MINISTRY OF HEALTH OF UKRAINE
KHARKIV NATIONAL MEDICAL UNIVERSITY

Department of Pharmacology and medical prescription

Academic year 2024-2025

SYLLABUS OF THE ACADEMIC COMPONENT

«Medical and pharmaceutical commodity science»

Mandatory academic component

Form of education full-time

Field of science 22 «Health»

Specialty 223 «Nursing»

Education and professional program «Nursing»

The first (bachelor's) level of higher education

Course second

The syllabus of the academic component was considered at the meeting of the Department of Pharmacology and medical prescription
Protocol of
«28» August 2023 № 1

Head of the department

prof. T.I. Iermolenko
(signature) (name)

Approved by Methodical commission of KhNMU of problems of general training

Protocol of
«31» August 2023 № 1

Head of the Methodical Committee

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INTRODUCTION

The syllabus of the academic component (AC) "Medical and pharmaceutical commodity science" is made according to the Educational-professional program "Nursing" and the Standard of higher education of Ukraine, the first (bachelor) level, field of education 22 Health, specialty 223 Nursing.

The term of study in specialty is 2 years. According to the curriculum, the study of the subject is carried out in the 2nd year during the IV semester.

According to the approved curriculum of medical education seekers (ES), 90 hours (3,0 credits) are planned, including 22 hours of lectures, 2 hours of practical classes and 46 hours of self-work.

The subject of study is medicines and medical products as a commodity, i.e. a product of labor, made for exchange by buying and selling, specifying the needs of the consumer.

Interdisciplinary links:

Prerequisites. The study involves the preliminary acquisition of credits from the basics of materials science.

Post-requisites. The main provisions should be applied when studying professional educational components.

Link to the page of the academic component "Medical and pharmaceutical commodity science" in MOODLE

https://distance.knmu.edu.ua/course/view.php?id=5341

1. THE AIM AND TASK OF ACADEMIC COMPONENT

1.1. The purpose of studying the AC is training students in theoretical foundations and practical skills to improve the quality of training of specialists for various fields of medicine, pharmacy and manufacturing enterprises of the pharmaceutical industry.

1.2. The main task of the study of the AC "Medical and pharmaceutical commodity science":

- ensuring that education seekers master the basics of materials science, study of containers, packaging, labeling and transportation of medical products, sterilization methods, based on modern achievements in the field of medicine and pharmacy;
- study of regulatory and technical documentation for medicinal products;
- study of the assortment of medical and pharmaceutical products, their movement from the supplier to the consumer and the documentation that accompanies them;
- study of storage conditions of medical and pharmaceutical products according to their physico-chemical properties, pharmacological effect, dosage form and aggregate state.

1.3. Competences and learning outcomes, the formation of which contributes to the AC.

1.3.1. The study of the AC ensures that education seekers acquire the following **competencies**:

- integral:

A bachelor of nursing is able to solve complex specialized tasks and practical problems in the field of nursing or in the learning process, which involves the application of certain theories and methods of the relevant science and is characterized by the complexity and uncertainty of conditions.

- general:

GC 01. The ability to realize one's rights and responsibilities as a member of society, to realize the values of a civil (free democratic) society and the need for its sustainable development, the rule of law, the rights and freedoms of a person and a citizen in Ukraine.

GC 02. The ability to preserve and multiply moral, cultural, scientific values and achievements of society based on understanding the history and patterns of the subject area development, its place in the general system of knowledge about nature and society, in the development of society, technology and technology; the ability to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

GC 03. Ability to abstract thinking, analysis and synthesis.

GC 08. Skills in using information and communication technologies.

10. Ability to make informed decisions.

- professional:

PC 01. The ability to apply professional and legal standards in daily professional practice.

PC 02. The ability to recognize and interpret signs of health and its changes, illness or disability (assessment/diagnosis), limitations of the possibility of full-fledged life

activities, and to determine the problems of patients with various diseases and conditions.

PC 03. The ability to meet the needs of the patient/client throughout the lifetime (including the dying process) by planning, assisting and executing nursing interventions, evaluating and correcting individual care plans created in collaboration with the patient/client, caregivers, family members and other medical and social workers.

PC 04. Application of professional skills (abilities), medical means, interventions and actions to ensure the patient/client's with dignity, privacy (intimacy), confidentiality, protection of his rights, physical, psychological and spiritual needs on the basis of transcultural nursing, tolerant and non-judgmental behavior.

PC 05. The ability to effectively apply a combination of nursing skills (abilities), medical supplies, interventions and actions to ensure care based on a holistic approach, taking into account the satisfaction of the patient's needs for comfort, nutrition, personal hygiene and the ability of the individuals to meet their daily needs.

PC 06. The ability to effectively apply a set of professional skills (abilities), medical supplies, interventions and actions in assessing the functional status of patients/clients, preparing them for diagnostic examinations and taking biological material for laboratory examinations.

PC 07. Preservation of specialist's own health in the implementation of care, performing manipulations and procedures, when moving and transporting the patient/client.

PC 08. Preventive activities of a nurse aimed at preserving and strengthening health, preventing diseases, informing, and educating the patient and his family members.

PC 16. The ability to organize and manage the relevant structural unit (leadership and management).

1.3.2. Program learning outcomes (PLO).

Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the AC **(skills)**:

PLO 4. Monitor the work of junior medical staff and the state of inventory. In the conditions of health care facilities, in accordance with job duties, in order to comply with the sanitary and anti-epidemic regime, be able to:

- Conduct training of junior medical personnel on the performance of functional duties and occupational health and safety; monitor compliance with safety rules by junior medical personnel.

- Monitor the work of junior medical staff; control the implementation of the rules of the internal procedure by staff and patients; monitor compliance with measures of sanitary and hygienic regime in wards and medical offices.

PLO 5. Execute nursing administration. In the conditions of health care facilities, in order to implement organizational and management competencies, to be able to:

- make management decisions, ensure their implementation based on the application of nursing management models;

- ensure the implementation of orders and resolutions on health care issues;

- master the functional duties of the head of nursing services;

- know the procedure for licensing and accreditation of medical and preventive facilities, laboratories of various profiles, etc.

PLO 13. To prescribe, store and apply pharmacological agents.

1.3.3. The study of the AC provides education seekers with the following social skills (Soft skills):

- integrity - to encourage students to work selflessly in groups. Each member of the group should be responsible for a specific job or result. At the end of the group work, students should think about how they contributed to the work and why they deserve part of the final assessment;

- communication - to develop students' communication skills in oral and written forms, to participate in group discussions and to represent the group. They must be able to speak to the audience and communicate their ideas;

- courtesy - to ensure that students are respectful and polite to each other in the classroom and when working with other people;

- responsibility - to instill in students a sense of duty to the leader and other members of the group for the task given to him, to oblige to explain the reasons for non-fulfillment of the task and ways to correct the situation;

- flexibility - to give students long-term, problematic projects that must be completed within the established parameters and deadlines. These measures will stimulate them to organize and focus, to solve production problems and self-control;

- teamwork - encourage teamwork and collaboration through group work and assign different students to work together. Emphasize the importance of connection, trust, integrity, responsibility and cooperation.

2. THE CONTENT OF THE ACADEMIC COMPONENT

<table>
<tr><td rowspan="2">Indicator description</td><td rowspan="2">Branch of knowledge, specialty, educational
and qualification level, EPP</td><td>Characteristic of academic component</td></tr>
<tr><td>full-time education</td></tr>
<tr><td>Quantity of credits – 3.0</td><td>Field of education:
22 Health</td><td>normative</td></tr>
<tr><td rowspan="4">Total quantity of hours- 90</td><td rowspan="4">Specialty:
223 Nursing</td><td>Year of study:</td></tr>
<tr><td>2rd</td></tr>
<tr><td>Semester</td></tr>
<tr><td>4th</td></tr>
<tr><td rowspan="6">Hours for full-time education:
in-class – 44
self-work – 46</td><td rowspan="6">Educational and qualification level:
first (bachelor)

EPP Nursing</td><td>Lectures</td></tr>
<tr><td>22 h</td></tr>
<tr><td>Practical classes</td></tr>
<tr><td>22 h</td></tr>
<tr><td>Self-work</td></tr>
<tr><td>46 h</td></tr>
<tr><td colspan="3">Type of control: credit</td></tr>
</table>

2.1. Description of academic component

2.1.1. Lectures

№	Name of the topic	Number of hours	Type of the lecture
1	Normative documentation in commodity analysis.	2	thematic
2	Classification and coding of goods.	2	thematic
3	Packaging, labeling of medical products. Transport container.	2	thematic
4	Rules for storage of various groups of medicinal products and medical items in medical facilities. Accounting for medicines and medical products.	4	thematic
5	Tools for punctures, injections, transfusions.	4	thematic
6	Suture materials and pricking needles.	2	thematic
7	Bandaging materials.	2	thematic
8	Rubber products and patient care items.	2	thematic
9	Methods and means of sterilization and disinfection.	2	thematic
Total hours of lectures		22	

2.1.2. Seminar classes

Not provided for by the academic component program.

2.1.3. Practical classes

№	Name of the topic	Number of hours	Teaching methods	Forms of control
1	Normative documentation in commodity analysis.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
2	Classification and coding of goods.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
3	Packaging, labeling of medical products. Transport container.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
4	Rules for storage of various groups of medicinal products and medical items in medical	4	story-explanation, conversation, presentation,	oral examination (individual and frontal);

	facilities. Accounting for medicines and medical products.		simulation of situations, lecture, demonstration, videos	written survey; test control
5	Tools for punctures, injections, transfusions.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
6	Suture materials and pricking needles.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
7	Bandaging materials.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
8	Rubber products and patient care items.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
9	Non-metallic materials. Glass, ceramics and products made from them.	2	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control
10	Methods and means of sterilization and disinfection.	2	story-explanation, conversation, presentation, simulation of situations, lecture, demonstration, videos	oral examination (individual and frontal); written survey; test control
Total hours of practical classes		22		

2.1.4. Laboratory classes

Not provided for by the academic component program.

2.1.5. Self-work

№	Name of the topic	Number of hours	Teaching methods	Forms of control
1.	Topic 1. Creation of an annotated photo library for a group of medical and pharmaceutical products. Study of a certain assortment of medical and pharmaceutical products.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
2.	Oxygen, nitrous oxide. Oxygen, breathing and anesthetic equipment.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
3.	Technical means for traumatology.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
4.	Equipment and tools for stomatology.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
5.	Special tools: neurosurgical.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
6.	Special tools: urological, obstetric and gynecological.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
7.	Special tools: ophthalmological and otorhinolaryngological.	5	story-explanation, conversation, presentation, simulation of situations,	oral examination (individual and frontal); written survey; test control; abstract

			demonstration, videos	
8.	Medical equipment.	6	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
9.	Technical means for diagnosing diseases.	5	story-explanation, conversation, presentation, simulation of situations, demonstration, videos	oral examination (individual and frontal); written survey; test control; abstract
Total hours of self-work		46		

3. EVALUATION CRITERIA

3.1. Assessment of education seekers (ES) is carried out in accordance with the "Instructions for evaluating the educational activities of education seekers at the Kharkiv National Medical University".

The current educational activity (CEA) of ES is controlled by the teacher of the academic group, applicants have to master each topic of the AC and grades are set using a 4-point (national) system.

The final grade for the current educational activity is defined as the arithmetic average of traditional grades for each lesson, rounded to 2 decimal places and recalculated into a multi-point scale according to the table 1 (table 2 in accordance with the KNMU assessment instructions dated August 21, 2021 No. 181).

The study of the educational component is carried out over the course of one semester, the form of its control is credit, the average score according to the general education activity (GEA) is converted by the teacher of the department into a 200-point scale.

The assessment is conducted by the teacher of the academic group at the last lesson and involves taking into account the GEA (table 2, according to the KNMU assessment instructions dated 08/21/2021 No. 181) and checking the mastery of all topics of the educational component. The grade is determined in points from 120 to 200 and marked as "passed", "failed".

Table 1

Recalculation of the average score for current activities in a multi-point scale

4- score scale	200-score scale	4- score scale	200-score scale	4- score scale	200- score scale
5	200	4.22-4,23	169	3.45-3,46	138
4.97-4,99	199	4.19-4,21	168	3.42-3,44	137
4.95-4,96	198	4.17-4,18	167	3.4-3,41	136

4.92-4,94	197	4.14-4,16	166	3.37-3,39	135
4.9-4,91	196	4.12-4,13	165	3.35-3,36	134
4.87-4,89	195	4.09-4,11	164	3.32-3,34	133
4.85-4,86	194	4.07-4,08	163	3.3-3,31	132
4.82-4,84	193	4.04-4,06	162	3.27-3,29	131
4.8-4,81	192	4.02-4,03	161	3.25-3,26	130
4.77-4,79	191	3.99-4,01	160	3.22-3,24	129
4.75-4,76	190	3.97-3,98	159	3.2-3,21	128
4.72-4,74	189	3.94-3,96	158	3.17-3,19	127
4.7-4,71	188	3.92-3,93	157	3.15-3,16	126
4.67-4,69	187	3.89-3,91	156	3.12-3,14	125
4.65-4,66	186	3.87-3,88	155	3.1-3,11	124
4.62-4,64	185	3.84-3,86	154	3.07-3,09	123
4.6-4,61	184	3.82-3,83	153	3.05-3,06	122
4.57-4,59	183	3.79-3,81	152	3.02-3,04	121
4.54-4,56	182	3.77-3,78	151	3-3,01	120
4.52-4,53	181	3.74-3,76	150	**Less 3**	**Not enough**
4.5-4,51	180	3.72-3,73	149		
4.47-4,49	179	3.7-3,71	148		
4.45-4,46	178	3.67-3,69	147		
4.42-4,44	177	3.65-3,66	146		
4.4-4,41	176	3.62-3,64	145		
4.37-4,39	175	3.6-3,61	144		
4.35-4,36	174	3.57-3,59	143		
4.32-4,34	173	3.55-3,56	142		
4.3-4,31	172	3.52-3,54	141		
4,27-4,29	171	3.5-3,51	140		
4.24-4,26	170	3.47-3,49	139		

Evaluation of the educational component.

Evaluation of the results of the study of medical and pharmaceutical commodity science is carried out directly during the assessment. The grade from the educational component is min - 120 to max - 200. The correspondence of grades on a 200-point scale, a four-point (national) scale and the ECTS scale is shown in Table 2 (table 3 according to the KNMU Assessment Instructions dated 08/21/2021 No. 181).

Table 2

Evaluation scale at KNMU

Score on a 200-point scale	Score on a scale ECTS	Score on a four-point (national) scale
180-200	A	EXCELLENT
160-179	B	GOOD
150-159	C	GOOD
130-149	D	SATISFACTORY
120-129	E	SATISFACTORY
less 120	F, Fx	UNSATISFACTORY

Grades "FX" or "F" ("unsatisfactory") are issued to education seekers who have not been credited with the study of the educational component, the form of control of which is credit.

After completing the study, the person responsible for the organization of educational and methodical work at the department or the teacher assigns the ES an appropriate rating according to the scales (Table 2) for the individual study plan and fills in information on the success of the education seeker.

3.2. Questions for credit:

1. Coding of medical and pharmaceutical products. Basic definitions, concepts and purposes of coding.
2. Sterilization by ultraviolet and infrared radiation. Field of application. Positive and negative sides of this method of sterilization of medical instruments.
3. Medicines. Definition. Classification of medicinal products according to a number of features: pharmacological action, method of application, toxicity, physicochemical properties, aggregate state, expiration date.
4. Rules of operation and storage of sanitary and hygiene products made of rubber.
5. Functions of packaging of finished medicinal forms.
6. Materials science. Basic concepts and definitions. Classification of materials used in the production of medical and pharmaceutical products.
7. Clogging agents. Their main purpose. Classification of sealing means.
8. Appointment of probing and probing instruments. Which of the known methods of sterilization is optimal for general surgical instruments.
9. Acceptance of medical goods in a medical and preventive institution.
10. The influence of the technological process on the consumer properties of medicinal products.
11. Assortment, definition. Types of assortment. What is the purpose of assortment management in a medical and preventive institution.
12. Physical methods of sterilization. Thermal sterilization. Advantages of heat sterilization with steam under pressure in autoclaves.
13. Requirements for medicinal products. General storage rules. General requirements for the organization of storage of medicinal products.
14. Marking. Designation of operational signs for medicinal products. Examples.
15. Medical oxygen. Oxygen cylinders. Storage, basic rules.
16. Marking (branding) of metal medical instruments. Preservation of medical products.
17. Methods and principles of standardization.
18. Urological, obstetric and gynecological instruments. Classification of obstetric, gynecological, urological instruments. Which of the known methods of sterilization is used to sterilize elastic catheters and bougies.
19. Promising directions of creation of suture materials.
20. Quality indicators of medical products.
21. Consumer properties of polymer threads for the manufacture of medical products (bandage materials, suture materials, for the manufacture of tubular organ prostheses).

22. The main purposes of packaging materials. Nomenclature of packaging materials. Classification of packaging materials.
23. Expanding and pressing tools. Their classification by functional purpose.
24. Puncture-biopsy needles. Characteristic. The material from which the needles are made.
25. Container, basic concepts and definitions. Types of containers according to purpose.
26. Influence of pharmaceutical factors on consumer properties of medicinal products.
27. Falsification of medical products. Basic concepts and definitions.
28. Ophthalmological instruments. Classification of ophthalmic instruments. In what ways is the quality of cutting and compressing ophthalmic instruments evaluated.
29. Requirements for the packaging of suture material.
30. Excipients, their influence on consumer properties of medicinal products.
31. Consumer properties of excipients for creating different dosage forms.
32. Factors contributing to the falsification of medicinal products.
33. Tools for connecting tissues: Surgical needles. The needle is atraumatic. Ligature needle.
34. Non-absorbable synthetic suture materials. Nylon, polyamide blue, polyolefins.
35. Basic rules for storing dressings.
36. Factors preserving consumer properties of medical and pharmaceutical products.
37. Markings applied to transport containers (packaging).
38. Instruments and devices for injections, punctures, transfusions. Trocar. Syringe. The needle is injectable. Special needle. Justify methods of sterilizing different puncture instruments.
39. Non-absorbable suture materials from natural inorganic raw materials. Wire.
40. Decorative and unique properties of materials that determine the specific area of their use.
41. Non-metallic materials in the production of medical products. Classification of non-metallic materials. Glass. Ceramics. Porcelain.
42. What is the practical significance of a check digit in a numerical code.
43. Otorhinolaryngological instruments. Classification of ENT tools: a) by device; b) by purpose.
44. Sterilization of suture material.
45. Subject and methods of medical and pharmaceutical commodity science.
46. Methods of protecting medical products from corrosion, oxidation, moisture and light.
47. Marking of medicines.
48. Classify the devices for vision research according to their purpose. Devices for determining visual acuity. Devices for measuring intraocular pressure.
49. Non-absorbable suture materials. Positive properties and disadvantages.

50. Rules for storing rubber items: items for patient care, sanitation and hygiene items.

51. Medicinal products, medicinal forms, medicinal preparations as goods. Definition, classification of medicinal products, based on the goals of commodity analysis.

52. Characteristics of these types of falsification of pharmaceutical products: assortment (species), quality, quantity, value, information.

53. Appointment of dressing material and dressing means. The main requirements for dressing material. The main types of raw materials used in the production of ready dressings.

54. Conditionally absorbable suture materials.

55. Methods of sterilization.

56. Properties and composition of medical rubber. The influence of the technological process of obtaining rubber on its consumer properties.

57. Types of barcodes used for coding medical and pharmaceutical products.

58. Method of sterilization of dressing material. Medical hygroscopic cotton wool. Its receipt, types, purpose.

59. Suture material. Synthetic absorbable suture materials. Their properties.

60. Classification of anesthesia tools.

61. Methods of sterilization.

62. The influence of the active substance on the consumer properties of the medicinal product.

63. Concept of safety of pharmaceutical products. Consumer safety and environmental safety.

64. Tools for connecting fabrics: suture material. Requirements for suture material. Classification. What sterilization methods are used to sterilize suture material.

65. Suture materials from natural, non-absorbable inorganic raw materials. Silk, linen, horse hair. Positive properties and disadvantages.

66. Rules for storing poisonous, narcotic and psychotropic medicines.

67. Storage of medical goods made of metals and alloys.

68. Marking. Marking requirements.

69. Compress cotton wool, its characteristics, purpose and difference from hygroscopic cotton wool. The main indicators of cotton wool quality.

70. Dissolvable suture materials. Catgut, its characteristics.

71. Clamping tools. Their purpose. Classification of hemostatic clamps.

72. Regulatory documentation for medical and pharmaceutical products. Quality certificate, its role in commodity analysis.

73. Storage rules for certain groups of pharmaceutical products. Storage of dressing materials and ready-made dressings.

74. Dressing materials. Tubular medical bandages, elastic bandages, medical plasters. Their purpose.

75. Ways of connecting a thread with a needle.

76. Organoleptic methods of detection of falsified medicinal products.

77. Quality of medical and pharmaceutical products. Types of quality indicators. Documents regulating the quality of medical and pharmaceutical products.

78. Chemical methods of sterilization. Gas sterilization. Sterilization with chemical solutions.

79. General rules for storage of flammable and explosive medicinal products.

80. Suture material. Surface properties of the thread. Manipulation properties of threads.

81. Factors affecting the preservation of consumer properties of medical products.

82. Commodity analysis. Basic definitions and concepts. The main functions, goals and tasks of commodity analysis in health care.

83. Requirements for the organization of storage of pharmaceutical products.

84. Gauze and its types. The main quality indicators of gauze.

85. Suture material. Thread strength.

86. Field of application in medicine of general surgical instruments. Basic requirements for general surgical instruments.

87. Consumer properties of polymers used in medicine.

88. Sterilization of medical products and pharmaceuticals. General requirements for sterilization. Methods of sterilization.

89. Requirements for the organization of premises for the storage of various types of medical goods (humidity, temperature, central heating, availability of air conditioners, equipment, cleaning).

90. Requirements for suture material.

91. Methods of regeneration of rubber products.

92. Consumer properties of polymers used for the manufacture of medicinal products (blood and plasma substitutes).

93. Storage of containers, sealing means and packaging materials.

94. Medical instruments. Definition. Classification of general surgical instruments.

95. Suture material. Classification of suture material according to the nature of polythread assembly. Positive properties of combined threads, their disadvantages.

96. Bar coding is a product identification method.

97. Consumer properties of drug prolongers.

98. Requirements for containers, sealing means and packaging materials.

99. Clamping tools. Classification of clamping tools by functional purpose, design features, degree of compression.

100. Classification of suture material: a) biodegradability; b) structures; c) raw materials from which the material is produced.

101. Write-off of medical goods.

102. Commodity analysis. The main stages of its implementation.

103. Requirements for premises where pharmaceutical products are stored.

104. Types of ready-made dressings made of cotton wool and gauze. Cotton-gauze ready dressings. Rules of storage of dressing material. Method of sterilization of dressing material.

105. Labeling of medicinal products manufactured in pharmacies.
106. Requirements for glasses.
107. Medical goods. Consumer properties of medical products.
108. Medical leeches. Rules for storage and care of leeches.
109. Rubber sanitation and hygiene products. Rubber aging. Early signs of rubber aging, late signs of rubber aging, registration of rubber products.
110. Labeling of finished medicines.
111. General requirements for the packaging of finished medicinal forms.
112. Classification of medical and pharmaceutical products. Types of classifications.
113. Radiation and ultrasound method of physical sterilization.
114. Rules for storing rubber items: items for patient care, sanitation and hygiene.
115. Evaluation of the quality of sanitation and hygiene products (warmers, ice containers, syringes, harnesses, gloves).
116. Classification of packaging of finished dosage forms.
117. Bar coding. The value of bar coding for commodity analysis.
118. Sterilization with dry hot air. Modes of sterilization. Positive and negative sides.
119. Storage of medicines that require protection from light, moisture, temperature, gasses.
120. Rules for sterilization and disinfection of sanitary and hygiene products made of rubber.
121. Requirements for the quality of finished dosage forms: tablets, dragees, granules, powders, liquid dosage forms, eye drops, solutions for injections, ointments and liniments, suppositories, plasters
122. Latexes and products from them. Types of latex. Consumer properties of latexes.
123. Container. Classification of containers.
124. Storage of fragrant, coloring, volatile medicines.
125. Marking. Appointment of warning signs. Examples.
126. Rules for storage of chemical reactors, disinfectants.

3.3. Control questions.

1. Product quality and methods of its verification.
2. Levels, goals, tasks and principles of standardization.
3. Subjects and objects of standardization.
4. Types of regulatory documents.
5. Types of standards.
6. Designation of ND.
7. ND establishing requirements for the quality of medicinal products and medicinal plant raw materials.
8. The structure of standards, TU U, AND. Basic and mandatory elements of the standard.
9. Procedure for approval and terms of validity of ND.

10. Classification - definition.
11. Goals and tasks of classification.
12. The levels (grades) by which goods are classified.
13. Hierarchical and faceted methods of classification.
14. Harmonized classification system HS / CN (harmonized system / combined numbering), levels (degrees) of classification and features by which they are formed.
15. Product classifiers, their meaning and areas of use.
16. The State Classifier of Products and Services (DCP) - structure and classification groupings.
17. Ukrainian classification of goods of foreign economic activity (UKT ZED) - structure and classification groupings.
18. Anatomical-therapeutic-chemical system of classification.
19. Coding of goods as a result of their classification and the goals it pursues.
20. Code, its structure, alphabet.
21. Decimal numeric code, binary numeric and bar codes.
22. Product type and its decimal numeric code, as well as SRS and HS / CN codes according to DCPP.
23. EAN-8, EAN-13 decimal numerical codes of consumption units.
24. DSTU 3146-95 regulates the rules for constructing the binary digital code and bar code of EAN-8 and EAN-13 decimal codes of consumption units.
25. Decimal numerical codes DUN-14, DUN-16 of delivery units and their structure.
26. DSTU 3147-95 regulated rules for building the binary digital code of the decimal codes DUN-14, DUN-16 of the delivery units. Rules for printing barcodes of supply units according to ITF (International Type of Formation).
27. CODE format DUN-14 units of delivery based on EAN-13 code.
28. CODE format DUN-14 units of delivery based on EAN-8 code.
29. CODE format DUN-16 delivery units based on EAN-13 code.
30. Code formats of supply units based on EAN-8, EAN-13 codes with an additional code (DC)
31. Normative documents and legal acts regulating requirements for packaging and labeling of medical products.
32. Packaging classification.
33. Main functions of packaging.
34. Assortment of packages for medical products.
35. Requirements for polymer, paper and combined containers.
36. The main functions of labeling.
37. Consumer labeling of medical products.
38. Classification and assortment of transport containers.
39. Requirements for transport containers.
40. Storage conditions for transport containers.
41. Normative documentation that regulates the storage conditions of medicines and medical products.

42. General requirements for the organization of storage, premises and equipment for the storage of LZ and VMP.
43. Requirements for storage facilities for flammable and explosive medicinal products.
44. Features of storage of medicinal products depending on the physical and chemical properties.
45. Features of storage of medicinal plant raw materials.
46. Features of storage of disinfectants.
47. Storage conditions for rubber products.
48. Storage conditions for plastic products.
49. Storage conditions for dressings.
50. Organization of storage of medical equipment products.
51. Appointment of suture materials.
52. What groups are divided into according to classification.
53. Assortment of suture materials.
54. Technical requirements for suture materials.
55. Packaging and labeling of suture material.
56. Purpose of surgical needles.
57. Assortment of surgical needles and their classification:
58. a) by construction;
59. b) by appointment.
60. Technical requirements for surgical needles.
61. Packaging, labeling of surgical needles
62. Concept of rubber, its classification. Components of the rubber mixture.
63. Methods of manufacturing rubber products.
64. Factors affecting the aging process of rubber.
65. Requirements for the quality of rubber products and methods of determining quality.
66. Rules for storage of rubber products. Warranty period of storage and period of use.
67. Methods of disinfection of rubber products.
68. Packaging, labeling and transportation of rubber products.
69. Empty rubber products: warmers, ice bladders, wheels and vessels, irrigation mugs, uterine rings, cylinders, syringes and bellows (types, purpose and quality requirements).
70. Tubular elastic products: drainage tubes, auditory tubes, blood transfusion tubes, connecting tubes, vacuum tubes, gas removal tubes, catheters and probes (types, purpose and quality requirements).
71. Products for anesthesia and artificial respiration: air ducts, intubation tubes (types, purpose and quality requirements).
72. Latex products: surgical and anatomical gloves, mittens, baby nipples (types, purpose and quality requirements).
73. Subjects of patient care, their types, purpose, technical requirements, storage.

74. What is dressing material and what is it for?
75. Name the main raw materials for obtaining dressing material
76. Name the commercial types of dressing material
77. What requirements should wool, gauze, lignin meet?
78. What ready-made dressings do you know?
79. Name the product types of dressing packages
80. What information should be contained in the marking of cotton gauze
81. products?
82. List the main storage conditions for dressing material and ready-made dressings
83. Appointment of tools and devices for punctures, injections, transfusions and suction.
84. Classification of reusable medical injection syringes and single-use injection syringes.
85. The main technical requirements for reusable medical injection syringes and single-use injection syringes.
86. Conventional designations of multi-use medical injection syringes and single-use injection syringes and their capacity.
87. Assortment and commercial types of reusable injection needles and single-use injection needles.
88. Materials used for the manufacture of reusable medical injection syringes and single-use injection syringes, as well as reusable injection needles and single-use injection needles.
89. The main technical requirements for reusable injection needles and single-use injection needles.
90. Marking of reusable medical injection syringes and single-use injection syringes,
91. Marking of reusable injection needles and single-use injection needles.
92. Packaging, storage and transportation of reusable medical injection syringes and single-use injection syringes, as well as reusable injection needles and single-use injection needles.
93. Classification of non-metallic materials.
94. Silicate materials. What is ceramics? Ceramic products.
95. Technological process of manufacturing ceramic products.
96. Glass, its composition. Brands of glass and assortment of glass products.
97. Technological process of manufacturing glass products
98. Anomalies of eye refraction and their correction:
99. Devices for researching the functions of the organ of vision.
100. Classification of lenses (according to manufacturing technology, according to the number of optical zones, depending on the nominal position of the optical center, if it is possible to correct vision defects).
101. Technical requirements for eyeglass lenses.
102. Packaging and labeling of lenses.
103. Types of protective and specialized points.

104. Contact lenses
105. Concept of asepsis.
106. Sterilization. Significance and content of the term.
107. Disinfection. Significance and content of the term.
108. The main types of sterilization
109. Pre-sterilization cleaning and equipment for it.
110. Equipment for sterilization.
111. Disinfection of medical products, instruments and devices, closed premises and equipment for its implementation.

3.4. Individual task.

Not provided for by the program of the educational component.

3.5. Rules for appealing the assessment

The assessment is carried out in accordance with the "Regulations on the appeal of the results of the final control of education seekers of KNMU" № 35/2020.

Appeal of the results of the final control (hereinafter - FC) of knowledge of education seekers is part of the organizational support of the educational process. ES has the right to appeal the final grade obtained from the AC.

When considering an application for a FC, which was conducted in writing, repeated or additional questioning of the education seeker by the Appeals Commission is prohibited. The Appeals Commission reviews and analyzes the written work guided by the evaluation criteria of the EC.

When considering an application for a FC, which was made orally, the education seeker, by decision of the Appeals Commission, may be given the opportunity to re-compile the FC during the meeting of the Appeals Commission for a new ticket, from a set of tickets for the AC. For the sake of objectivity and transparency, the ticket for which the education seeker first took the FC is removed from the set.

Decisions of the appeal commission are made by a majority vote of the general membership of the commission. In case of different numbers of votes "for" and "against" the decision which is supported by the ready commission is accepted.

The result of consideration of the application is the adoption by the Appeals Commission of one of two decisions:

- preliminary assessment of the education seekers knowledge on the FC corresponds to the level of quality of his knowledge in this EC and does not change;

- preliminary assessment of the education seeker knowledge on the FC does not correspond to the level of quality of his knowledge in this AC and deserves a different assessment (indicate a new assessment in accordance with the current scale of evaluation of FC results), but not lower than obtained on the FC for which the application is submitted.

4. ACADEMIC COMPONENT POLICY

Course requirements

It is expected that education seekers will be present (in person or, in the case of distance learning, online) in all lectures and practical classes according to the schedule at the Department of Pharmacology and Medical Prescription. Late for both lectures and practical classes are not allowed. In the case of full-time classes, education seekers must be dressed in white coats. If education seekers missed classes, they must complete it (in person or, in the case of distance learning, online) according to the schedule on the information stand of the department and on the page of the department in the Moodle system.

Written and homework must be completed completely and on time, if education seekers have questions, you can contact the teacher in person or by the contacts provided on the departmen's page in the Moodle system.

During the lecture, applicants are recommended to keep a synopsis of the lesson and keep a sufficient level of silence. Asking questions to the lecturer is perfectly normal.

During the practical lesson, education seekers should take an active part in the discussion and detailed analysis of the material in the classroom (or in the virtual classroom), ask questions, express their views, and discuss. During the discussion it is important:

- respect for colleagues,
- tolerance for others and their experience,
- receptivity and impartiality,
- the ability to disagree with the opinion, but to respect the personality of the opponent/ s,
- careful argumentation of his opinion and the courage to change his position under the influence of evidence,
- mandatory acquaintance with primary sources.

Education seekers are expected to be interested in participating in city, national and international conferences, competitions and other events in the subject profile.

The use of electronic gadgets during lectures or practical classes face-to-face is allowed only in case of emergency (except when teaching methods require their direct use).

Occupational Health

The first lesson of the course will explain basic principles of occupational Safety and Health by conducting appropriate training. It is expected that everyone should know where the nearest evacuation exit is, where the fire extinguisher is, how to use it, and so on.

Behavior in the audience

It is important for educational seekers to follow the rules of good behavior at the university. These rules are common to all, they also apply to all faculty and staff, and are not fundamentally different from the generally accepted norms.

During classes it is allowed:

- leave the audience for a short time if necessary and with the permission of the teacher;
- drink soft drinks;
- take photos of presentation slides;
- take an active part in the class

Forbidden:

- eating (except for persons whose special medical condition requires another - in this case, medical confirmation is required);
- smoking, drinking alcohol and even low-alcohol beverages or drugs;
- use obscene language or use words that offend the honor and dignity of colleagues and faculty;
- gambling;
- damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter the premises and territories);
- shouting, shouting or listening to loud music in classrooms and even in corridors during classes.

5. ACADEMIC INTEGRITY

The Department of Pharmacology and prescription maintains zero tolerance for plagiarism. Education seekers are expected to continually raise their awareness of academic writing. The first lessons will provide information on what to consider plagiarism and how to properly conduct research and scientific research.

Observance of academic integrity by pedagogical, scientific-pedagogical and scientific workers provides:

• objective and impartial assessment of knowledge and skills of ES (graduates);
• compliance with the rules of reference to sources of information in the case of borrowing ideas, statements, writing methodological materials, scientific papers, etc .;
• monitoring the observance of academic integrity by ES for higher education;
• compliance with the law on copyright and related rights;
• informing higher education seekers about the main criteria for detecting plagiarism and responsibility for its use;
• conducting activities among education seekers to prevent cases of plagiarism.
• providing reliable information about research methods and results, sources of information used and own pedagogical (scientific-pedagogical, creative) activities;

The academic integrity of higher education seekers includes:

• use in teaching or research activities only verified and reliable sources of information and refer to them correctly;
• compliance with the rules of reference to sources of information in the case of borrowing ideas, statements, writing methodological materials, scientific papers, etc .;
• independent performance of educational tasks, tasks of current and final control of learning outcomes (for persons with special educational needs this requirement is applied taking into account their individual needs and opportunities);
• compliance with the law on copyright and related rights;

• providing reliable information about the results of their own educational (scientific, creative) activities, used research methods and sources of information

6. RECOMMENDED BOOKS

Basic

1. Medical and pharmaceutical commodity science: education. manual for students of bachelors of medicine. and Pharm. studies institutions of III-IV accreditation levels / T.I. Yermolenko, G.O. Sirova, O.M. Gubska, O.V. Kryvoshapka - Kharkiv: KNMU, 2018. - 173 p.
2. State Pharmacopoeia of Ukraine. Edit. 2, 5 addit. - Kharkiv: State Enterprise "Ukrainian Scientific Pharmacopoeia Center for the Quality of Medicines", 2021. — 424 p.
3. Methodical guidelines for the independent work of undergraduate students from the discipline "Medical and Pharmaceutical commodity science" specialty "Nursing" / editor: T. I. Yermolenko, A. V. Aleksandrova, O. M. Gubska. - Kharkiv: KNMU, 2016. - 175 p.

Auxiliary

1. Council Directive 88/379/EEC of 7 June 1988 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labeling of dangerous preparations (OJ No L 187, 16.7.1988, p. 14), as last amended by Commission Directive 93/18/EEC of 5 April 1993 (OJ No L 104, 29.4.1993, p. 46)
2. Rang & Dale's Pharmacology. – 8th edition. – ELSEVIER Churchill Livingstone, 2016. – 759 p.
3. Packaging of Pharmaceuticals and Healthcare Products / H. Lockhart, F. A. Paine. – London : Blackie academic&Professional, 2006.

7. INFORMATION RESOURCES

1. Access Medicine https://accessmedicine.mhmedical.com/index.aspx
2. Science Direct https://www.sciencedirect.com/
3. Library of KhNMU http://libr.knmu.edu.ua/index.php/11-na-glavnoj/956-khnmu-nadano-dostup-do-resursiv-mcgraw-hill
4. Clinical case-based resource https://www.capsule.ac.uk/
5. Speaking clinically https://speakingclinically.co.uk/
6. Linda Hall Library https://www.lindahall.org/