinars, round tables, pedagogical skill schools, etc.). |
| Availability of the necessary resources for the organization of the educational process | Resources for the organization of PhD training at universities are:

- the higher education standard at the educational-scientific level of the PhD of specialty 222 Medicine;
- higher educational institutions educational program for the preparation of PhD;
- the provision of the university on the PhD preparation;
- work curriculum;
- work disciplines syllabus.

In accordance with the current licensing terms:

- proper teaching and methodological support (complex) of educational disciplines;
- modern information sources and computer hardware;
- own department web site responsible for PhD preparing;
- Internet connection;
- a library with modern educational literature, scientific, reference and professional periodicals;
- technical training means;
- availability of practical bases for conducting all types of practice;
- appropriate personnel training in disciplines teaching. |

Availability of information systems for effective management of the educational process	Electronic system of information gathering and analysis (One State Electronic Base on Education) and others. Electronic document flow system. Electronic mailbox.
Publicity of information about educational programs, higher education and qualifications degrees	The official web site of the universities publishes: the statute, the actual provision on the educational process organization, the rules of admission, the higher education degree, which is followed by training of specialists, including the PhD level, basic data on educational programs, etc.
Prevention and detection of academic plagiarism	Procedures and measures: • formation of a higher educational institutions staff that does not accept and does not allow academic dishonesty; • creating conditions for intolerance to instances of academic plagiarism; • creation of expert commissions for the discovery of academic plagiarism in scientific articles, monographs, textbooks, educational and methodical editions, dissertations, etc.; • identifying and prosecuting those responsible for academic plagiarism.

Project team leader:
Vice-rector on scientific and pedagogical work
and development issues, M. D., professor   M. O. Klymenko

Project team members:
Head of Anatomy, Histology,
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M. D., professor   V. S. Cherno

Head of Propaedeutic,
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M. D., Researc Fellow   M. J. Zakh

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