

**MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE
LVIV POLYTECHNIC NATIONAL UNIVERSITY**

**“CONFIRM”
Rector of
Lviv Polytechnic
National University**

_____ /Bobalo Yu. Ya./
«_____» _____ 2021

EDUCATIONAL AND SCIENTIFIC PROGRAM

of the third (educational and scientific) level

of Higher Education

specialty 051 “Economics”

areas of knowledge 05 “Social and behavioural sciences”

Qualification: Doctor of philosophy, specialty “Economics”

Reviewed and approved by
Academic Council of the University
(protocol no. _____
from “_____” _____ 2021)

Developed by the working group on quality assurance of the educational and scientific program, which trains applicants at the third (educational and scientific) level of higher education in the specialty 051 “Economics” consisting of:

Head of the Working Group (guarantor):

Mrykhina O. B., doctor of economics, professor, Professor of the Department of enterprise economics and investment

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Fedak T. V., candidate of Economic Sciences, Development Director of eco-Optima LLC

Danylovyh O. T., postgraduate student of the 1st year of study in the specialty 051 “Economics”

Bohdan P. I., postgraduate student of the 2nd year of study in the specialty 051 “Economics”

Kosobutskyi M. O., chairman of the board and professional Bureau of students of the

educational and Scientific Institute of Economics and management,
Maslak T. O., chairman of the social and Legal Department of the board and the professional Bureau of students of the educational and Scientific Institute of Economics and management

Guarantor _____ doctor of economics, professor, Mrykhina O. B.

Approved and put into force by the Order of the rector of Lviv Polytechnic National University from “_____” _____ 2021 r. No. _____.

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APPROVAL LETTER
of educational and scientific program

Level of Higher Education
Branch of knowledge
Specialty
Qualification

third (educational and scientific)
05 social and behavioral sciences
051 Economics
doctor of philosophy

APPROVED

Scientific and methodological
Commission of specialty

051 Economics

Protocol no. _____

from “__” _____ 2021

Chairman of the educational and
methodical complex Specialty

051 Economics

_____ Kozyk V. V.

“__” _____ 2021

Director of Educational and scientific
institute of economics and management

_____ O. Ye. Kuzmin

“__” _____ 2021

RECOMMENDED

Scientific and Methodological Council
of the University

Protocol no. _____

from “__” _____ 2021

Chairman of the Scientific and
Methodological Council

_____ A. G. Zahorodnii

CONFIRMED

Head of the educational and
methodological Department

_____ Sviridov V. M.

“__” _____ 2021

Vice-rector for research

_____ Demydov I. V.

“__” _____ 2021

Vice-rector for scientific and
pedagogical work

_____ Davydchak O. R.

“__” _____ 2021

I. EDUCATIONAL COMPONENT OF THE EDUCATIONAL AND SCIENTIFIC PROGRAM

1. PhD program profile specialty 051 “Economics”

1 – General information	
1	2
Full name of the higher education institution and structural division	Lviv Polytechnic National University
Full name of the qualification in the original language	Doctor of Philosophy by Specialty of Economics
Official name of the educational and scientific program	Economics
Type of diploma and scope of the educational program	Diploma of Doctor of philosophy, single, 43 ECTS credits of the educational component of the educational and scientific program, the term of the educational component of the educational and scientific program is 2 years.
Availability of accreditation	The educational and scientific program is accredited for the first time.
Cycle/level	NRC of Ukraine-Level 8, FQ-EHEA-third cycle, Eqf-LLL-level 8.
Background	Availability of an educational degree “Master”.
Language(s) of teaching	Ukrainian
Basic concepts and their definitions	The educational and scientific program uses the basic concepts and their definitions in accordance with the law of Ukraine “On higher education” of 01.07.2014 No. 1556-VII with amendments and additions, the law of Ukraine “On education” of 05.09.2017 No. 2145-VIII with amendments and additions, the law of Ukraine “On scientific and scientific-technical activities” of 26.11.2015 No. 848-VIII with amendments and additions, the procedure for training applicants for higher education the degree of Doctor of philosophy and Doctor of Science in institutions of higher education (scientific institutions), approved by the resolution of the Cabinet of ministers of 23.03.2016. No. 261 with amendments and additions, the procedure for conducting an experiment for awarding the degree of Doctor of philosophy, approved by the resolution of the Cabinet of Ministers of Ukraine of 06.03.2019 No. 167, methodological recommendations for the development of Higher Education Standards, approved by the Order of the Ministry of education and science of Ukraine of 01.06.2017 No. 600 with amendments and additions, the regulation on Accreditation of educational programs for which higher education applicants are trained, approved by the order of the Ministry of education and science of Ukraine of July 11, 2019 No. 977.
2 – Purpose of the educational and scientific program	
	Training of highly qualified specialists who will have the competence to solve complex problems in the field of economics, will be able to creatively and effectively conduct research and educational activities, meet modern academic standards and occupy leading positions in European and global research environments.

1	2
3 - Characteristics of the educational and scientific program	
Subject area (branch of knowledge, specialty)	Branch of knowledge 05 “Social and behavioural sciences”, specialty 051 “Economics”.
Orientation of the educational and scientific program	The educational and scientific program is based on the fundamental postulates of macro-, meso - and microeconomics and the results of modern scientific research in the field of innovative development of economic theory and practice. It is aimed at developing the theoretical, methodological and methodological-applied base of the economy at all levels with emphasis on the latest trends in the development of the economic sphere, which deepens the professional scientific worldview and provides the basis for scientific research and further professional and scientific activities.
Features of the program	The educational and scientific program covers a wide range of modern innovative vectors of development of economic theory and practice at all levels, provides for mastering the latest tools of scientific research and innovative teaching methods, which forms an updated theoretical and applied and scientific-methodological base for conducting scientific research and educational activities.
4 – Eligibility of graduates of the educational and scientific program to employment and further training	
Suitability for employment	Jobs in public and private institutions of Higher Education, Scientific and research institutions as teachers and researchers, in state and local authorities, in enterprises and organizations of various types of activity and forms of ownership, in economic positions.
Further training	Scientific program of the fourth (scientific) level of Higher Education “Doctor of science”.
5 – Teaching and evaluation	
Teaching and learning	A combination of lectures and practical classes, pedagogical practice, consulting with the supervisor and the scientific and pedagogical community with independent scientific and educational work.
Evaluation	Assessment with all types of classroom and extracurricular educational activities in the form of intermediate and/or final (semester) control.
6 – Program competencies	
Integral competence (INT)	The ability to produce new ideas, solve complex problems in the field of economic professional and/or research and innovation activities, apply the methodology of scientific and pedagogical activities, as well as conduct your own scientific research, the results of which have scientific novelty, theoretical and practical significance.
General competencies (GC)	<ol style="list-style-type: none"> 1. Ability to think abstractly, critically analyse and synthesize new ideas. 2. Mastering general scientific (philosophical) competencies aimed at forming a systematic scientific worldview, professional ethics and a general cultural worldview; applying modern information technologies in scientific activities (working with scientometric database, automatic formation of references to literary sources). 3. Acquisition of universal skills of the researcher, in particular oral and written presentation of the results of their own research in Ukrainian, management of scientific projects and/or preparation of proposals for the financing of scientific research, registration of intellectual property rights, application of modern information technologies.

1	2
General competencies (GC)	<p>4.Acquisition of universal skills of the researcher, in particular, the organization and conduct of training sessions, the use of modern information technologies (working with the VNS, Microsoft Teams, Zoom, etc.).</p> <p>5. Obtaining language competencies sufficient to present and discuss the results of their scientific work in a foreign language in oral and written form, as well as to fully understand foreign-language scientific texts in the relevant specialty, the use of modern information technologies (presentation of scientific results).</p> <p>6.Ability to work in conditions of limited time and resources, interact in scientific and professional teams in compliance with ethical obligations, and show leadership skills in the process of performing professional duties.</p> <p>7.The ability to independently conduct scientific research, analyse, systematize and generalize research results, critically evaluate both other people's and their own ideas, formulate their own author's conclusions, suggestions and recommendations.</p>
Special (professional) competencies (SC)	<p>1.Obtaining deep knowledge in the specialty in which the graduate student conducts research, in particular, mastering the basic concepts, understanding theoretical and practical problems, the history of development and the current state of scientific knowledge in the chosen specialty, mastering the terminology of the scientific direction under study.</p> <p>2.The ability to identify the problem field and formulate scientific and practical tasks in the field of Economics, produce original scientific knowledge and ideas, expand and deepen the theoretical and applied foundations of the functioning and development of socio-economic systems at all levels.</p> <p>3.The ability to integrate and apply the results of intersubject scientific research in the process of solving theoretical and applied problems in a specific field of Economic Research.</p> <p>4.Ability to apply classical and latest scientific tools for conducting theoretical and empirical research in the socio-economic sphere.</p> <p>5.Ability to justify strategic directions for the development of socio-economic systems at various levels, initiate, develop and implement socio-economic projects and programs of an innovative nature.</p> <p>6. Ability to develop new mechanisms, tools and models to improve the efficiency of functioning and development of socio-economic systems at various levels.</p> <p>7. Ability to transfer and commercialize research results.</p>
7 – Program learning outcomes	
Knowledge (KN)	<p>1.Think analytically and have practical skills in the field of philosophical methodology of scientific knowledge, psychological and pedagogical aspects of professional and scientific activity, own scientific worldview and moral and cultural values.</p> <p>2.Demonstrate a sufficient level of knowledge of a foreign language necessary for oral and written presentation of research results, conducting a professional scientific dialogue, and full understanding of foreign-language scientific texts.</p>

1	2
Knowledge (KN)	<p>3. Know and understand the main concepts, theoretical and practical problems, the history of development and the current state of scientific knowledge in the field of Economics.</p> <p>4. Possess classical and modern methodological and methodological bases of research of socio-economic phenomena and processes.</p> <p>5. Know the forms and methods of commercialization of scientific research results.</p>
Skill (SK)	<p>1. Perform critical analysis and evaluation of domestic and foreign scientific experience and practical experience in the field of macro-, meso - and microeconomics, conduct scientific generalization of patterns of socio-economic phenomena and processes.</p> <p>2. Apply modern software products and information technologies in scientific and teaching activities.</p> <p>3. Apply classical and state-of-the-art scientific tools for conducting theoretical and empirical research in the socio-economic sphere.</p> <p>4. Substantiate strategic directions for the development of socio-economic systems at various levels, initiate, develop and implement socio-economic projects and programs of an innovative nature based on the use of new mechanisms and tools.</p> <p>5. Integrate and apply the acquired knowledge from various intersubject spheres in the process of solving theoretical and applied problems in a specific field of Economic Research.</p> <p>6. Conduct scientific research and carry out scientific projects based on identifying current scientific problems, defining goals and objectives, forming and critically analysing the information base, justifying and commercializing research results, formulating author's conclusions and proposals.</p> <p>7. Conduct scientific conversation and discussion in Ukrainian and foreign languages at the proper professional level, present the results of scientific research in oral and written form, organize and conduct training sessions.</p>
Communication (COM)	<p>1. Ability to communicate in business scientific and professional language, convey information, ideas, problems, solutions and their own experience in the field of professional activity to specialists and non-specialists, demonstrate a wide scientific and professional vocabulary.</p> <p>2. Ability to apply modern information and communication tools and technologies to ensure a communication strategy.</p>
Autonomy and responsibility (A and R)	<p>1. Management of complex actions or projects, responsibility for making decisions in unpredictable conditions.</p> <p>2. Responsibility for the professional development of individuals and/or groups of individuals, the ability to evaluate the results of their own work and be responsible for personal professional development.</p>
8 – Resource support for the implementation of the educational program	
Specific characteristics of HR management software	100% of research and teaching staff involved in teaching the cycle of disciplines that provide special (professional) competencies of a postgraduate student, have scientific degrees and academic titles, are recognized professionals with experience in research, management or innovation work in the specialty.

1	2
Specific characteristics of logistics support	Using modern software: “Microsoft Office”; “Microsoft Project”; “Statistica”; “QlikView (Business Analysis System); “Allfusion process Modeler” (Business Process Modeling System); “Rune WFI” (business process management system and Regulation Administration); “ERwin process Modeler” (database design and documentation system); “ARENA” (simulation system).
Specific characteristics of information and methodological support	Using the virtual learning environment of the National University “Lviv Polytechnic” and the author's developments of research and teaching staff.
9 – Academic mobility	
National credit mobility	On the basis of bilateral agreements between the National University “Lviv Polytechnic” and universities of Ukraine.
International credit mobility	On the basis of bilateral agreements between the National University “Lviv Polytechnic” and educational institutions of partner countries.
Training of foreign postgraduates	Possible.

**2. Content distribution
educational component of the educational and scientific program
by component groups and preparation cycles**

No	Training cycles	The amount of a graduate student's academic load (credits/%)		
		Required components of the educational component	Selective components of the educational component	Total for the entire term training
1.	A cycle of disciplines that form general scientific competencies and universal skills of the researcher	21/49	3/7	24/56
2.	Cycle of disciplines that form professional competencies	10/23	6/14	16/37
3.	Cycle of disciplines of free choice of a graduate student	-	3/7	3/7
Total for the entire duration of training		31/72	12/28	43/100

2. List of components of the educational component of the educational and scientific program

Code	Components of the educational component	Number of credits	Form of final control
1	2	3	4
1. Mandatory components of the educational component			
<i>1.1. Cycle of disciplines that form general scientific competencies and universal skills of the researcher</i>			
OK1.1.	Philosophy and methodology of science	3	exam
OK1.2.	Foreign language for academic purposes, Part 1	4	credit
OK1.3.	Foreign language for academic purposes, Part 2	4	exam
OK1.4.	Professional pedagogy	3	credit
OK1.5.	Academic entrepreneurship	4	credit
OK1.6.	Teaching practice*	3	credit
Total per cycle:		21	
<i>1.2. Cycle of disciplines that form professional competencies</i>			
OK2.1.	Analytical and numerical methods of research in economics	4	exam
OK2.2.	Research Seminar on economics, management and international economic relations	3	credit
OK2.3.	Modelling of economic processes	3	credit
Total per cycle:		10	
2. Selective components of the educational component **			
<i>2.1. Cycle of disciplines that form general scientific competencies and universal skills of a researcher</i>			
BB1.1	Business Foreign Language	3	credit
BB1.2	Psychology of creativity and invention	3	credit
BB1.3	Scientific project management	3	credit
BB1.4	Technology for processing grant applications and patent rights	3	credit
BB1.5	Rhetoric	3	credit
BB1.6	Modern equipment in research activities	3	credit
BB1.7	Open scientific practices	3	credit
BB1.8	Academic integrity and quality of Education	3	credit
BB1.9	Methodology for preparing scientific publications	3	credit
BB1.10	Quality of Higher Education (formation of internal quality assurance systems)	3	credit
Total per cycle:		3	
<i>2.2. Cycle of disciplines that form professional competencies</i>			
BB2.1	Paradigms of economic development	3	exam
BB2.2	Evolutionary development of economic systems	3	exam
BB2.3	Economics and knowledge management	3	exam
BB2.4	Problems of the economy of sustainable development	3	exam
BB2.5	Innovative systems of economic diagnostics	3	exam
BB2.6	Application of SMART systems in the economy	3	exam
BB2.7	Technology transfer and commercialization	3	exam
BB2.8	Innovative economic development	3	exam
BB2.9	Modern enterprise cost management tools	3	exam
BB2.10	Information and intellectual economy	3	exam
BB2.11	Concepts of formation and development of interaction of economic systems	3	exam
BB2.12	Strategic Management in a behavioural economy	3	exam
Total per cycle:		6	
3. Subjects of the graduate student's free choice **			
BB3.1	Graduate student's free choice discipline	3	credit
Total per cycle:		3	
TOTAL		43	

Notes: * - teaching practice can take place in the second or third year of study; ** - the graduate student has the opportunity to choose subjects from paragraphs 2, 3 (selective and free choice), while the share of these subjects must be at least 25% of the total number of ECTS credits.

4. Matrix of compliance of program competencies with educational components

Symbols: OK_i - mandatory discipline, ББ_i – selective discipline, i – discipline number in the list of components of the educational component, IHT – integral competence, ЗК_j – general competence, ФК_j – professional (special) competence, j – competence number in the list of competencies of the educational component.

5. Matrix for providing software learning outcomes with relevant components of the educational component

Symbols: MD_i – mandatory discipline, SD_i – selective discipline, i – discipline number in the list of components of the educational component, KN_m – program results (knowledge), SK_m – program results (skills), COM_m – programme results (communication), AiB_m – programme results (autonomy and responsibility), m – number of the program result in the list of program results of the educational component.

II. Scientific component of the educational and scientific program

The scientific component of the educational and scientific program provides for the postgraduate student to conduct his own scientific research under the guidance of one or two scientific supervisors and formalize its results in the form of a dissertation.

The dissertation for the degree of Doctor of philosophy is an independent detailed research that offers a solution to an actual scientific and applied problem in the specialty 051 "Economics", the results of which are characterized by scientific novelty and practical value and published in relevant publications.

The scientific component of the educational and scientific program is drawn up in the form of an individual plan of scientific work of a graduate student and is an integral part of the postgraduate curriculum.

An integral part of the scientific component of the postgraduate educational and scientific program is the preparation and publication of scientific articles, presentations at scientific conferences, scientific professional seminars, round tables, symposia.

Research topics in the specialty 051 "Economics":

1. Models of public economic management.
2. Principles and prerequisites for the functioning of the circular economy.
3. Concept of sustainable development of the Ukrainian economy.
4. Strategic planning of the economy.
5. Macro - and microeconomic indicators of production and economic structures, industries, and regions.
6. Features and prospects of using cloud technologies and neural networks in the economy.
7. Concepts and models of economic activity defined by the modern technological order.
8. Systems of interaction of economic entities: a cluster approach.
9. National innovation system of Ukraine.
10. Organization and regulation of the activities of subjects of innovative infrastructures.
11. Economic Development based on SMART technologies.
12. Economic foundations of resource and energy saving.
13. Economic foundations of foreign economic activity of business entities of Ukraine: problems and prospects of development.
14. Management of intangible assets and intellectual property in modern economic conditions.
15. Problems and features of the development of the "green economy".
16. Methods and models of economic assessment of the activities of production and economic structures.
17. Economic assessment of the enterprise's potential.
18. Methodological bases for estimating the cost of innovative technologies.

19. Modern personnel management systems of enterprises.
20. Economic diagnostics of performance indicators of business structures.
21. Principles and bases of innovation and investment activity of business entities.
22. Information support for assessing the innovation and investment attractiveness of production and economic structures.
23. Application of Information Technology models in the management of socio-economic processes.
24. Process and simulation modelling of economic systems.
25. Modern concepts of innovation theory.
26. Controlling at enterprises.
27. Production Quality Management.
28. Employee motivation systems at enterprises.
29. Innovative entrepreneurship: principles, models, development trends.
30. Ecosystems of innovation commercialization.
31. Economic Assessment of innovative activity of enterprises.
32. Economic assessment of the innovative capacity of the market.
33. Economic assessment of the company's innovation sensitivity.
34. Innovation and investment strategies for the development of economic structures, industries and regions.
35. Assessment of the competitiveness of the company's products.
36. Economic tools for justifying the investment attractiveness of a startup.
37. Academic entrepreneurship and technology transfer.
38. Formation of business models of enterprises.
39. Balanced systems of indicators of the enterprise.
40. Economic assessment and principles of ensuring economic stability and security of business entities.
41. Principles of bankruptcy recognition and rehabilitation of an enterprise.
42. Business transformation based on a cost-based approach.
43. Economic processes in the context of globalization and integration.

Section 1. General economic issues

1. Models of economic systems: essence, advantages, disadvantages.
2. The concept of the category "product" in the context of market relations.
3. Product Value and factors that determine it.
4. Main postulates of the theories of value and utility.
5. Market infrastructure: concept, principles of functioning, features.
6. Key principles of evolutionary development of the economy.
7. Strategic planning of the economy.
8. Regional economy of Ukraine: formation and regulation.
9. National innovation system of Ukraine.
10. Organization and regulation of the activities of subjects of innovative infrastructures.
11. Enterprise as a key subject of economic relations. Classification of enterprises by form of ownership.
12. Types of business associations, their characteristics.

13. Fixed and current assets of the enterprise: types, characteristics, features of formation.
14. Fundamentals of entrepreneurship in Ukraine.
15. Essence and types of competition.
16. Concept of monopoly. Natural monopolies.
17. Forms of monopolistic associations and their characteristics.
18. Methods and methods of state influence on subjects of violation of antimonopoly legislation.
19. Enterprise Capital Management.
20. Prime cost as an economic category. Classification of expenses.
21. Profit as an economic category.
22. Profitability of the enterprise's activities.
23. Ways to improve production efficiency.
24. Demand as an economic category. Price elasticity of demand.
25. Supply as an economic category. Price elasticity of supply.
26. Price as an economic category. Structure and classification of prices.
27. Pricing methods and models.
28. Essence and types of social reproduction at the macro level.
29. Structural shifts in the proportions of social reproduction.
30. Extensive and intensive types of economic growth.
31. Gross national product: concept and features of formation.
32. Economic content of the categories: net national product, national income and personal income.
33. Economic equilibrium and cyclicity. Cycle phases.
34. Unemployment: causes, types, and social consequences.
35. Concept of inflation, its forms and rates.
36. Keynesian and monetary models of economic development.
37. State budget as the main link in the state's financial system.
38. Social and economic policy of the state.
39. Essence and factors of wage formation.
40. Public consumption funds: the essence and sources of formation.
41. System of the world economy, its main characteristics and directions of development.
42. International Monetary System and currency relations.
43. Globalization of the modern economy.
44. International division of labour. Forms of World Economic Relations.
45. International Trade and foreign economic policy.
46. Prerequisites and features of foreign economic activity of enterprises.
47. Methods and models of economic assessment of the activities of production and economic structures.
48. Innovative potential of the enterprise: essence and key characteristics.
49. Economic assessment of the enterprise's potential.
50. Methodological bases for estimating the cost of innovative technologies.
51. Modern personnel management systems of enterprises.
52. Economic diagnostics of performance indicators of business structures.

53. Principles and principles of innovation and investment activity of business entities.
54. Evaluation of labour efficiency.
55. Economic foundations of controlling in enterprises.
56. Economics and production quality management.
57. Employee motivation systems at enterprises.
58. Approaches to assessing the competitiveness of an enterprise's products.
59. Methods and methods of competition.
60. Balanced systems of enterprise indicators.

Section 2. Issues of professional disciplines

1. Principles and prerequisites for the functioning of the circular economy.
2. Digitalization of the world economy: problems and prospects.
3. Digital Economy in Ukraine: prerequisites for formation and development prospects.
4. Monopolization of the Ukrainian economy: causes and consequences.
5. Concept of sustainable development of the Ukrainian economy.
6. Macro - and microeconomic indicators of production and economic structures, industries, and regions.
7. Features and prospects of using cloud technologies and neural networks in the economy.
8. Concepts and models of economic activity defined by the modern technological order.
9. New economy: essence, subspecies and features.
10. Systems of interaction of economic entities: a cluster approach.
11. Economic development based on SMART technologies.
12. Economic foundations of resource and energy saving.
13. Foreign economic activity of business entities of Ukraine: problems and prospects of development.
14. Management of intangible assets and intellectual property in modern economic conditions.
15. Problems and features of the development of the "green economy".
16. Economic assessment of business processes of enterprises.
17. Modern business analysis systems.
18. Business process modelling systems of enterprises.
19. Economics and knowledge management.
20. Economic forecasting based on simulation modelling.
21. Economic foundations of analysis and application of big data arrays.
22. Application of Information Technology models in the management of socio-economic processes.
23. Process and simulation modelling of economic systems.
24. Economics and Business Process Management.
25. Innovative entrepreneurship in Ukraine: principles, models, development trends.
26. Ecosystems of innovation commercialization.
27. Economic assessment of innovative activity of enterprises.
28. Economic assessment of the innovative capacity of the market.

29. Economic assessment of the innovative susceptibility of the enterprise.
30. Innovation and investment strategies for the development of economic structures, industries and regions.
31. Startup as a modern form of business development.
32. Economic tools for justifying the investment attractiveness of a startup.
33. Academic entrepreneurship and technology transfer.
34. Formation of business models of enterprises.
35. Commercialization of business ideas: principles and features.
36. Economic Assessment and principles of ensuring economic stability and security of business entities.
37. Business Transformation based on a cost-based approach.
38. Essence and versatility of the reproduction process in the economy.
39. Assessment of the country's economic condition based on the dynamics of the main macroeconomic indicators and in comparison, with similar indicators of other countries.
40. Features of the economic state in the phases: rise, revival, depression, crisis.
41. Economic aspects of the impact of the covid-19 pandemic on Ukraine.
42. Impact of inflation on the development of macroeconomic processes in Ukraine.
43. Ways and economic tools for solving budget deficit problems.
44. Impact of lending on the development of macroeconomic processes.
45. Social policy of Ukraine at the present stage: problems and prospects.
46. Characteristics of the main forms of Interstate associations in the modern economy.
47. Problems and prospects of integration of the Ukrainian economy into the world economy.
48. Information support for assessing the innovation and investment attractiveness of business structures.
49. Economic processes in the context of globalization and integration.
50. Role of Ukraine's cooperation with the IMF and the World Bank in the context of economic development.
51. Innovative systems of economic diagnostics.
52. Strategic management in a behavioural economy.
53. Evolutionary development of economic systems.
54. Approaches to estimating the value of an innovative product.
55. Modern tools for managing income and expenses of business entities.
56. Intellectual business: features of formation and prospects of development in Ukraine.
57. Modern features of foreign economic activity of business entities of Ukraine.
58. Economic assessment of the effectiveness of foreign economic operations and transactions.
59. Foreign investment of the Ukrainian economy: the essence and indicators of performance assessment.
60. Modern concepts of innovation theory.
61. Economics and Business Process Management.
62. Economic development based on the principles of Industry 4.0.

III. Certification of graduate students

Certification of applicants for higher education with the degree of Doctor of philosophy is carried out by a specialized academic council that is permanently active or formed for a one-time defence, on the basis of a public defence of scientific achievements in the form of a dissertation.

A prerequisite for admission to the defence is the successful completion of the graduate student's individual curriculum.

The volume of the main text of the dissertation should be 4.0 – 5.5 author's sheets.

The condition for certification of applicants for higher education with the degree of Doctor of philosophy is compliance with the principles of academic virtue set out in the regulations on academic virtue at the National University “Lviv Polytechnic” (<https://lpnu.ua/sites/default/files/2020/pages/1553/178-10vid08092017-2-9.pdf>)