

## SYLLABUS OF THE EDUCATIONAL COMPONENT

WORK PHARMACEUTICAL PLACEMENT IN CLINICAL PHARMACY AND  
PHARMACEUTICAL CARE

for applicants for higher education of 5th year of full form of education (4.10 years of study)  
of educational program «Pharmacy»  
in specialty «226 Pharmacy, Industrial Pharmacy»  
in specialization —  
field of knowledge «22 Public Health»  
training for Master

## TEACHERS



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**1. The name of higher education establishment and department:** the National University of Pharmacy, Department of Clinical Pharmacy and Pharmaceutical Care

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**4. Information about teachers:**  
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**5. Consultations:** provided online according to the consultation schedule of the Department of Clinical Pharmacology and Clinical Pharmacy

**6. Brief summary of the educational component:** The educational component «Work Pharmaceutical Placement in Clinical Pharmacy and Pharmaceutical Care» is required for the second (master's) level in the specialty «226 Pharmacy, industrial pharmacy», educational program «Pharmacy». The final control is a semester differentiated credit.

**7. The purpose statement of studying the educational component:** «Work Pharmaceutical Placement in Clinical Pharmacy and Pharmaceutical Care» is to consolidate the theoretical knowledge of Clinical Pharmacy and Pharmaceutical Care and acquire practical skills for their use in the process of carrying out pharmacy care for pharmacy visitors.

**8. Competences in accordance with the educational program:****Soft- skills / General competences (CG):**

GC 6. Knowledge and understanding of the subject area and understanding of the professional activity.

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

PC 1. Ability to conduct sanitary and educational work among the population to prevent common diseases, prevent dangerous infectious, viral, and parasitic diseases, as well as to facilitate the timely detection and maintenance of adherence to treatment of these diseases in accordance with their medical and biological characteristics and microbiological characteristics.

PC 2. Ability to provide medical advice on prescription and over-the-counter medications and other products of the pharmacy range; pharmaceutical care during the selection and sale of the over-the-counter medications by assessing the risk/benefit, compatibility, indications, and contraindications based on data on the health of a particular patient, taking into account biopharmaceutical, pharmacokinetic, pharmacodynamic and physical and chemical characteristics of the medicine and other pharmaceutical product.

PC 3. Ability to provide first aid to patients and victims in extreme situations and emergencies.

PC 4. Ability to ensure the rational use of prescription and over-the-counter medications and other pharmaceutical products in accordance with physical, chemical, and pharmacological characteristics, biochemical, and pathophysiological features of a particular disease, and pharmacotherapeutic regimens of its treatment.

PC 5. Ability to monitor the effectiveness and safety of the population of medications according to the data on their clinical and pharmaceutical characteristics, as well as taking into account subjective signs and objective clinical, laboratory, and instrumental criteria for the examination of a patient.

PC 13. Ability to demonstrate and apply in practice communication skills, fundamental principles of pharmaceutical ethics and deontology, based on moral obligations and values, ethical standards of professional behavior and responsibility in accordance with the Code of Ethics for Pharmaceutical Workers of Ukraine and WHO guidelines.

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

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 5. To position your professional activities and personal qualities in the pharmaceutical labor market; to formulate the purposes of own activity taking into account public and industrial interests.

PLO 6. To argue information for decision-making, to be responsible for it in standard and non-standard professional situations; and to adhere to the principles of deontology and ethics in professional activities.

PLO 7. To perform professional activities using creative methods and approaches.

PLO 9. To carry out professional activities using information technology, «Information Databases», navigation systems, Internet resources, software, and other information and communication technologies.

PLO 10. To adhere to the norms of communication in professional interaction with colleagues, management, and consumers, work effectively in a team.

PLO 13. To carry out sanitary and educational work in professional activity in case of outbreaks of infectious, viral, and parasitic diseases.

PLO 14. To determine the advantages and disadvantages of medications of different pharmacological groups, taking into account their chemical, physical, and chemical, biopharmaceutical, pharmacokinetic, and pharmacodynamic features. To recommend to consumers over-the-counter medications and other products of the pharmaceutical range with the provision of counseling and pharmaceutical care.

PLO 17. To use the clinical, laboratory, and instrumental research data to monitor the efficacy and safety of medicines.

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.

PLO 25. To promote health, including disease prevention, rational appointment, and use of medicines. To perform professional duties in good faith, and comply with the law on the promotion and advertising of medicines. To have psychological communication skills to build trust and understanding with colleagues, doctors, patients, and consumers.

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.

PLO 25. To promote health, including disease prevention, rational use and use of medicines. To perform your professional duties in good faith, comply with the law on the promotion and advertising of medicines. To have psychological communication skills to build trust and understanding with colleagues, doctors, patients, consumers.

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

**11. Prerequisites of the educational component:** The educational component «Work Pharmaceutical Placement in Clinical Pharmacy and Pharmaceutical Care» is based on the study of biology and genetics fundamentals, physiology and human anatomy, microbiology with immunology fundamentals, pathological physiology, biochemistry, pharmacology, laboratory diagnostics, pharmacotherapy with pharmacokinetics, Clinical Pharmacy and Pharmaceutical Care as well as a unit of chemical courses and medicine technology and integrates with these components.

**12. The volume of the educational component:** 6 ECTS credits, 180 hours per educational component: 120 hours of practical classes and 60 hours of individual work.

### 13. Organization of training:

**Educational component format teaching:** full-time

**Content of the educational component:**

**Content module 1.** *Structure and principles of a pharmacy working; organizing the pharmacist work in a pharmacy. Work in a pharmacy at the pharmacist's workplace – «at the first table».*

**Topic 1.** Purpose, tasks, and content of practice. Basic principles of medical deontology and ethics.

**Topic 2.** Pharmaceutical care in the symptomatic treatment of diseases of the digestive system.

**Topic 3.** Pharmaceutical care in the symptomatic treatment of colds. Prevention of colds.

**Topic 4.** Pharmaceutical care in the symptomatic treatment of joint and muscle pain, and headache.

**Topic 5.** Pharmaceutical care in the symptomatic treatment of traumatic, infectious, and parasitic lesions of the skin and its appendages.

**Topic 6.** Pharmaceutical care in the symptomatic treatment of central nervous system disorders.

**Topic 7.** Pharmaceutical care during drug and non-drug treatment of local blood circulation disorders.

**Topic 8.** Pharmaceutical care when dispensing OTC drugs for the elimination and prevention of vitamin deficiency.

### 14. Forms and types of academic achievements supervision:

#### *Forms and types of academic achievements supervision*

*Control of knowledge:* checking the correctness and completeness of completing assignments according to the educational program, maintaining and completing the report and practice diary, and the systematic implementation of daily work on the basis of practice.

*Semester control form:* a semester differentiated credit.

*Conditions for admission to semester supervision:* Applicants who have completed all types of work provided for in the work program of the educational component, have scored a minimum of 36 points for current activities, and have submitted practice materials such as a work practice diary and a work practice report can be able to admit to semester differentiated credit.

### 15. Evaluation system of the educational component:

The results of the semester supervision in the form of a semester differentiated credit are evaluated according to the ECTS scale, a 100-point scale, and a four-point scale («excellent», «good», «satisfactory», and «unsatisfactory»)

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

Types of evaluation	Maximum number of points (% of the number of points per module - for content modules)
Module 1	
<b>Content module 1.</b> <i>Structure and principles of a pharmacy working; organizing the pharmacist work in a pharmacy. Work in a pharmacy at the pharmacist's workplace – «at the first table».</i>	
– <i>Control of knowledge</i> (evaluation of topics 1-8): correct and complete solution of tasks according to the educational program (30 situational tasks, information about 4 medicines, and writing a prescription)	60 (60 %)
– <i>supervision of content module</i> (control of practical skills, solving situational problems)	40 (40 %)
Semester Supervision of Module 1	100

**The individual work of applicants for higher education is evaluated during the progress supervision 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 stated in the POL «On measures to prevent cases of academic plagiarism at the National University of Pharmacy». Cheating during the evaluation of an applicant for higher education during supervision activities in practical (seminar, laboratory) classes, supervision of content modules, and the semester exam are prohibited (including the use of mobile devices). Abstracts must have correct text references to the used literature. The detection of signs of academic dishonesty in the student's written work is a reason for the teacher not to credit it.

*Class attendance policy.* An applicant for higher education is obliged to attend classes (POL «On the organization of the educational process of the National University of Pharmacy») according to the schedule (<https://nuph.edu.ua/rozklad-zanyat/>), to observe ethical norms of behavior.

*Policy regarding deadlines, working out, rating increase, and 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. Information and educational and methodical support of the discipline:**

<b>The main reading suggestions</b>	<ol style="list-style-type: none"> <li>1) Report on the Work Pharmaceutical Placement in Clinical Pharmacy and Pharmaceutical Care [Electronic source] : workbook / S. V. Misiurova [et al.], 2023. – 48 c.</li> <li>2) The practice in clinical pharmacy : method. recommend. [Electronic source] / K. O. Zupanets, S. V. Misiurova, K. L. Ratushna, et al ; ed. I. A. Zupanets, 2020. – 36 p.</li> <li>3) Pharmaceutical care: basic concepts and definitions [Text] : methodological recommendation for in-class work of students / S. B. Popov [et al.] ; ed. by prof. I. A. Zupanets, 2020. – 24 p.</li> <li>4) Pharmaceutical care when dispensing drugs for the symptomatic treatment of the CNS episodic disorders (anxiety, insomnia) [Text] : methodological recommendation for in-class work of students / T. S. Sakharova [et al.] ; ed. by prof. I. A. Zupanets, 2020. – 36 p.</li> <li>5) Introduction in Clinical Pharmacy: Adverse Drug Reactions [Text] : methodological recommendations for in-class work of students / I. A. Otrishko [et al.] ; ed. by I. A. Zupanets ; translated by O. S. Popov, 2018. – 31 p.</li> </ol>
<b>Supplementary reading suggestions for in-depth study of the educational</b>	<ol style="list-style-type: none"> <li>1) <i>Applied Therapeutics : The Clinical Use Of Drugs</i> / ed. by Caroline S. Zeind, Michael G. Carvalho. – 11<sup>th</sup> ed. – New York : Wolters Kluwer ; Lippincott Williams &amp; Wilkins, 2018. – 2379 p.</li> <li>2) <i>British Medical Association. New Guide to Medicines and Drugs.</i> – 9<sup>th</sup> ed. – London : Dorling Kindersley, 2015. – 512 p.</li> </ol>

<b>component</b>	<p>3) <i>Clinical Pharmacy and Therapeutics</i>. – 6<sup>th</sup> ed. / Eds Cate Whittlesea and Karen Hodson. – London : Churchill Livingstone, 2019. – 1094 p.</p> <p>4) <i>Harrison's Principles of Internal Medicine</i> / L. J. Jameson [et al.]. – 20th ed. – McGraw Hill Professional, 2018. – 4048 p.</p> <p>5) <i>Oxford Handbook of Clinical Pharmacy Third Edition</i> / eds Ph. Wiffen. M. Mitchell, M. Snelling, N. Stoner. – Oxford : Oxford University Press, 2017. – 730p.</p> <p>6) <i>Symptoms in the Pharmacy : A Guide to the Management of Common Illness</i>. – 8<sup>th</sup> ed. / Ed. A. Blenkinsopp, M. Duerden and J. Blenkinsopp. – Oxford : John Wiley &amp; Sons Ltd, 2018. – 405 p.</p>
<b>Current electronic information resources (magazines, websites) for in-depth study of the educational component</b>	<p>1) Drugs.com. Prescription Drug Information, Interactions and Side Effects [Electronic resource]. – Access mode: <a href="https://www.drugs.com/">https://www.drugs.com/</a> (Date of access: 01.09.2023). – The name from the screen.</p> <p>2) <i>FDA Approved drug products</i> [Electronic resource] // Federal Drug Administration. – Access mode: <a href="https://www.accessdata.fda.gov/scripts/cder/daf/">https://www.accessdata.fda.gov/scripts/cder/daf/</a> (Date of access: 01.09.2023). – The name from the screen.</p> <p>3) <i>Medicines</i> [Electronic resource] // European Medicines Agency. – Access mode: <a href="https://www.ema.europa.eu/en/medicines">https://www.ema.europa.eu/en/medicines</a> (Date of access: 01.09.2023). – The name from the screen.</p> <p>4) <i>Orange Book: Approved Drug Products with Therapeutic Equivalence Evaluations</i> [Electronic resource]. – Access mode: <a href="https://www.accessdata.fda.gov/scripts/cder/ob/index.cfm">https://www.accessdata.fda.gov/scripts/cder/ob/index.cfm</a> (Date of access: 01.09.2023). – The name from the screen.</p> <p>5) <i>Rxlist</i>. The Internet Drug Index for prescription drug information, interactions and side effects [Electronic resource]. – Access mode: <a href="https://www.rxlist.com/">https://www.rxlist.com/</a> (Date of access: 01.09.2023). – The name from the screen.</p>
<b>Moodle distance learning system</b>	<p><a href="https://pharmel.kharkiv.edu/moodle/course/view.php?id=24">https://pharmel.kharkiv.edu/moodle/course/view.php?id=24</a></p> <p><a href="https://pharmel.kharkiv.edu/moodle/course/view.php?id=2731">https://pharmel.kharkiv.edu/moodle/course/view.php?id=2731</a></p>

**18. Material and technical support and software of the educational component:** a computer, the Internet, and equipment for video/audio conferences or a mobile gadget with the possibility of connecting to the Internet, OS Windows 7/10/11, Microsoft Office, Moodle, and ZOOM.