MINISTRY OF HEALTH OF UKRAINE
KHARKIV NATIONAL MEDICAL UNIVERSITY

Department of Medical and Biological Physics and Medical Informatics
Academic year 2021-2022

SYLLABUS OF THE EDUCATIONAL COMPONENT
"MODERN COMPUTER TRAINING OF A NURSE"

Normative or selective educational component selective

Form of education full-time

Field of knowledge 22 Health care
(code and name of the training direction)

Major field 223 Nursing
(code and name of the specialty)

Educational professional program Nursing

The first (bachelor's) level of higher education **4 years of study**

Year: 1

This syllabus was approved at the meeting of the department of medical and biological physics and medical informatics

Record № 7 dated
"27" August 2021

Head of department

prof. O.V. Zaytseva

Approved by the methodological committee on international students training (KhNMU)

Record № 1 dated
"31" August 2021

Head

prof. S.O. Krasnikova

SYLLABUS DEVELOPERS:

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(surname, name, position, academic title, scientific degree)

2. Yevgenia Radzishevska, Associate Professor, Associate Professor, PhD on Physical and Mathematical Sciences
(surname, name, position, academic title, scientific degree)

3. Andriy Solodovnikov, Associate Professor, Associate Professor, PhD on Technical Sciences
(surname, name, position, academic title, scientific degree)

4. Natalia Ponomarenko, Senior Lecturer
(surname, name, position, academic title, scientific degree)

DATA ON TEACHERS TEACHING THE EDUCATIONAL COMPONENT

Surname, name, position, academic title, scientific degree	**Yevgenia Radzishevska**, Associate Professor, Associate Professor, PhD on Physical and Mathematical Sciences
Professional interests, link to the teacher's profile (on the website of the university, the department, page on Moodle platform, etc.)	Medical and Biological Physics; Medical Informatics https://knmu.edu.ua/departments/kafedra-medychnoyi-ta-biologichnoyi-fizyky-i-medychnoyi-informatyky/
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Consultations	According to the schedule of the educational department
Location	Department of Medical And Biological Physics And Medical Informatics
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Location	Department of Medical And Biological Physics And Medical Informatics

INTRODUCTION

The syllabus of the educational component "Modern computer training of a nurse" is compiled in accordance with the educational and professional program (hereinafter EPP) "Nursing" and the Standard of Higher Education of Ukraine (hereinafter Standard), the first (bachelor's educational and scientific) level of higher education, field of knowledge 22 "Health care", specialty 223 "Nursing".

Description of the educational component (abstract). The educational component "Modern computer training of a nurse" is taught to form and develop the skills of rational use of modern general and special purpose software in the processing of medico-biological data.

The subject of study of the educational component is the information processes of the health care industry in the conditions of the development of the electronic health care system.

Interdisciplinary connections. The study of the educational component "Modern computer training of a nurse" involves prior or simultaneous learning of educational components "Fundamentals of biological physics and medical equipment", "Medical equipment in diagnosis and treatment", "Nursing in cardiology", "Medical expert systems", "Technologies of telemedicine".

Prerequisites. The study of the educational component involves the prior assimilation of educational components in the field of medical informatics.
Post-requisites. The main provisions of the educational component should be applied when studying professional educational components.

Link to the educational component web-page in MOODLE
http://distance.knmu.edu.ua/enrol/index.php?id=5085

1. PURPOSE AND TASK OF THE EDUCATIONAL COMPONENT

1.1. The purpose of teaching the educational component "Modern computer training of a nurse" is the formation and development of the future specialist's competence in the field of digital technologies to ensure the rational use of modern software of general and special purpose in the processing of medical and biological data, the study of patterns and principles of information processes in systems of different levels of hierarchy in the field of health care.

1.2. The main tasks of the educational component "Modern computer training of a nurse" are the acquisition by students of education of competencies in accordance with the general and professional competencies of the educational and professional program "Nursing" of the first (bachelor's) level of higher education in the specialty 223 Nursing.

1.3. Competencies and learning outcomes, the formation of which is facilitated by the educational component (relationship with the normative content of the training of higher education applicants, formulated in terms of learning outcomes in the OPP and the Standard):

1.3.1. The study of the educational component ensures that students acquire the following competencies:

- integral:

the ability to solve typical and complex specialized tasks and practical problems in professional activities in the field of health care or in the learning process, which involves conducting research and/or implementing innovations and is characterized by the complexity and uncertainty of conditions and requirements.

- general:

ability to abstract thinking, analysis and synthesis; the ability to apply knowledge in practical activities; skills in using information and communication technologies; the ability to search, process and analyze information from various sources; ability to adapt and act in a new situation; ability to work in a team; the ability to preserve and multiply moral, cultural, scientific values and achievements of society based on an understanding of the history and patterns of development of the subject area, its place in the general system of knowledge about nature and society and in the development of society, technology and technologies, to use various types and forms of motor activity for active recreation and leading a healthy lifestyle.

- special (professional, subject):

the ability to effectively use modern programs of general and special purpose in the field of health care; the ability to independently master software tools of various purposes and to update and integrate acquired knowledge; the ability to evaluate the role of new information and communication technologies in the field of health care with prospects for the development of computer technology.

1.3.2. The study of the educational component "Modern computer training of a nurse" ensures that the students acquire the following program learning outcomes (PLO):

PLO 2. Carry out nursing diagnosis: identify and assess the patient's problems.

In the conditions of health care facilities, at home, predictable circumstances, to be able to identify the real problems of the patient, assess their priority and establish a nursing diagnosis.

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 personnel; 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 14. To be able to prepare the patient, collect and direct biological material for laboratory and instrumental research.
PLO 20. Appropriate medical documentation should be kept.

1.3.3. The study of the educational component ensures that students of higher education acquire the following social skills (soft skills):
- communication skills (implemented through: the method of working in groups and brainstorming during analysis, clinical cases, the method of presenting the results of independent work and defending them in a group),
- teamwork (implemented through: group work method and brainstorming during analysis, clinical cases),
- conflict management (implemented through: business games),
- time management (implemented through: self-organization method during classroom work in groups and independent work),
- leadership skills (implemented through: a method of presenting the results of independent work and defending them in a group).

2. INFORMATION SCOPE OF THE EDUCATIONAL COMPONENT «MODERN COMPUTER TRAINING OF NURSE»

Name of indicators	Field of knowledge, specialty, educational degree, EPP	Characteristics of the educational component
		full-time education
Credits – **3,0**	Branch of knowledge: 22 Health care (code and name)	**selective**
Total hours – **90**	Specialty: 223 Nursing (code and name)	**Year of education:**
		1st
		Semester:
Hours for full-time study: In auditorium - 32 Independent work - 58	Educational degree: first (bachelor) level of higher education	**Luctures:** 0 hours.
		Practice: 32 hours.
		Independent work: 58 hours.
		Individual tasks: **0** hours.
		Type of control: **credit**

2.1 Description of the educational component:

2.1.1 Lectures

№	Topic name	hours	Lecture types
		Total: **0**	

2.1.2 Seminar classes

№	Topic name	hours	Teaching methods	Forms of control
		Total: **0**		

2.1.3 Practical classes

№	Topic name	Hours	Teaching methods	Forms of control
1	Basic types of computers. The main components of a desktop computer. The main types of external devices.	2	presentation on the platform Google meet, story-explanation, conversation	Test control (Moodle platform)
2	Structural diagram of a personal computer. Principles of PC	2		

	operation.			
3	Modern operating systems	2		
4	Proprietary software. Computer protection.	4		
5	Text, spreadsheet and presentation software from the world's leading suppliers	4		
6	Using the Internet	2		
7	Review, search and critical evaluation of information received from the Internet	2		
8	Communication in the digital environment and network etiquette	4		
9	Coding, classification and standardization in medicine	2		
10	Digital transformation of healthcare in Ukraine	2		
11	Basics of information security. Protection of medical information	2		
12	Medical information systems as a component of the electronic health care system	2		
13	**Credit**	2	Test control (Moodle platform)	
	Total	**32**		

2.1.4. Laboratory classes

№	Topic name	Hours	Teaching methods	Forms of control
1				
		Total: **0**		

2.1.5. Independent work

№	Topic name	Hours	Teaching methods	Forms of control
1	The history of the development of informatics and information technologies	6	electronic information	test control as a component of final control (Moodle platform)
2	Cybernetics and the history of its development.	6		
3	Comparative analysis of operating systems (Windows, Linux, Android, etc.).	6		
4	Problems of information protection when implementing network technologies.	8		
5	Digital transformation of healthcare in Ukraine	8		
6	Coding, classification and standardization in medicine	8		
7	Medical information systems as a component of the electronic health care system	8		
8	Expert systems in medicine as specialized software	8		
	Total	**58**		

3. EVALUATION CRITERIA

3.1.1 The evaluation of the educational success of education seekers is carried out on the basis of the current "Instructions for evaluating the educational activity of the KHNMU students.

Control methods:

Oral and written control of mastering the topic is carried out in practical classes.

Control of the acquisition of practical abilities and skills is carried out in practical classes by the method of observation.

Control of the performance of independent work is carried out in writing (the written form involves presentation in both paper and/or electronic form) and oral form.

Current control is carried out at each practical session in accordance with the specific objectives of the topic. Types of standardized control of theoretical training and control of the acquisition of practical skills are used in all practical classes: computer tests, performance of practical tasks, including competence-oriented ones.

Final control involves the use of computer tests on the MOODLE remote platform to check the level of theoretical knowledge and the formation of practical skills in the process of performing a practical task on the computer.

The mark for each practical lesson from the educational component is complex, including the control of theoretical and practical training of the student of higher education, is given by the teacher according to the traditional four-point scale in the ASU, which is then converted into the corresponding points.

Evaluation criteria of the final control on the MOODLE platform.

The final control contains 25 questions, including:

15-19 correct answers - 15-19 points - grade "3",
20-23 correct answers - 20-23 points - grade "4",
24-25 correct answers - 24-25 points - grade "5".

Evaluation of the current educational component (CEC):

After conducting the last practical lesson and posting the grade in the electronic journal, the ASU calculates the student's average score for the year, and if there is no academic debt / missing a lesson, a credit is issued. The recalculation of the average grade for the current activity into a multi-point scale is carried out in the ACS in accordance with the "Instructions for evaluating the educational activity of students of KhNMU", approved by KhNMU Order No. 181 dated 08/21/2021. (Table 1).

Table 1

Recalculation of the average grade for the current activity in a 200-point scale (for the educational component that ends with credit)

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	200	4.3-4,31	172	3.6-3,61	144
4.97-4,99	199	4,27-4,29	171	3.57-3,59	143
4.95-4,96	198	4.24-4,26	170	3.55-3,56	142
4.92-4,94	197	4.22-4,23	169	3.52-3,54	141
4.9-4,91	196	4.19-4,21	168	3.5-3,51	140
4.87-4,89	195	4.17-4,18	167	3.47-3,49	139
4.85-4,86	194	4.14-4,16	166	3.45-3,46	138
4.82-4,84	193	4.12-4,13	165	3.42-3,44	137
4.8-4,81	192	4.09-4,11	164	3.4-3,41	136
4.77-4,79	191	4.07-4,08	163	3.37-3,39	135
4.75-4,76	190	4.04-4,06	162	3.35-3,36	134
4.72-4,74	189	4.02-4,03	161	3.32-3,34	133
4.7-4,71	188	3.99-4,01	160	3.3-3,31	132
4.67-4,69	187	3.97-3,98	159	3.27-3,29	131

4.65-4,66	186		3.94-3,96	158		3.25-3,26	130
4.62-4,64	185		3.92-3,93	157		3.22-3,24	129
4.6-4,61	184		3.89-3,91	156		3.2-3,21	128
4.57-4,59	183		3.87-3,88	155		3.17-3,19	127
4.54-4,56	182		3.84-3,86	154		3.15-3,16	126
4.52-4,53	181		3.82-3,83	153		3.12-3,14	125
4.5-4,51	180		3.79-3,81	152		3.1-3,11	124
4.47-4,49	179		3.77-3,78	151		3.07-3,09	123
4.45-4,46	178		3.74-3,76	150		3.05-3,06	122
4.42-4,44	177		3.72-3,73	149		3.02-3,04	121
4.4-4,41	176		3.7-3,71	148		3-3,01	120
4.37-4,39	175		3.67-3,69	147		**Less than 3**	**Not enough**
4.35-4,36	174		3.65-3,66	146			
4.32-4,34	173		3.62-3,64	145			

3.1.2. Evaluation of individual tasks of education seekers.

Not provided by the curriculum.

3.1.3. Evaluation of the educational component "Modern computer training of a nurse".

The assessment of the educational component is determined by points for the PLC and ranges from 120 to 200 points.

Correspondence of grades on a 200-point scale according to the ECTS scale and to a four-point scale is shown in Table 2.

Table 2

Correspondence of grades on a 200-point scale to the ECTS scale and to a four-point (national) scale

Mark on a 200-point scale	Evaluation according to the ECTS scale	Score for four-point scale
180–200	A	Excellent
160–179	B	Good
150–159	C	Good
130–149	D	Satisfactorily
120–129	E	Satisfactorily
less than 120	F, Fx	Unsatisfactorily

An education seeker receives the mark "credit" in the credit-book if he scored from 120 to 200 points.

3.2. Questions for credit

Not provided for in the curriculum.

3.3 Questions for final control

1. The main types of computers.
2. The main components of a desktop computer.
3. Main types of external devices.
4. Structural diagram of a personal computer.
5. Principles of PC operation.
6. Modern operating systems.
7. Proprietary software.
8. Computer protection.
9. Text software from the world's leading suppliers

10. Table software from the world's leading suppliers
11. Presentation software from the world's leading suppliers
12. Use of the Internet
13. Review, search and critical evaluation of information obtained from the Internet
14. Digital transformation of healthcare in Ukraine
15. Coding, classification and standardization in medicine
16. Fundamentals of information security.
17. Protection of medical information
18. Medical information systems as a component of the electronic health care system
19. Communication in the digital environment and network etiquette
20. Internet addressing: IP address, domain name (DNS address); URL address.
21. Use of Internet services.
22. Principles of forming a search request. Types of search.
23. Search engines of general purpose.

3.4. Individual tasks

Not provided for in the curriculum.

3.5. Rules for challenging the assessment

If the student of higher education does not agree with the grade received at the class, he can appeal it. In this case, the knowledge of the student of higher education will be evaluated by a committee consisting of the head or head of the department, an independent teacher and the teacher of the group in which the student of higher education studies. In order to increase the grade, the teacher of the group can also offer the student of higher education to choose a topic for writing an essay.

4. EDUCATIONAL COMPONENT POLICY

For the successful assimilation of the educational component, it is necessary for the learner to systematically prepare for practical classes, perform the tasks offered for mastering the topics recommended for independent study, read the recommended literature, take an active part in discussing the topic of the class in the classroom / remotely.

Attending practical classes in the discipline is mandatory (except for good reasons). A class missed for any reason must be made up. It is unacceptable to be late for classes. By the time the class begins, the student must change into a medical gown. When communicating with the teacher and others, he should show courtesy, speak quietly and behave calmly.

5. ACADEMIC INTEGRITY

Observance of academic integrity by the student of education involves:

independent performance of educational tasks and tasks of final control of learning results; references to sources of information in the case of using ideas, statements, information; compliance with copyright legislation; providing reliable information about the results of one's own educational (scientific, creative) activities.

Plagiarism, plagiarism, cheating, falsification, etc. are considered violations of academic integrity.

For violations of academic integrity, students may be held liable for the following: retaking the assessment (final control, credit, etc.); repeated completion of the training course.

6. RECOMMENDED BOOKS

Basic

1. Radzishevska E. B., Vysotska O. V. Information technologies in medicine. E-health / edited by V. G. Kizhavka. Kharkiv: KhNMU, 2019. – 72 p.
2. Handbook of Biomedical Informatics
   URL: https://en.wikipedia.org/wiki/Book:Handbook_of_Biomedical_Informatics
3. E.H. Shortiffe. Biomedical Informatics: Computer Applications in Health Care and Biomedicine 4-th edition / Edward H. Shortiffe, James J. Cimino // New York: Springer. 2019. – 1037 p.
4. URL:
   https://books.google.ro/books?id=Wn-fFVuUguMC&printsec=frontcover&dq=medical+informatics&hl=ru&sa=X&ved=0ahUKEwis8v2jyvHaAhXBhSwKHQSNBVcQ6AEIWDAH#v=onepage&q=medical%20informatics&f=false
5. Updated model of training of nurses / Isaeva O.S./ Theory and methodology of professional education // Issue 12. Vol. 1. 2019.- P.98-101

Auxiliary

1. Ministry of Health of Ukraine. The concept of health care informatization. - Access mode: http://moz.gov.ua/article/reformplan/jak-bude-rozvivatisja-enealth-v-ukraini-prezentuvali-proekt-koncepciiinformatizacii-ohoroni-zdorovja. 2021.
2. On the necessity of familiarizing students of higher medical educational institutions with the ISRS-2 coding system / E.B. Radzishevska, O.V. Vysotska, S.S. Grankina and others. // Topical issues of higher medical education in Ukraine (with remote connection of the Ministry of Health of Ukraine by means of video conference communication): materials of the XV Vseukr. science and practice conf. from international with participation (Ternopil, May 17–18, 2018) / Ternopil. state honey. University named after I. Ya. Gorbachevsky. – Ternopil: TDMU, 2018. – P. 254

7. INFORMATIONAL RESOURCES

1. Link to the MOODLE web-page of the educational component: http://distance.knmu.edu.ua/enrol/index.php?id=5085
2. Page of the department of medical and biological physics and medical informatics on the university's website:
   https://knmu.edu.ua/departments/kafedra-medychnoyi-ta-biologichnoyi-fizyky-i-medychnoyi-informatyky/
3. Section of the department of medical and biological physics and medical informatics in the KhNMU Repository: http://repo.knmu.edu.ua/handle/123456789/162.

8. OTHER

Regulations on academic integrity and ethics of academic relations at the Kharkiv National Medical University
http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_ad_etyka_text.pdf
The procedure for conducting classes on in-depth study by students of the Kharkiv National Medical University of individual disciplines beyond the scope of the curriculum **http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/nak-poriad-pogl-vyv-dysc.docx**
Regulations on the Commission on Academic Integrity, Ethics and Conflict Management of the KhNMU
http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_komis_ad_text.pdf

Regulations on the recognition of the results of non-formal education at the Kharkiv National Medical University
http://files.knmu.edu.ua:8181/upload/redakt/doc_uchproc/polog_neform_osv.pdf
INCLUSIVE EDUCATION:
http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=7108%3A2021-03-10-14-08-02&catid=12%3A2011-05-10-07-16-32&Itemid=33&lang=uk
ACADEMIC INTEGRITY:
http://www.knmu.kharkov.ua/index.php?option=com_content&view=article&id=2520%3A2015-04-30-08-10-46&catid=20%3A2011-05-17-09-30-17&Itemid=40&lang=uk
http://files.knmu.edu.ua:8181