Criteria and procedure for evaluating learning outcomes

Criteria for assessing the knowledge and skills of higher education graduates from the educational component "Pharmaceutical Drug Technology" are developed in accordance with the "Regulations on the procedure for assessing students' knowledge in the credit-module organization of the educational process at NUPh".

Assessment of the student's progress in the educational component is a rating, exhibited on a 100-points scale and has a definition for the ECTS system and according to the traditional scale adopted in Ukraine.

Assessments (in points) are reflected in the calendar-thematic plans of laboratory classes.

The number of points that a student receives in a laboratory session ranges from 2.5 to 4.0.

Evaluation criteria	Points
theoretical training: • showed comprehensive and profound knowledge of theoretical material on the subject of the lesson, as set forth in the textbook, lectures and additional literature; • flawlessly fulfilled a written homework; • correctly responded to 5 test questions with the entrance control knowledge; • gave comprehensive answers to the teacher's theoretical questions; ***practical training:*** • without making mistakes, he wrote a prescription in accordance with the current NTD; • gave a detailed description of the medicinal form taking into account the physical-chemical properties of the medicinal substances; • properly prepared a workplace (picking up, weight, measuring devices, utensils, auxiliary material, etc.); • without errors made calculations on the reverse side of the written control passport (WCP); • correctly prepared the medicinal product, following the pharmaceutical procedure and sanitary regime in his workplace; • packaged and dispatched a medicinal product in accordance with applicable requirements; • handed over to the teacher for inspection the flawlessly prescribed medical form with the necessary documentation (WCP).	3,6–4,0
theoretical training: • showed complete knowledge of the theoretical material on the subject of • the lesson laid down in the textbook and lectures; • has done a written homework without errors; • answered a theoretical questions of the teacher with minor disadvantages; • correctly responded to 4 test questions at the entrance control of • knowledge; ***practical training:*** • without making mistakes, he wrote a prescription in accordance with the	3,0–3,5

• current one; • gave the incomplete characteristic of the medicinal form; • prepared his workplace with errors (for example, dishwashing	
theoretical training: • showed the knowledge of theoretical material on the topic of the classroom in the amount that is considered necessary and sufficient for the implementation of the practical part of the class; • completed a written homework with errors; • answered theoretical questions with errors that were eliminated with the help of a teacher; • correctly responded to 3 test questions at the entrance control of knowledge; ***practical training:*** • mistakes were made when prescribing the prescription form in accordance with the current NTD; • gave a description of a medicinal form that does not reflect the characteristics of medicinal substances; • prepared a workplace with errors (for example, dishwashing • inappropriately selected, etc.); • without errors made calculations on the reverse side of the control passport; properly prepared the drug, but the technology is irrational and without theoretical substantiation; • suggests errors in the compliance with the pharmaceutical procedures and sanitary regimes in their workplace (for example, they do not lose ground before work, etc.); • packaged and issued a misplaced drug for delivery (the technological order of ingredients in the control passport is not up to date, not all the labels are glued, etc.); • handed out to the teacher a checked dosses with the necessary documentation (a prescription and a passport of written control).	2,6–2,9
theoretical training: did not fulfil a written homework; did not get acquainted with the theoretical material on the subject of the lesson laid down in the textbook and lectures; did not answer the teacher's theoretical questions; answered correctly on 1-2 test questions, or did not respond at all at the entrance control of knowledge; ***practical training:*** made gross mistakes in prescribing of the prescription; did not give a description of the drug; prepared his workplace with errors; calculations on the back of the control panel are made with errors; chose the wrong technology of the drug and did not give her theoretical substantiation.	0–2,5

Independent work of the applicants of higher education is monitored during each laboratory lesson, during the control of the content module.

In the event that the AHE came to the class unprepared, he must be present at the class. After working with the electronic study guide for independent work on the Technology of pharmaceutical production drugs and an individual conversation with the teacher on the topic of the lesson, the student is admitted to practical work.

Control of mastering content modules is carried out in the last classes of studying the topics of content modules. The means of diagnosing students' knowledge are test control with the help of a computer program, 2 calculation problems and a recipe prescription. Only those students who have completed all types of work provided by the curriculum (worked out, missed practical classes, etc.)

Control of CM 1 is carried out in order to check the level of assimilation of theoretical material and practical skills. Theoretical knowledge is monitored by means of a test control using a computer program, solving 2 calculation problems and a recipe prescription. Control of practical skills is carried out by preparing medicines according to an individual prescription and drawing up the relevant documentation.

Control of CM 2 is carried out in order to check the level of assimilation of theoretical material and practical skills. Theoretical knowledge is monitored by means of a test control using a computer program, solving 2 calculation problems and a recipe prescription. Control of practical skills is carried out by preparing medicines according to an individual prescription and drawing up the relevant documentation.

Control of CM 3 is carried out in order to check the level of assimilation of theoretical material and practical skills. Theoretical knowledge is monitored by means of a test control using a computer program, solving 2 calculation problems and a recipe prescription. Control of practical skills is carried out by preparing medicines according to an individual prescription and drawing up the relevant documentation.

Control of CM 4 is carried out in order to check the level of assimilation of theoretical material and practical skills. Theoretical knowledge is monitored by means of a test control using a computer program, solving 2 calculation problems and a recipe prescription. Control of practical skills is carried out by preparing medicines according to an individual prescription and drawing up the relevant documentation.

Ticket structure:

• an individual prescription, according to which the ZVO must describe and produce an extemporaneous medicinal product;

• 2 calculation tasks;

• 60 tests using a computer program.

Evaluation criteria	**Points**
	10,0–16,0
Individual prescription, according to which ZVO must describe and manufacture an extemporaneous medicinal product; • wrote out a prescription without errors according to the current ND; • gave a detailed description of the medicinal product taking into account the physico-chemical properties of medicinal substances; • correctly prepared his workplace (picked up weighing devices, utensils, auxiliary material, etc.); • performed calculations on the reverse side of the written control passport without errors; • correctly prepared the medicinal product, observing the pharmaceutical order and sanitary regime in his workplace; • packaged and processed the medicinal product before release in accordance with current requirements; handed over to the teacher for inspection an impeccably prepared medicinal product with the necessary documentation (prescription and WCP). **Calculation tasks** • Correctly solved calculation problems with an explanation of the sequence of actions	15,0 –16,0

Tests Answered 90-100% of test questions	
Individual prescription, according to which AHE must describe and manufacture an extemporaneous medicinal product; • issued a prescription without errors according to the current one; • gave an incomplete description of the medicinal product; • prepared his workplace with errors (for example, irrationally selected dishes, etc.); • performed calculations on the reverse side of the WCP without errors; • correctly prepared the medicinal product with minor errors in compliance with the pharmaceutical order and sanitary regime in his workplace (for example, he did not wipe the scales before work, etc.); • packaged and issued a medicinal product with minor errors (carelessly pasted labels or signature, etc.); handed over the prepared medicinal product with the necessary documentation (prescription and WCP) to the teacher for verification. **Calculation tasks** • Correctly solved calculation problems without explaining the sequence of actions **Tests** • Answered 82-89% of test questions	13,0-14,0
Individual prescription, according to which ZVO must describe and manufacture an extemporaneous medicinal product; • mistakes were made when writing a prescription according to the current ND; • gave a description of the medicinal product that does not reflect the characteristics of the medicinal product; • prepared his workplace with errors (for example, irrationally selected dishes, etc.); • performed calculations on the reverse side of the PPK without errors; • correctly prepared the medicinal product, but the technology is irrational and without theoretical justification; • made mistakes in compliance with the pharmaceutical order and sanitary regime in his workplace (for example, did not wipe the scales before work, etc.); • packaged and processed a medicinal product with errors before release (the technological order of the ingredients in the PPK was not met, not all labels were pasted, etc.); • submitted the prepared medicinal product with the necessary documentation (prescription and passport of written control) to the teacher for verification. **Calculation tasks** • Solved one of the two calculation problems incompletely without explaining the sequence of actions **Tests** Answered 64-81% of test questions	12,0–13,0
Individual prescription, according to which ZVO must describe and manufacture an extemporaneous medicinal product; • mistakes were made when writing a prescription according to the current ND; • did not give a description of the medicinal product; • prepared his workplace with errors (for example, irrationally selected dishes, etc.); • performed calculations on the reverse side of the PPK without errors; • correctly prepared the medicinal product, but the technology is irrational and without theoretical justification; • made mistakes in compliance with the pharmaceutical order and sanitary regime in his workplace (for example, did not wipe the scales before work, etc.); • packaged and processed a medicinal product with errors before release (the technological order of the ingredients in the PPK was not met, not all labels were pasted, etc.); • submitted the prepared medicinal product with the necessary documentation (prescription and passport of written control) to the teacher for verification. **Calculation tasks** Solved one of the two calculation problems incompletely without explaining the sequence of actions **Tests**	10,0–12,0

Answered 60-63% of test questions	
Individual prescription, according to which AHE must describe and produce an extemporaneous medicinal product; • made gross mistakes when writing a prescription; • did not give a description of the medicinal product; • prepared his workplace with errors; • calculations on the reverse side of the PPK are made with errors; • chose the wrong drug technology and did not provide its theoretical justification. **Calculation tasks** • Did not solve any of the proposed calculation problems **Tests** • Answered less than 60% of test questions	lesser 10

The sum of points for the study of CM is the sum of the points received by the student during the study of all topics of the content module.

Semester evaluation of module is conducted by summarizing the module study results, increasing the rating if desired and filling out the reporting documentation.

The semester exam is conducted in writing. Each student must answer 60 test problems of a theoretical orientation, 1 situational problem and a calculation problem. The situational task is estimated at 50 points, the calculation task - 20 points, each correct answer to the test - 0.5 points.

The evaluation of the student's success in the discipline is a rating, is presented on a one-point scale and is defined according to the ECTS system and the traditional scale adopted in Ukraine.

It has been approved at the Department of pharmaceutical technology of drugs
Record from «1» september 2023 № 1

Head of the Department, prof.  Liliia VYSHNEVSKA