



NATIONAL PIROGOV MEMORIAL MEDICAL UNIVERSITY, VINNYTSIA

COURSE SYLLABUS

For the training of master's students

CLINICAL PHARMACEUTICS AND PHARMACEUTICAL CARE

Specialty	226 Pharmacy, Industrial Pharmacy
Specialization	226.01 Pharmacy
Educational Programme	<i>EPP «Pharmacy», 2023</i>
Higher Education Level	the second (master`s) level
Academic year	2026-2027
Status of the Discipline	Mandatory
Language of Instruction	Ukrainian / English
Total Workload	8,5 of ECTS credits
Year of Study / Semester	IV-V/7-9 (full-time) V-VI/9-11 (part-time)
Developer	Assoc. Prof., PhD Tetiana VOITENKO
Instructor	Assoc. Prof., PhD Tetiana VOITENKO
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1. DESCRIPTION OF THE ACADEMIC DISCIPLINE

ABSTRACT

Brief course overview and relevance.

Clinical pharmaceuticals and pharmaceutical care as a subject aims to train future specialists to possess a sufficient level of theoretical knowledge and practical skills to work alongside physicians in ensuring the most rational drug therapy for a specific patient, as well as providing pharmaceutical care to pharmacy visitors. The pharmacist's participation in drug therapy contributes to the timely delivery of optimal quality medicines to the patient, the establishment of the most rational routes and regimens of administration, the prevention of incompatible drug prescriptions, the minimization of their side effects, and the reduction of polypharmacy. Clinical Pharmaceuticals and pharmaceutical care is the theoretical foundation for conducting advisory work among physicians and the general public on issues of rational drug therapy, as well as for providing pharmaceutical care to patients.

Prerequisites. For the successful mastery of the discipline, a student requires knowledge acquired during the study of the following subjects: pharmacology, pharmacotherapy with pharmacokinetics, biology with the basics of genetics, human anatomy and physiology, microbiology with the basics of immunology, ethics and deontology in pharmacy, pathological physiology, hygiene in pharmacy and ecology, first pre-medical aid with introductory medical practice, which precede the study of this discipline or are studied concurrently. It lays the groundwork for students to study related disciplines such as pharmaceutical chemistry and pharmaceutical biotechnology, pharmacognosy, and pharmacoeconomics, the programs of which integrally complement this discipline, which serves as a foundational course in the cycle of clinical disciplines for pharmacists.;

PURPOSE AND OBJECTIVES

The purpose of the course and its significance for professional activities

The purpose of teaching the academic discipline is to consolidate practical skills and train pharmacists to possess a sufficient level of theoretical knowledge and practical skills to work alongside physicians in ensuring the most rational drug therapy for a specific patient, as well as providing pharmaceutical care to patients in a pharmacy setting.

The main objectives of studying the discipline "Clinical Pharmaceuticals and pharmaceutical care" are:

- Syndromology and symptomology: mastering the general syndromology and symptomology of the most common diseases in the clinic of internal medicine.
- Over-the-counter (OTC) symptoms: mastering the signs of key symptoms that can be treated using OTC drugs within the concept of self-treatment (runny nose, headache, diarrhea, etc.).
- Doctor intervention signs: mastering the signs of major syndromes that require mandatory medical intervention.
- Diagnostics and interpretation: studying the general principles of diagnostics and the methodology of differential diagnosis of internal diseases, and mastering the general principles of interpreting patient examination results.
- Drug selection principles: mastering the general methodology and principles of drug selection for effective and safe drug therapy, taking into account the patient's functional status and the pharmacological features of the drugs.
- Side effects and risks: studying the risk factors for development and clinical manifestations of drug side effects and their combinations, and mastering the main approaches to reducing drug side effects when prescribing them to specific patients.
- Safety and efficacy evaluation: mastering the principles of evaluating the efficacy and safety profile of specific pharmacological groups and medicines.
- Symptomatic therapy: mastering the basic principles of symptomatic drug therapy for diseases and pathological conditions where responsible self-treatment is applicable.
- Pharmaceutical care implementation: mastering the principles and acquiring the skills to provide pharmaceutical care to patients during treatment with OTC and prescription drugs.

- Information and advisory work: mastering the skills of obtaining, analyzing, and presenting information on the pharmacological properties of drugs, i.e., conducting advisory work on medicines among medical professionals and various segments of the population.
- Medical deontology and ethics: mastering the principles of medical deontology, ethical standards of a pharmacist's behavior in a clinic, and the relationships between the pharmacist and the physician, as well as the pharmacist and the patient.
- Medical documentation: familiarization with the main types of medical documentation and methods of clinical examination of patients.

Competencies and learning outcomes fostered by the course/

Integral competence (IC): The ability to solve problems and to analyse and resolve practical issues of a research and/or innovative nature in the field of pharmacy.

General competencies (GC):

- GC 02. Ability to think abstractly, analyze, and synthesize.
- GC 03. Knowledge and understanding of the subject area and understanding of professional activity.
- GC 04. Ability to adapt and act in a new situation. Ability to take initiative.
- GC 06. Skills in using information and communication technologies.
- GC 07. Ability to choose a communication strategy, ability to work in a team and with experts from other fields of knowledge/types of economic activity.
- GC 08. Ability to evaluate and ensure the quality of performed work.
- GC 09. Ability to conduct research at an appropriate level.

Special (professional/subject-specific) competencies (PC):

- PC 01. Ability to collect, interpret, and apply data required for professional activity, conducting research, and implementing innovative projects in the field of pharmacy.
- PC 02. Ability to integrate knowledge and solve complex problems of pharmacy in broad or multidisciplinary contexts.
- PC 03. Ability to solve pharmacy problems in new or unfamiliar environments with incomplete or limited information, taking into account aspects of social and ethical responsibility.
- PC 04. Ability to use knowledge of regulatory, legal, and legislative acts of Ukraine, as well as recommendations of good pharmaceutical practices, in professional activity.
- PC 05. Ability to demonstrate and apply in practical activity communication skills and fundamental principles of pharmaceutical ethics and deontology based on moral obligations and values, ethical standards of professional conduct, and responsibility in accordance with the Ethical Code of Pharmaceutical Workers of Ukraine and WHO guidelines.
- PC 06. Ability to clearly and unambiguously convey one's own knowledge, conclusions, and reasoning in the field of pharmacy to specialists and non-specialists, including learners.
- PC 09. Ability to provide counseling on prescription and over-the-counter (OTC) medicines and other pharmacy products, as well as aspects of healthy nutrition; to provide pharmaceutical care during the selection and dispensing of medicines of natural and synthetic origin by evaluating the risk/benefit ratio and compatibility, taking into account their biopharmaceutical, pharmacokinetic, pharmacodynamic, physicochemical, and chemical characteristics, and indications/contraindications for use, guided by data on the health status of a specific patient.
- PC 10. Ability to monitor the efficacy and safety of drug use by the population based on data regarding their clinical and pharmaceutical characteristics.

Postrequisites discipline "Clinical Pharmaceutics and pharmaceutical care" is the basis for the study of medical and pharmaceutical commodity science, belonging to practices in pharmacy, pharmaceutical chemistry, management and marketing in pharmacy, biopharmacy, standardization of drugs, technology of medicinal cosmetics, provides for the integration of teaching with the above-mentioned disciplines on the formation of skills to apply knowledge in the process of further education and in professional activity.

2. LEARNING OUTCOMES

Integrative final programme learning outcomes, the formation of which is facilitated by the discipline:

- PLO 01. Apply specialized knowledge and skills/abilities from general and professional disciplines in professional activity.
- PLO 02. Critically reflect on scientific and applied problems in the field of pharmacy.
- PLO 03. Evaluate and ensure the quality and efficacy of activities in the field of pharmacy.
- PLO 05. Plan and implement professional activity based on the regulatory and legal acts of Ukraine and the recommendations of good pharmaceutical practices.
- PLO 07. Demonstrate the ability to independently search, analyze, and synthesize information from various sources, including professional literature, patents, and databases; evaluate it, particularly using statistical analysis, and apply these results to solve typical and complex specialized tasks of professional activity, including the development and production of medicines.
- PLO 08. Develop and make effective decisions to solve complex/comprehensive problems of pharmacy individually and based on the results of joint discussion; formulate goals for personal activity and team activity, taking into account public and production interests, general strategy, and available constraints, and determine optimal ways to achieve these goals.
- PLO 09. Develop and implement innovative projects in the field of pharmacy, as well as related interdisciplinary projects, taking into account technical, social, economic, ethical, legal, and environmental aspects.
- PLO 12. Contribute to health preservation, particularly disease prevention, and the rational prescription and use of medicines. Conscientiously fulfill professional duties and adhere to legal regulations regarding the promotion and advertising of medicines. Possess psychological communication skills to achieve trust and mutual understanding with colleagues, physicians, patients, and consumers.
- PLO 14. Determine the advantages and disadvantages of medicines from various pharmacological groups, taking into account their chemical, physicochemical, biopharmaceutical, pharmacokinetic, and pharmacodynamic characteristics. Recommend over-the-counter (OTC) medicines and other pharmacy products to consumers while providing counseling and pharmaceutical care.
- PLO 15. Formulate, argument, and clearly and specifically convey information based on personal knowledge, professional experience, key trends in the development of global pharmacy, and related fields to specialists and non-specialists, including higher education students.
- PLO 16. Record instances of adverse drug reactions resulting from the use of medicines of natural and synthetic origin; evaluate factors that may affect the processes of drug absorption, distribution, deposition, metabolism, and excretion, which are determined by the status and characteristics of the human body and the pharmaceutical properties of the medicines.

3. FORMS OF ORGANISATION OF THE EDUCATIONAL PROCESS AND THEIR SCOPE

Type of Learning Activity	Hours	
	Full-time	Part-time
Lectures:	18	10
Practical Classes:	144	32
Independent Study:	93	213
Total	255	255

4. THEMATIC PLAN

No	Module and Topic Titles
Module 1. General issues of clinical pharmaceuticals. Clinical pharmaceuticals and pharmaceutical care in cardiology, pulmonology, and rheumatology	
1.	Clinical pharmaceuticals as a science. basic principles of clinical pharmaceuticals and clinical pharmacology. Self-medication and pharmaceutical care. ethics and deontology in pharmacy. psychological aspects of pharmacist–patient relationships. patient compliance. Good clinical practice (GCP). international rules and standards for clinical trials.
2.	Types of drug therapy. Clinical aspects of pharmacokinetics and pharmacodynamics. factors affecting pharmacodynamic effects. Monitoring the efficacy of medicinal products. original and generic medicinal products.
3.	Adverse drug reactions. Drug interactions. Combination medicines. Prevention and correction of adverse drug effects. Pharmacist's protocol for handling information on adverse drug reactions and/or lack of efficacy of medicinal products.
4.	Clinical pharmaceuticals in cardiology. Classification and general characteristics of cardiovascular diseases. Classification and principles of prescribing antianginal drugs. Principles of emergency care for complications of ischemic heart disease.
5.	Clinical pharmaceuticals of antihypertensive drugs. Classification of first- and second-line antihypertensive drugs. Selection and prescription of first-line antihypertensive therapy. Possible adverse effects and complications of therapy and ways to manage them. pharmacist's protocol for dispensing reimbursable antihypertensive medicines.
6.	Combination therapy for arterial hypertension. Rational combinations of antihypertensive drugs. Methods for assessing treatment efficacy. Resistant arterial hypertension.
7.	Second-line antihypertensive drugs: benefits and risks of use. Hypertensive crisis. Medicines for the management of hypertensive crisis. Pharmacist's actions in the event of a hypertensive crisis.
8.	Clinical pharmaceuticals of antiarrhythmic drugs.
9.	Clinical pharmaceuticals of cardiac glycosides and non-glycoside cardiotonic drugs. Metabolic and adjunctive medicines in cardiology.
10.	Clinical pharmaceuticals of diuretics. Specific features of their use in various pathological conditions.
11.	Clinical pharmaceuticals of lipid-lowering drugs.
12.	Clinical pharmaceuticals of antiplatelet drugs, anticoagulants, and fibrinolytics.
13.	Clinical pharmaceuticals of local and systemic hemostatic agents.
14.	Clinical pharmaceuticals of medicines used in neurology and psychiatry (antipsychotics, tranquilizers, sedatives, and hypnotics).
15.	Clinical pharmaceuticals of antiepileptic and antiparkinsonian drugs.
16.	Central nervous system stimulants. Clinical pharmaceuticals of antidepressants. Medicines that improve cerebral blood flow.
17.	Pharmaceutical care in diseases of the central nervous system (asthenic and depressive states, neuroses, sleep and memory disorders). Headache and migraine. Pharmacist's protocols for the symptomatic treatment of stress, insomnia, and headache.
18.	Clinical pharmaceuticals in pulmonology (bronchial asthma and chronic obstructive pulmonary disease).
19.	Clinical pharmaceuticals of cough medicines. Pharmacist's protocol for the symptomatic treatment of cough.
20.	Clinical pharmaceuticals in rheumatology. Clinical pharmaceuticals of nonsteroidal anti-inflammatory drugs. Pharmaceutical care in the use of glucocorticosteroids.

21.	Clinical pharmaceuticals of immunosuppressants, cytotoxic agents, and other antiproliferative drugs.
22.	Clinical pharmaceuticals of gouty arthritis. Uricosuric and urate-lowering drugs.
23.	Pharmacist's protocols for dispensing nonprescription medicines: symptomatic treatment of muscle and back pain, superficial closed injuries, and toothache.
24.	Approaches to the rational selection of medicines for the treatment of musculoskeletal disorders. Clinical pharmaceuticals of chondroprotective agents. Pharmacist's protocols for the prevention and symptomatic treatment of osteoarthritis and the prevention of osteoporosis.
25.	Final class on the topics of module.
Module 2. Clinical pharmaceuticals and pharmaceutical care in the dispensing of antimicrobial drugs. Clinical pharmaceuticals in gastroenterology and hepatology»	
1	Clinical pharmaceuticals of antimicrobial drugs. Selection strategies.
2	Classification of beta-lactam antibiotics. Resistance to beta-lactam antibiotics and types of beta-lactamases. Clinical pharmaceuticals of penicillins.
3	Cephalosporins, carbapenems, and monobactams. Mechanisms of action, selection principles, and adverse effects.
4	Clinical pharmaceuticals of macrolide antibiotics. Classification of aminoglycosides and tetracyclines. Mechanisms of action, selection principles, adverse effects, and age-related considerations.
5	Clinical pharmaceuticals of lincosamides, vancomycin, and chloramphenicol. Prescribing strategies and specific features of use.
6	Classification of fluoroquinolones, sulfonamides, nitrofurantoin derivatives, and 8-hydroxyquinoline derivatives. Mechanisms of action, selection principles, adverse effects, and age-related considerations.
7	Clinical pharmaceuticals of antituberculosis drugs. Classification, mechanisms of action, selection principles, adverse effects, and specific features of use. Pharmacist's protocol: "Disease prevention and promoting treatment adherence in tuberculosis."
8	Clinical pharmaceuticals of antifungal drugs. Classification, mechanisms of action, selection principles, adverse effects, and specific features of use.
9	Clinical pharmaceuticals of antiviral drugs used in pulmonology. Classification, mechanisms of action, selection principles, adverse effects, and specific features of use. Pharmacist's protocol for dispensing nonprescription medicines: "Prevention of influenza and acute respiratory viral infections."
10	Pharmacist's protocols: "Symptomatic treatment of fever in children under 15 years of age," "Symptomatic treatment of fever in children aged 15 years and older and adults," and "Symptomatic treatment of rhinitis."
11	Clinical pharmaceuticals of antiretroviral drugs. Pharmacist's protocol: "disease prevention and promoting treatment adherence in hiv/aids."
12	Other antiviral drugs. Pharmacist's protocol for dispensing nonprescription medicines: "Symptomatic treatment of herpes labialis."
13	Clinical pharmaceuticals of antiprotozoal drugs.
14	Clinical pharmaceuticals of antiparasitic drugs. Anthelmintic drugs. Pharmacist's protocols: "symptomatic treatment of scabies" and "symptomatic treatment of pediculosis."
15	Clinical pharmaceuticals of antiseptics. Pharmacist's protocols: "Symptomatic treatment of sore throat" and "Symptomatic treatment of superficial wounds."
16	Pharmacist's protocol for dispensing nonprescription medicines: "Symptomatic treatment of burns."
17	Use of drugs affecting the gastrointestinal tract. Approaches to pharmacological treatment. Clinical pharmacology of drugs used in hyperacidic conditions. Pharmacist's protocol: "Symptomatic treatment of heartburn."
18	Clinical pharmaceuticals of Helicobacter pylori eradication (macrolide, penicillin, tetracycline, and nitroimidazole antibiotics).
19	Clinical pharmaceuticals in pancreatic dysfunction. Pharmacist's protocol: "Symptomatic treatment of pancreatic exocrine insufficiency."
20	Clinical pharmacology of drugs that increase gastrointestinal tone and stimulate motility. Pharmacist's protocol: "Symptomatic treatment of constipation." Pharmaceutical care in the dispensing of antiemetic drugs.
21	Pharmacist's protocol for dispensing nonprescription medicines: "Symptomatic treatment of diarrhea." Pharmaceutical care for patients with symptoms of dysbiosis. Enterosorbents.
22	Clinical pharmaceuticals of drugs used in diseases of the hepatobiliary system. Pharmacist's protocol: "Symptomatic treatment of gallbladder and biliary tract dysfunction." Clinical pharmacology of drugs used to relieve pain (myotropic antispasmodics and m-cholinergic antagonists).
23	Final class on the topics of module. Credit.
Module 3 "Clinical Pharmaceuticals and pharmaceutical care in nephrology, hematology, endocrinology, dermatology" (2027-2028 academic year)	
1.	Clinical Pharmaceuticals in nephrology.
2.	Clinical Pharmaceuticals and pharmaceutical care of medicines for pain relief (myotropic antispasmodics, M-cholinolitics).

3.	Clinical Pharmaceutics of anti-anemic medicines (iron products, B12, B6).
4.	Clinical Pharmaceutics of medicines affecting hematopoiesis (Erythropoietins, G-CSF).
5.	Clinical Pharmaceutics in endocrinology (types of therapy and specifics of pharmaceutical care). Symptoms and syndromes in diabetes mellitus (DM). Specifics of glucose level monitoring.
6.	Clinical Pharmaceutics and pharmaceutical care of a patient with type 1 DM. Insulin therapy regimens.
7.	Clinical Pharmaceutics of type 2 DM. Treatment protocol for uncomplicated type 2 DM.
8.	Specifics of clinical pharmaceutics and pharmaceutical care in type 2 DM for patients with high cardiovascular risk or chronic kidney disease (CKD).
9.	Complications of diabetes mellitus: monitoring, treatment, and pharmaceutical care.
10.	Pharmaceutical care during the dispensing of medicines for the treatment of vascular pathologies (varicose vein disease, hemorrhoids, obliterating endarteritis).
11.	Clinical Pharmaceutics of thyroid gland diseases. Hypothyroidism. Pharmacist's protocol for dispensing over-the-counter (OTC) medicines "Prevention of diseases caused by iodine deficiency".
12.	Clinical Pharmaceutics in the treatment of hyperthyroidism.
13.	Clinical Pharmaceutics of endocrine disorders of the reproductive system. Estrogens and antiestrogens. Androgens and antiandrogens.
14.	Clinical Pharmaceutics and pharmaceutical care during the dispensing of contraceptives. Hormonal contraception: approaches, types of therapy, risks.
15.	Symptoms and syndromes in allergic reactions and allergic diseases.
16.	Clinical Pharmaceutics of medicines used for the treatment of allergic diseases. Pharmacist's protocol for dispensing OTC medicines "Symptomatic treatment of allergy".
17.	Clinical Pharmaceutics in ophthalmology.
18.	Clinical Pharmaceutics in otorhinolaryngology.
19.	Clinical Pharmaceutics in dermatology.
20.	Clinical Pharmaceutics of acne vulgaris. Pharmacist's protocol for dispensing OTC medicines "Prevention and symptomatic treatment of acne".
21.	Clinical pharmacology of infusion medicines. Pharmaceutical care in acute poisoning and overdose. Antidote therapy.
22.	Pharmacist's protocol for dispensing OTC medicines: "Assembling a first-aid kit for travel"; "Assembling a first-aid kit for office premises".
23.	Pharmacist's protocol for dispensing OTC medicines: "Assembling a home first-aid kit", "Assembling a first-aid kit for infants".
24.	Final session of Module 3.

5. FORMS AND METHODS OF ASSESSMENT OF LEARNING OUTCOMES

Ongoing Assessment during Practical Classes	Methods: oral and/or written assessment and testing, computer-based assessment and testing, completion of situational tasks.
Final Assessment of the Academic Discipline – Pass/Fail Assessment	It is conducted during the final practical class and is determined on the basis of the student's ongoing academic performance in accordance with the Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsia: General Information / Key Documents https://www.vnmdu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf
Final Assessment – Examination	It is conducted during the examination session according to the examination schedule and is assessed in accordance with the Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsia: General Information / Key Documents or Regulations on the Organisation of the Educational Process https://www.vnmdu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf
Assessment Tools for Learning Achievement	Theoretical questions, tests, clinically oriented situational tasks, practical assignments, demonstration of practical skills.

6. ASSESSMENT CRITERIA

Assessment of students' knowledge is carried out in accordance with the current Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsia. ([https://www.vnmdu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmdu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf))

Type of Assessment	Assessment Criteria / Scale
Ongoing Assessment	According to the traditional grading scale: 5 – “Excellent”, 4 – “Good”, 3 – “Satisfactory”, 2 – “Unsatisfactory”
Interim Assessments	According to the traditional grading scale
Assessment of Practical Skills	According to the traditional grading scale
Pass/Fail Assessment	According to the 200-point scale (the arithmetic mean of the grades obtained during the semester is converted into points). Passed: 122–200 points. Failed: fewer than 122 points.
Final Grade of the Academic Discipline	Examination grade: 71–80 points – “Excellent”; 61–70 points – “Good”; 50–60 points – “Satisfactory”; fewer than 50 points – “Unsatisfactory” / Failed.
Overall Assessment for the Academic Discipline	Ongoing academic performance – 72–120 points (conversion of the average traditional grade for practical classes to the 120-point scale); 60% of the final grade for the academic discipline. Final Assessment – 50–80 points: 40% of the final grade for the academic discipline. Individual Assignments– 1–12 points. Total: 122–200 points.

GRADING SCALE: NATIONAL AND ECTS

Total Score for All Learning Activities	ECTS Grade	National Grade: Examination, Course Project (Paper), Practical Training	National Grade: Pass
180–200	A	Excellent	Passed
170–179.99	B	Good	Passed
160–169.99	C	Good	Passed
141–159.99	D	Satisfactory	Passed
122–140.99	E	Satisfactory	Passed
60–121.99	FX	Unsatisfactory, with the possibility of retaking	Failed, with the possibility of retaking
0–59.99	F	Unsatisfactory, with mandatory repetition of the discipline	Failed, with mandatory repetition of the discipline

Criteria for Assessing Students’ Knowledge

Assessment of Oral/Written Responses during Ongoing Assessment

The grade “Excellent” is awarded when a student demonstrates comprehensive knowledge of the topic, illustrating responses with a variety of relevant examples; provides complete, accurate, and clear answers without prompting or leading questions; presents the material without errors or inaccuracies; confidently solves problems and completes practical tasks of varying levels of complexity; and independently generates innovative ideas.

The grade “Good” is awarded when a student demonstrates good knowledge and understanding of the topic and provides correct, coherent, and well-structured answers, although they may not be fully comprehensive. The student answers additional questions correctly and without significant errors; successfully solves problems and completes practical tasks, experiencing difficulties only with the most complex assignments.

The grade “Satisfactory” is awarded when a student demonstrates knowledge of the overall content of the topic and a satisfactory level of understanding. With the help of guiding questions, the student is able to solve modified (simplified) problems; solves problems and completes practical tasks, although experiencing difficulties even with relatively simple assignments; is unable to formulate a coherent and systematic response independently but provides correct answers to direct questions.

The grade “Unsatisfactory” is awarded when a student’s knowledge and skills do not meet the requirements for the grade “Satisfactory”.

The assessment criteria for all other types of students’ academic work are based on the requirements of the Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsya,

([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf)) and are specified in the programme of the academic discipline.

Assessment of Students’ Independent Study

Students’ independent study undertaken as part of a topic alongside contact hours is assessed as part of the ongoing assessment of that topic during the relevant practical class.

The maximum number of points a student may receive upon completion of the discipline is 200 points. The minimum passing score is 122 points.

7. METHODOLOGICAL SUPPORT

Teaching and learning materials (lecture notes or extended lecture outlines), thematic plans for lectures, practical classes and independent study, assignments for ongoing assessment, methodological guidelines, and teaching manuals.

8. ACADEMIC DISCIPLINE POLICIES

The completion of learning activities and all academic work within the discipline must comply with the requirements of the Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsya; ([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf)), the Regulations on the Organisation of the Educational Process for Higher Education Students Pursuing the Degree of Doctor of Philosophy at National Pirogov Memorial Medical University, Vinnytsya (https://www.vnmu.edu.ua/downloads/other/pologPhD_org.pdf); the Law of Ukraine “On Education” (Article 42); the Law of Ukraine “On Academic Integrity”; and the Code of Academic Integrity of National Pirogov Memorial Medical University, Vinnytsya (https://www.vnmu.edu.ua/downloads/other/kodex_akad_dobr_edit%202026.pdf)

Students are entitled to high-quality educational services and a safe learning environment under martial law, emergency situations and states of emergency; access to up-to-date scientific and educational information; and qualified academic guidance and support in studying the discipline and acquiring practical skills.

The Department’s policy on the provision of educational services is student-centred and is based on the regulatory documents of the Ministry of Education and Science of Ukraine and the Ministry of Health of Ukraine, the University Statute, the procedures governing the provision of educational services, including in emergency situations, as stipulated by the principal regulations and administrative directives governing the organisation of the educational process at National Pirogov Memorial Medical University, Vinnytsya, as well as on the principles of academic integrity.

Academic Integrity. When studying the discipline and completing all types of learning assignments and/or research activities, students must comply with the Law of Ukraine “On Education” (Article 42), the Law of Ukraine “On Academic Integrity”, and the Code of Academic Integrity of National Pirogov Memorial Medical University, Vinnytsya ([University website → General Information → Key Documents → Code of Academic Integrity](#)). In the event of a violation of academic integrity principles, appropriate measures shall be taken in accordance with the applicable regulatory documents.

Compliance with VNMU Internal Regulations and Safety Requirements during Practical Classes. At the first practical class, the instructor provides a safety briefing on appropriate conduct on the Department premises, informs students of the location of the shelter and the evacuation route to the shelter in accordance with the approved evacuation plan, explains the rules of conduct while proceeding to and remaining in the shelter, and provides instructions on all actions stipulated by the

Emergency Response Plan (pursuant to Order No. 505 dated 30 August 2023). In the event of an air raid alert or any other emergency warning signal, the instructor suspends the class. The instructor and students proceed together to the shelter and remain there until the warning signal is cancelled. Once the alert has been lifted, the instructor and students either resume the class in the Department's classrooms or students independently complete the remaining learning material, which is subsequently assessed at the next class.

Requirements for Preparation for Practical Classes

Students are required to participate actively in the educational process: attend classes and come adequately prepared; complete the test tasks related to the current topic in their workbooks and fill in the required diagrams and tables; actively participate in discussions of the class topic; complete all assignments specified in the programme; search for additional information relevant to the topic and present it to their peers.

Students are expected to arrive at classes on time. Late arrival is not permitted in accordance with the Internal Regulations for Students of VNMU. A student who arrives more than 10 minutes late is not admitted to the class and is required to make up the missed class in accordance with the established procedure.

For specialties within Field of Study I "Healthcare and Social Security", students are required to wear a medical coat during practical classes. Students who fail to comply with this requirement are not admitted to the class.

Students are expected to be polite, courteous, and respectful in their interactions with teaching staff, other University employees, fellow students, and other persons studying at VNMU. Students must maintain a quiet and orderly environment and demonstrate appropriate conduct on the Department premises.

In its activities, the Department adheres to the principles of mutual respect and tolerance. Students are expected to uphold the same principles.

Students must comply with safety regulations while on the Department premises.

When working in teaching and research laboratories, students must comply with the applicable safety regulations (published on the website of the Department of Pharmacy). When completing practical assignments, students must keep their workstations clean and orderly and leave them tidy upon completion of the practical work.

While at clinical training sites, students are required to comply with the established therapeutic and protective regime and sanitary and hygiene requirements. Where quarantine restrictions are introduced at a healthcare institution, strict compliance with all applicable requirements is mandatory.

When entering inpatient departments, students must wear a medical coat, cap, and change of footwear. Students must also have a medical mask, gloves, and hand sanitiser with them. Bringing outdoor clothing, outdoor footwear, or bulky personal belongings into inpatient departments is not permitted. Students are strictly prohibited from handling any medical devices, equipment, or instruments without the instructor's permission.

When communicating with patients and their relatives, as well as outside the healthcare institution, students are required to observe ethical and deontological principles and comply with applicable legislation concerning the confidentiality and protection of information. The disclosure or dissemination of patients' medical or personal information by any means, including through social media, verbal communication, or otherwise, is strictly prohibited.

In interactions with healthcare personnel and during discussions as part of the educational process, students are expected to adhere to the principles of tolerance, courtesy, and mutual respect. Inappropriate, disrespectful, or provocative behaviour is not permitted.

Use of Mobile Phones and Other Electronic Devices. The use of mobile phones and other electronic devices during classes is not permitted, except for emergency calls or when such devices are used to present supplementary materials relevant to the topic of the class.

Absence from Classes. Missed classes must be made up in accordance with the procedure established by the current Regulations on the Organization of the Educational Process at National

Pirogov Memorial Medical University, Vinnytsya ([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf)), at the times specified in the make-up schedule published on the website of the Department of Pharmacy ([VNMU website](#)), either with the instructor on duty or with the student's regular instructor. Making up a missed class involves completing the assignments related to the topic of the missed class in accordance with the specific requirements of the discipline.

Mastery of lecture topics is assessed during practical classes, seminars (including the assessment of practical skills), and final assessment, in accordance with the Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsya ([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf))

Admission to Final Assessment. The procedure for admission to final assessment in the discipline is set out in the current Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsya ([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf)).

Students are admitted to final assessment provided that they have no outstanding academic requirements: the average grade for ongoing assessment must be at least 3.0 (72 points on the 120-point scale); all final sessions for the content modules must have been completed with a passing grade ("3" or higher); and all missed practical classes must have been made up with a passing grade ("3" or higher). Otherwise, the student must improve their average grade by making up unsatisfactory grades and must make up all missed classes.

Additional Points for Individual Assignments. Students may receive additional points in the discipline for the successful completion of individual assignments, the content of which is published on the Department's website as part of the teaching and learning materials for the discipline. The number of points awarded is determined based on the results of the individual assignment in accordance with the current Regulations on the Organisation of the Educational Process at National Pirogov Memorial Medical University, Vinnytsya. ([https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc\(2026\).pdf](https://www.vnmu.edu.ua/downloads/other/polog_organiz_ocv_proc(2026).pdf)).

Resolution of Conflict Situations

In the event of misunderstandings or concerns regarding the quality of educational services, assessment of academic performance, or other conflict situations involving an instructor, students should first raise their concerns directly with the instructor. If the issue remains unresolved, the student has the right to submit an appeal to the Head of the Department in accordance with the Regulations on the Consideration of Appeals from Higher Education Students at National Pirogov Memorial Medical University, Vinnytsya ([VNMU website](#) → [General Information](#) → [Key Documents](#)).

Students also have the right to contact the student self-government bodies, the administration of the Faculty (Institute), or the University administration, either directly or through the designated feedback channels ("trust boxes"), links and addresses for which are available on the official VNMU website.

The Department recognises that a student-centred approach entails students' responsibility for the conscious and active acquisition of knowledge and for proper compliance with the rules and requirements established by applicable legislation and VNMU regulatory documents. The Department reserves the right to inform the relevant University bodies of any violations committed by students.

Policy on Blended Learning

The organisation of blended learning is governed by the Regulations on the Introduction of Elements of Distance Learning at National Pirogov Memorial Medical University, Vinnytsya ([VNMU website](#) → [General Information](#) → [Key Documents](#)). The main online learning platforms used for classes are Microsoft Teams and Google Meet.

The procedures for conducting practical classes, lectures, make-up classes, and consultations in the distance learning format are published on the Department's webpage ([VNMU website](#) →

Department of Pharmacy → For Students/Postgraduate Students → Mode of Study → Year of Study → Teaching and Learning Materials).

Communication with the Instructor. Students may contact the instructor via Microsoft Teams chat, messaging applications (Viber, Telegram, WhatsApp), or email, as determined by the instructor, during working hours.

9. LEARNING RESOURCES

Teaching and learning materials for the discipline are available on the Department's website. The materials can be accessed via: [VNMU website → Department of Pharmacy → For Students/Postgraduate Students](#).

LITERATURE

Core Literature for Clinical pharmaceuticals and pharmaceutical care

1. Vanderah TW, editor. Katzung's basic & clinical pharmacology. 16th ed. New York: McGraw Hill; 2024. 1347 p.
2. Clinical Pharmacology Made Ridiculously Simple — 6th edition, 2024. Автор James Olson, видавництво MedMaster, ISBN 978-1935660705.
3. Ritter, J. M., Flower, R. J., Henderson, G., Loke, Y. K., MacEwan, D. J., Robinson, E., & Fullerton, J. (2024). Rang & Dale's pharmacology (10th ed.). Elsevier.

Supplementary Literature for Clinical pharmaceuticals and pharmaceutical care

1. Dreischulte, T., van den Bemt, B., Steurbaut, S. *et al.* European Society of Clinical Pharmacy definition of the term clinical pharmacy and its relationship to pharmaceutical care: a position paper. *Int J Clin Pharm* 44, 837–842 (2022). <https://doi.org/10.1007/s11096-022-01422-7>
2. Whalen K. Lippincott illustrated reviews: pharmacology. 8th ed. Philadelphia: Wolters Kluwer; 2022.
3. Ritter J. M., Flower R. J., Henderson G., Loke Y. K., MacEwan D., Robinson E, et al. Rang & Dale's pharmacology. 10th ed. Philadelphia: Elsevier; 2024. 872 p.
4. Mir F. A., Walker L. E., Brown M.J., Sharma P., editors. Clinical pharmacology. 13th ed. Edinburgh: Elsevier; 2026. 744 p.
5. Nathan A. Non-Prescription Medicines. 2020. 320 p.
6. Drugs side effects / [Posokhova K.A., Oleshchuk O.M., Korda M.M., Shevchuk O.O., Cherniashova V.V.]. - 2023. - Ternopil : TNMU.– 286 p.

ELECTRONIC RESOURCES

1. University website: [National Pirogov Memorial Medical University, Vinnytsya](#)
2. Department website: [VNMU Departments](#) — Department of Pharmacy
3. University Library website: [VNMU Library](#)
4. National Scientific Medical Library of Ukraine: [National Scientific Medical Library of Ukraine](#)
5. World Health Organization: [World Health Organization \(WHO\)](#)
6. Ministry of Health of Ukraine: [Ministry of Health of Ukraine](#)
7. Public Health Center of the Ministry of Health of Ukraine: [Public Health Center of Ukraine](#)
8. English-language database of medical and biomedical literature: [PubMed](#)
9. English-language online resource for physicians and other healthcare professionals: [Medscape](#)
10. State Expert Centre of the Ministry of Health of Ukraine: <https://www.dec.gov.ua/>
11. State Service of Ukraine on Medicines and Drug Control: <https://www.dls.gov.ua/>
12. Ukrainian Pharmaceutical Institute of Quality: <http://gmpcenter.org.ua/>
13. British Pharmacopoeia: <https://www.pharmacopoeia.com>
14. United States Pharmacopoeia and National Formulary: <https://online.uspnf.com>
15. The International Pharmacopoeia 13th Edition: <https://digicollections.net/phint>

16. Australian Adverse Drug Reactions Bulletin <http://www.tga.health.gov.au/adr/aadrb.htm>
17. British monthly bulletin on the safety of medicine application: <http://www.mhra.gov.uk/Publications/Safetyguidance/DrugSafetyUpdate/index.htm>
18. European Association for Clinical Pharmacology and Therapeutics (EACPT): <http://www.eacpt.org>
19. Pharmacogenetics resource: <http://www.pharmgkb.org/>
20. Online registration of adverse drug reactions on the FDA website: <https://www.accessdata.fda.gov/scripts/medwatch/medwatch-online.htm>
21. Online platform with evidence-based medicine protocols: <http://guidelines.moz.gov>
22. Drug interactions: <https://www.dynamed.com/drug-interactions>

The course syllabus for the academic discipline "Clinical pharmaceuticals and pharmaceutical care" was discussed and approved at the meeting of the Department of Pharmacy (Minutes dated № 1, "26" 08 2026)

Course Coordinator:

Assoc. Prof., PhD
(Academic Degree, Academic Title)


(Signature)

Tetiana VOITENKO

Acting Head of the Department of Pharmacy

Assoc. Prof., PhD
(Academic Degree, Academic Title)


(Signature)

Yliia TOMASHEVSKA
