

**SYLLABUS OF THE EDUCATIONAL COMPONENT**  
**SYSTEMIC ANALYSIS OF HEALTH INSTITUTIONS**

for applicants for higher education of 5 year of study  
full-time form of education  
of educational program «**Pharmacy**»  
in specialty «**226 Pharmacy, industrial pharmacy**»  
field of knowledge «**22 Health care**»  
training for second (master's) level of higher education

**TEACHERS**



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**4. Information about the teachers:**

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*PhD in Economics, Doctor of Pharmacy, Professor of the Department of Pharmacy Organisation and Economics at the National University of Pharmacy, Honoured Worker of Science and Technology of Ukraine. She has 45 years of scientific experience and 41 years of teaching experience. Teaches courses: "Organisation and Economics of Pharmacy", "Assessment of Healthcare Technologies", "Public Administration of the Healthcare System". Research interests: problems of state management and regulation in pharmacy, pharmaceutical pricing, evaluation of healthcare technologies, pharmacoeconomics, insurance formulation, regulation of prescription drugs.*

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*Doctor of Pharmacy, Professor of the Department of Pharmacy Organisation and Economics at the National University of Pharmacy. He has 25 years of scientific experience and 23 years of teaching experience. Teaches courses: "Organisation and Economics of Pharmacy, Assessment of Healthcare Technologies, Public Administration of the Healthcare System, Public Procurement in the Healthcare System. Research interests: pricing of medicines, problems of state regulation in pharmacy, evaluation of medical technologies, public procurement in healthcare; pharmacoeconomics*

**MISHCHENKO Viktoriya**

*Candidate of Pharmaceutical Sciences, Associate Professor of the Department of Pharmacy Organisation and Economics at the National University of Pharmacy. She has 15 years of scientific experience and 11 years of teaching experience. Teaches courses: "Organisation and Economics of Pharmacy", "System Analysis of Pharmaceutical Institutions", "Fundamentals of Health Economics", "Medical and Pharmaceutical Commodity Research". Research interests: problems of regulatory and legal regulation of pharmaceutical activities, circulation of medicines, medical devices, cosmetics and parapharmaceuticals in the domestic pharmaceutical market*

5. **Consultations** Consultations are held on the ZOOM platform according to the schedule.
6. **Brief summary of the educational component:** *"System analysis of pharmaceutical institutions" allows to systematise and deepen theoretical knowledge and practical skills in the organization and economics of pharmacy for a comprehensive analysis of the financial and economic activities of pharmacies*
7. **The purpose statement of studying the educational component** *formation of professionally important knowledge, skills and abilities in higher education applicants to organise effective activities of pharmacies based on the results of system analysis.*

**8. Competencies in accordance with the educational program:**

**Soft-skills / General competencies (GC):**

- GC 2. Ability to apply knowledge in practical situations, make reasonable decisions.
- GC 4. Ability to abstract thinking, analysis and synthesis, to learn and be modernly trained..
- GC 6. Knowledge and understanding of the subject area and understanding of professional activity.
- GC 9. Skills in the use of information and communication technologies..
- GC 12. Ability to conduct research at the appropriate level.

**Hard-skills / Professional (special) competencies (PC):**

- PC 8. Ability to organize the activities of pharmacies to provide the population, health care institutions with medications and other products of the pharmacy range and implement appropriate reporting and accounting systems (management, statistical, accounting and financial) in accordance with the requirements of the National Medical Policy, Appropriate Pharmacy Practice (GPP) and to carry out commodity analysis, administrative record keeping while taking into account the organizational and legal norms of the pharmaceutical legislation..
- PC 9. Ability to analyze and forecast the main economic indicators of pharmacies, to calculate basic taxes and fees, to form prices for medicines and medical devices in accordance with current legislation of Ukraine.

**9. The program learning outcomes: (PLO):**

- PLO 2. To apply knowledge of general and professional disciplines in professional activities..
- PLO 4. To demonstrate the ability to independently search, analyze and synthesize information from various sources and use these results to solve typical and complex specialized tasks of professional activity..
- PLO 6. To argue information for decision-making, to be responsible for in in standard and non-standard professional situations; to adhere to the principles of deontology and ethics in professional activities..
- PLO 9. To carry out professional activities using information technology, Information Databases; navigation systems, Internet resources, software and other information and communication technologies.
- PLO 12. To analyze the information obtained as a result of scientific research, summarize, systematize and use it in professional activities.
- PLO 21. To calculate the main economic performance of pharmacies, as well as taxes and fees. To form all types of prices (wholesale, purchase and retail) for medicines and other products of the pharmaceutical range.
- PLO 23. To take into account the data on socio-economic processes in society for the pharmaceutical provision of the population, determine the effectiveness and availability of pharmaceutical care in terms of health insurance and reimbursement of the cost of medicines.

**10. Status of the educational component:** *selective*

**11. Prerequisites of the educational component:** *«Organization and economics of pharmacy», «Social pharmacy», «Pharmaceutical management and marketing»*

**12. The volume of the educational component:** 3 ECTS credits; the number of hours for the educational component is 90: for full-time students – 4 hours of lectures, 12 hours of practical classes, 74 hours of independent workes

**13. Organization of training:**

**The format of teaching the educational component:** conducting lectures and practical classes

**Content of the educational component:**

**Content module 1.** *Modern methods of analysis and planning of trade and financial activities of pharmacies and pharmaceutical companies*

**Topic 1.** *Pharmacy practice: basics of system analysis*

**Topic 2.** *Analysis and planning of the main economic indicators of pharmacy activity: prescription*

**Topic 3.** *Economic and financial analysis of pharmacies: a systematic approach*

**Topic 4.** *Break-even analysis (CVP-analysis) of the activity of a pharmacy*

*Content module 1 control*

**The content module 2.** *Economic mechanisms of regulation of pharmaceutical activity*

**Topic 5.** *Basics of financial analysis. Assessment of the property status of the enterprise. Analysis of the structure and dynamics of the balance sheet*

**Topic.6** *Analysis of liquidity and solvency of a pharmacy*

**Topic 7.** *Evaluation of profitability and business activity of a pharmacy*

**Topic 8.** *Analysis of drug price indicators: liquidity of prices, adequacy of solvency and availability of drugs for the population*

*Content module 2 control*

*Semester assessment*

**14. Types and forms of control:**

*Current control:* oral survey, writing test tasks, solving situational (calculation) problems, etc.)Control of content modules: oral survey, writing test tasks, solving situational (calculation) problems, etc.)Semester control form: semester assessment

*Conditions for admission to control of content modules:* for admission to control content module 1, a minimum number of points of 30 for 1-4 classes is required, For content module 2, the minimum number of points is 30 for 5-8 lessons. Practical classes 4 include 2 topics each. Semester credit for the module: ". System analysis of the activity of pharmaceutical establishments" minimum number of points 60 - maximum 100.

*Conditions for admission to the semester control:* current rating of more than 60 points, absence of unworked passes of practical classes, pass tests for each topics.

**15. Evaluation system from the educational component:**

*The results of the semester control in the form of a semester credit are evaluated on a 100-point, non-differentiated scale ("passed", "failed") and on the ECTS scale.*

*Points from the educational component are calculated according to this ratio:*

Types of assessment	Maximum number of points (% of the number of points per module - for content modules)
<b>Module 1</b>	
The content module 1. Modern methods of analysis and planning of trade and financial activities of pharmacies and pharmaceutical companies <i>- evaluation of topics (1-4) (work in classes 1-4): work in classes (oral survey, writing test tasks, solving situational (calculation) problems); - control of content module 1 (writing test tasks, solving situational (calculation) problems)</i>	50 (50 %)
The content module 2. Economic mechanisms of regulation of pharmaceutical activity <i>- assessment of topics (5-8) (work in classes 5-8): work in classes (oral survey, writing test tasks, solving situational (calculation) problems); - control of content module 2 (writing test tasks, solving situational (calculation) problems)</i>	50 (50 %)
Semester control from module 1	100

**The individual work of applicants for higher education is evaluated during the control of knowledge at each lesson and during the content module supervision**

**16. Academic policies of the educational component:**

*Academic Integrity Policy.* It is based on the principles of academic integrity set forth in the Regulations "On measures to prevent cases of academic plagiarism at NUPh". Cheating in assessing the progress of a higher

education student during control measures in practical classes, control of content modules and semester exams is prohibited. Detection of signs of academic dishonesty in the written work of the student is the basis for its non-accreditation by the teacher.

*Class attendance policy.* The applicant for higher education is obliged to attend classes (POL "On the organization of the educational process of the NUPh") according to the schedule (<https://nuph.edu.ua/rozklad-zanyat/>), to adhere to ethical standards of behavior.

*Policy regarding deadlines, working out, rating increase, liquidation of academic debts.* The completion of missed classes by an applicant for higher education is carried out in accordance with the POL "Regulations on the completion of missed classes by applicants and the procedure for eliminating academic differences in the curricula of the National University of Pharmacy" in accordance with the schedule for working out missed classes established by the department. Increasing the rating and liquidating academic debts from the educational component is carried out by the applicants in accordance with the procedure specified in the POL "On the procedure for evaluating the results of training of applicants for higher education at the National University of Pharmacy ". Applicants of higher education are obliged to comply with all deadlines set by the department for the completion of written works from the educational component. Works that are submitted late without valid reasons are assessed at a lower grade - up to 20% of the maximum number of points for this type of work.

*Policy on appeals of evaluation of the educational component (appeals).* Applicants for higher education have the right to contest (appeal) the evaluation of the educational component obtained during control measures. The appeal is carried out in accordance with the POL "Regulations on appealing the results of the final supervision of knowledge by applicants of higher education at the National University of Pharmacy".

### 17. Інформаційне та навчально-методичне забезпечення дисципліни

<b>Required reading</b>	1. <i>Systems theory and systems analysis in economics: a textbook / OV Tyurin, O. Yu. Akhmerov – Odessa: «Odessa II Mechnikov National University», 2019. - 164 p</i> <a href="http://dspace.onu.edu.ua:8080/handle/123456789/28119">http://dspace.onu.edu.ua:8080/handle/123456789/28119</a>
<b>Additional literature for in-depth study of the educational component</b>	1. Bielecki A., Nieszporska S. <i>Analysis of Healthcare Systems by Using Systemic Approach Hindawi Complexity Vol. 2019</i> , <a href="https://doi.org/10.1155/2019/6807140">https://doi.org/10.1155/2019/6807140</a> 2. Smólka J. <i>Institutional Analysis of Healthcare Systems in Selected Developed Countries</i> <a href="https://doi.org/10.1163/9789004517295_006">https://doi.org/10.1163/9789004517295_006</a> 3. <i>Complex systems analysis: towards holistic approaches to health systems planning and policy : Bulletin of the World Health Organization 2011;89:242-242. doi: 10.2471/BLT.11.087544/ Pourbohloul B., Kieny M.-P. – WHO, 2011.</i> <a href="http://www.who.int/bulletin/volumes/89/4/11-087544/en/">http://www.who.int/bulletin/volumes/89/4/11-087544/en/</a> 4. <i>Guideline for the Systems Analysis Investigation of Incidents; Revision №: 3, Approval Date: August 2016. – 78 p.</i> <a href="https://hse.ie/eng/about/QAVD/Incident-Management/HSE-Systems-Analysis-Investigation-Guidelines-Part-1-and-Part-2.pdf">https://hse.ie/eng/about/QAVD/Incident-Management/HSE-Systems-Analysis-Investigation-Guidelines-Part-1-and-Part-2.pdf</a> 5. <i>Systems analysis methodology handbook. A Coordinated Approach to Reviewing Clinical Adverse Events and Close Calls. – 2014. – 66 c.</i> 6. <i>Guideline for the Systems Analysis Investigation of Incidents; Revision №: 3, Approval Date: August 2016. – 78 p.</i> <a href="https://hse.ie/eng/about/QAVD/Incident-Management/HSE-Systems-Analysis-Investigation-Guidelines-Part-1-and-Part-2.pdf">https://hse.ie/eng/about/QAVD/Incident-Management/HSE-Systems-Analysis-Investigation-Guidelines-Part-1-and-Part-2.pdf</a>
<b>Current electronic information resources (magazines, websites) for in-depth study of the educational component</b>	1. <i>Website of the Department of Pharmacy Organization and Economy НФаУ –</i> <a href="https://economica.nuph.edu.ua/">https://economica.nuph.edu.ua/</a> 2. <i>The page of the library on the website of the NATIONAL UNIVERSITY OF PHARMACY –</i> <a href="https://nuph.edu.ua/naukova-biblioteka/">https://nuph.edu.ua/naukova-biblioteka/</a> 3. <i>Website of the Scientific Library of the NATIONAL UNIVERSITY OF PHARMACY of Ukraine –</i> <a href="https://lib.nuph.edu.ua/">https://lib.nuph.edu.ua/</a> 4. <i>State register of drugs (Expert center of drugs)</i> <a href="http://www.drlz.kiev.ua">http://www.drlz.kiev.ua</a> 5. <i>Directory of medicines</i> <a href="http://www.drlz.kiev.ua">http://www.drlz.kiev.ua</a> 6. <i>World Health Organization (WHO)-</i> <a href="http://www.who.int/ru/">http://www.who.int/ru/</a> 7. <i>Verkhovna Rada of Ukraine –</i> <a href="http://rada.gov.ua/">http://rada.gov.ua/</a> 8. <i>Cabinet of Ukraine (government portal)–</i> <a href="http://www.kmu.gov.ua/">http://www.kmu.gov.ua/</a> 9. <i>Ministry of Health of Ukraine –</i> <a href="http://www.moz.gov.ua/ua/portal/">http://www.moz.gov.ua/ua/portal/</a> 10. <i>Ministry of Economy of Ukraine –</i> <a href="http://www.me.gov.ua/">http://www.me.gov.ua/</a>

	<i>11. Govt. Statistics Service of Ukraine – <a href="http://www.ukrstat.gov.ua/">http://www.ukrstat.gov.ua/</a></i> <i>12. State Medical Service of Ukraine – <a href="http://www.diklz.gov.ua/">http://www.diklz.gov.ua/</a></i> <i>13. Health Economics and Systems Analysis Group (HESA)</i> <i><a href="https://www.lshtm.ac.uk/research/centres-projects-groups/hesa">https://www.lshtm.ac.uk/research/centres-projects-groups/hesa</a></i>
<b>Moodle distance learning system</b>	<a href="https://pharmel.kharkiv.edu/moodle/course/view.php?id=5169">https://pharmel.kharkiv.edu/moodle/course/view.php?id=5169</a>

**18. Material and technical support and software of the educational component:** computers for testing, multimedia device, screen. A set of services for organizing online and distance learning - Google Workspace for Education Standard, a program for organizing video conferences ZOOM, modular object-oriented dynamic learning environment MOODLE 3.9.8.