MINISTRY OF EDUCATION AND SCIENCE OF RUSSIAN FEDERATION

PENZA STATE UNIVERSITY

MEDICAL INSTITUTE

APPROVED
by director of the institute
A.N. MITROSHIN
03 2016 г.

SUBJECT'S (MODULE'S) SYLLABUS

C. 1.1.10 MEDICAL INFORMATICS

Program (specialty): 31.05.01- General Medicine

Graduate's qualification (degree): Medical-doctor

Studyformat: Full-time

Penza, 2016

1. Subject mastering goals

Main goals of mastering "Medical Informatics" are to achieve the aggregate results of education in the form of professional competencies necessary for mastering the subsequent academic disciplines and in professional activities of specialists and getting students the necessary knowledge of the software and hardware structure of a personal computer, the methods of processing, analyzing and presenting biomedical data using computer technologies, the basic principles of work in the worldwide computer network Internet, the use of the package in applications at the level of a qualified user.

The tasks of studying medical informatics are: obtaining basic computer skills; studying the main specialized software packages, mastering the methods of searching, storing, processing and analyzing information from various sources and databases, presenting it in the required format with the use of information, computer and network technologies; competent use of medical databases; the use of acquired knowledge and skills in their professional activities, in carrying out biomedical experiments and scientific and technical research.

2. Subject's place in bachelor MPEP's structure

The academic discipline refers to the basic part of the C1 block. The study of discipline is based on knowledge by students of the following disciplines: Physics, Mathematics.

The main provisions of medical informatics are necessary for the study of disciplines: Normal physiology, Pharmacology; Public health and health, Health Economics.

3. Student competences developed as a result of subject (module) mastering

Studying of the subject is intended to develop elements of the following competences according to FSES HE in the given field:

Codes of competences	Name of competence	Structural elements of the competence (as a result of the development of the discipline the student should know, be able and acquire)
1	2	3
GPC-1	be ready to solve typical problems in their professional activities using different information sources, medical terminology, computer technologies and complying with the demands of information security	Knowledge: the possibilities of using the main specialized software packages, modern ways of creating and editing graphic files and text documentation; existing methods of processing and presenting experimental data.
		Skills: independently apply knowledge to study specialized software packages, to work with various data.
		Working abilities: the skills to work with specialized software packages to solve professional problems.
SPC-20	be ready to analyse and submit for public assessment the medical data founded onevidence-based medicine	Knowledge: the basic statistical methods of processing medical and biological research.
		Skills: to use information resources, information and communication technologies for solving problems of professional activity.
		Working abilities: the skills of working with information and communication technologies.

4. Structure and content of subject (module) MEDICAL INFORMATICS

4.1. Subject's (module's) structure MEDICAL INFORMATICS

General work load of the subject totals 3 credit units, 108 hours.

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types *(by semester's weeks)*							
				Work in class				Out-of-class work												
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams	Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	other
1.	**Theoretical Foundations of Informatics**																			
1.1.	Introduction to Medical Informatics.	2	1	2	2															
1.2.	Theoretical bases of computer science.	2	1	2	2															
1.3.	The device and principles of operation of a personal computer.	2	2	2	2															
1.4.	Computer hardware.	2	2	2	2															
1.5.	Computer software.	2	3	2	2															
1.6	Medical information systems	2	3	2	2															
1.7	Medical information systems of a basic level	2	4	2	2															
1.8	Medical information systems of federal level	2	4	2	3															
2.	**The main software applications used to process, analyze and present biomedical data**																			
2.1.	Operating system Windows.	2																		

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types *(by semester's weeks)*							
				Work in class				Out-of-class work												
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams	Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	other
2.1.1	Basic functions of operating systems	2	5	3		3									5					
2.1.2	File system	2	5	3		3		1	1									5		
2.1.3	Working with files and folders	2	6	2		2														
2.1.4	Toolkit Windows.	2	6	3		3		1	1				6							
2.2	Word Processors.	2																		
2.2.1.	The purpose and interface of a word processor	2	7	3		3		1	1						7					
2.2.2.	Formatting the document	2	7	3		3		1	1											
2.2.3	The operations of copying, moving and deleting a piece of text	2	8	2		2		1	1									8		
2.2.4	The possibilities of a word processor for automation of work technology	2	8	3		3		1	1											
2.2.5	Creation of integrated documents	2	9	3		3		1	1				9							
2.2.6	Creating and editing graphic images	2	9	3		3		1	1											
2.3	Table processors.	2																		
2.3.1.	Table Processor Interface	2	10	2		2		1	1						10					

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types *(by semester's weeks)*							
				Work in class				Out-of-class work												
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams	Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	other
2.3.2.	Data stored in spreadsheet cells	2	10	2		2		1	1									10		
2.3.3	New workbook settings	2	11	2		2		1	1											
2.3.4.	Automatic change of relative references when copying and moving formulas	2	11	3		3		1	1				11							
2.3.5	Editing and formatting charts	2	11	3		3		1	1									11		
2.3.6	Data lists and sorting	2	12	2		2												12		
2.3.7	Data collection	2	12	3		3		1	1											
2.4	Presentation preparation programs.	2																		
2.4.1	The main functionality of the MS PowerPoint presentation preparation program	2	13	2		2		1	1						13					
2.4.2.	Processing of bitmaps using graphical editors	2	13	3		3		1	1									13		
2.5	Database management systems	2																		
2.5.1	Functionality of DBMS	2	14	2		2		1	1				14							
2.5.2	Creating a single-table database	2	14	2		2		1	1						15					
2.5.3	Forming queries and reports for a single-table database	2	15	3		3		1	1											

№	Subject's (module's) sections and topics	Semester	Semester's weeks	Types of learning, including students' out-of-class work and workload (in hours)									Current progress monitoring types *(by semester's weeks)*							
				Work in class				Out-of-class work												
				Total	Lecture	Practice	Laboratory work	Total	Preparing for class work	Papers, essays etc.	Course work (project)	Preparing for exams	Interview	Spoken test	Test marking	Check work marking	Paper marking	Marking of essays and other creative works	Course work (project)	other
2.5.4	Creating a relational database structure	2	15	3		3		1	1									15		
2.6.	Computer telecommunications in medicine	2																		
2.6.1	Working in global networks	2	16	2		2		1	1						16					
2.6.2	Medical applications of computer networks	2	16	2		2		1	1									16		
	Final lesson	2	17	4		4		1	1											
	General workload, in hours			85		68		23	23				Interim attestation							
													Type					Semester		
													Test					*2*		

4.2. Subject's (module's) contents

Theoretical Foundations of Informatics

Concept of medical informatics . Brief historical background.

Design and principles of a personal computer.

Elements of computer engineering.

Basic computer equipment. Representation of the data in the computer.

Classification of computers. Composition of the computer system.

Computer hardware.

The basic building blocks of the computer. Basic functional unit of the computer.

Computer software.

Software layers. Applied general purpose programs.

Concept of computer network. Features of the organization of local area networks.

Main software applications used for processing, analysis and presentation of biomedical data.

System software.

Operating system (OS) Windows.

Basic functions of operating systems. File system. The main features of Windows. Toolkit Windows. Work with files and folders.

Application software.

The word processor.

The main functionality of word processors. Word MS Word Processor: creating and editing documents, formatting a document, presenting information in a tabular form, creating integrated documents, creating and editing graphic images.

The table processor.

The main functionality of table processors. MS Excel spreadsheet: setting up a new workbook; creation and filling of the table with permanent data and formulas; building, editing and formatting diagrams; lists and sorting of data; data sampling.

Computer telecommunications in medicine.

Fundamentals of computer communications. Work in global networks. Medical applications of computer networks.

Presentation preparation programs.

Functional capabilities of MS PowerPoint presentation preparation program. Create a presentation based on the template. Image processing using the MS Photo Editor. Create a presentation using your own graphic images.

Database management system (DBMS).

Basic concepts. Functionality of the DBMS. MS Access: creating a single-table database; generation of queries and reports for a single-table database; the development of an infologic model and the creation of a relational database structure.

5. Education technologies

In order to implement an individual approach to teaching students who carry out the learning process on their own trajectory within the framework of an individual work plan, the study of this discipline is based on the following possibilities: providing out-of-class work with students including in the electronic educational environment using appropriate software equipment, distance learning forms , the possibilities of Internet resources, individual consultations, etc.

Teaching discipline is conducted with the application of the following types of educational technologies:

1) the use of electronic educational resources (assignments for practical classes, methodological materials) in preparation for practical classes;

Topic 1.1-1.8; 2.1-2.6.

2) the use of computer technology in all practical exercises;

Topic 1.1-1.8; 2.1-2.6.

3) test knowledge control;

Topic 1.1-1.8; 2.1-2.6.

4) individual consultations of the teacher when performing assignments for practical classes

and group consultations before testing for each section of the discipline;

Topic 1.1-1.8; 2.1-2.6.

5) individual training of excellent students on the basis of the formation of an individual program for discipline, taking into account the interests of students;

Topic 1.1-1.8; 2.1-2.6.

6) participation of students in scientific research;

Topic 1.1-1.8; 2.1-2.6.

5.1 Active Learning Methods

• "Lecture-visualization" is a visual form of presentation of a lecture material by means of TCO or audio-video equipment;

Theme 2.1 - Windows operating system;
Topic 2.2 - Word Processors;
Topic 2.3 - Table processors;
Topic 2.4 - Presentation preparation programs;
Topic 2.5 - Database management systems;
Topic 2.6 - Computer telecommunications in medicine.

• Case-study method or method of concrete situations (from English case - case, situation) - the method of active problem-situational analysis, based on learning by solving specific tasks-situations;

Theme 2.1 - Windows operating system;
Topic 2.2 - Word Processors;
Topic 2.3 - Table processors;
Topic 2.4 - Presentation preparation programs;
Topic 2.5 - Database management systems;
Topic 2.6 - Computer telecommunications in medicine.

• The decision of situational / program tasks allows to reveal a level of knowledge of a material and develops at students skills of use of knowledge in a concrete situation;

Theme 2.1 - Windows operating system;
Topic 2.2 - Word Processors;
Topic 2.3 - Table processors;
Topic 2.4 - Presentation preparation programs;
Topic 2.5 - Database management systems;
Topic 2.6 - Computer telecommunications in medicine.

6. Educational and methodological support of students' out-of-class work. Assessment means for current progress monitoring, interim attestation of subject mastering results

Control of the discipline development is carried out according to the methodology and schedule of the rating assessment of students' knowledge (instruction I.151.1.02 - 2009), approved by the head of the department.

The current control of students' progress is conducted by the teacher conducting the lesson, in the form of monitoring the timeliness and correctness of the student's typical tasks at each practical lesson in discipline, computer testing and student protection of the report.

A graduate student attestation is conducted after the completion of the next section of the discipline in the following forms:

computer testing.

Control of the development of the academic discipline on the basis of the semester results is conducted by the teacher in the following forms:

Test.

6.1. Plan of students' individual work

№	Topic	Out-of-class work type	Task	Recommended literature	Amountofhours
1	Operating system Windows	Preparation for lecture classes	To study the material of the methodical manual Answer test questions	Basic 1, 2 Add. 1	2
			Complete the assignment for practical work		
2	Word Processors	Preparation for lecture classes	To study the material of the methodical manual Answer test questions	Basic 1, 2 Add. 1	6
			Complete the assignment for practical work		
3	Table processors	Preparation for lecture classes	To study the material of the methodical manual Answer test questions	Basic 1, 2 Add. 1	6
			Complete the assignment for practical work		
4	Presentation preparation programs	Preparation for lecture classes	To study the material of the methodical manual Answer test questions	Basic 1, 2 Add. 1	2
			Complete the assignment for practical work		
5	Database management system	Preparation for lecture classes	To study the material of the methodical manual Answer test questions	Basic 1, 2 Add. 1	4
			Complete the assignment for practical work		
6	Computer telecommunications in medicine	Preparation for lecture classes	Complete the assignment for practical work	Basic 1, 2 Add. 1	2
			Complete the assignment for practical work		

6.2. Instructional guide lines on students' out-of-class work organization

Preparation for lecture classes

1. Read the theory from the guidelines, lectures, textbooks;
2. Answer the control questions in the guidelines for practical exercises;
3. To issue a report on the previous practical work.

6.3. Materials to carry out current monitoring and interim attestation of students' knowledge

Control development of competencies

№	type of control	Controlled section	Competence, the components of which are controlled
1.	Checking the execution of a practical task	Section 2	GPC-1, SPC-20
2.	Testing	Section 1,2	GPC-1, SPC-20
3.	Interviewing	Section 1,2	GPC-1, SPC-20

Demonstrative test variant

1. The function of the operating system is ...

A. Ensuring the implementation of system and application programs
B. Support of computer peripherals
B. File system support
D. Processing of programs

2. What is displayed on the screen immediately after the Windows operating system is booted?

A. System menu
B. Control panel
B. The taskbar
G. Working table

3. The document window in Windows OS contains:

A. Status bar
B. Workspace
B. Vertical and horizontal scroll bar
D. Toolbar
D. System menu button

4. How does the scale of the MS Word document display affect the printing of a document?

A. Increases font size when printing
B. Influences have no effect
B. Increases the size of the images when printing
D. Requires page size changes

5. In what way can you ensure that the last line of MS Word text does not go to the next page, and all the text would be placed on one page?

A. Select File> Preview> Adjust Pages
B. Decrease font size throughout the document
B. Select the command Format> Paragraph> Position on page> Disable fading lines
D. Select the command Format> Paragraph> Position on the page, clear the check box Do not automatically wrap words

6. Filtering in MS Excel can be performed using:

A. The composite filter
B. autofilter
B. simple filter
D. Extended Filter

7. MS Excel charts are built on the basis of:
A. Active MS Excel Workbook
B. data tables
B. selected cells of the table
G. Worksheet worksheet MS Excel
8. A spreadsheet cell is defined:
A. Column names
B. the intersection of rows and columns
B. row numbers
User-defined name
9. Mathematical functions of table processors are used for:
A. constructing logical expressions
B. Determining the amount of monthly payments to repay the loan, calculating depreciation rates
The calculus of logarithms, trigonometric functions
D. Calculation of the mean, minimum, maximum
10. Which of the following are the objects in the spreadsheet?
A. Chart
B. Block of cells
B. The string
D. Request
D. Column
E. Registration number
J. Book
11. The ordering of values for a range of cells is called:
A. Formatting;
B. filtration;
V. grouping;
G. sorting.
12. In the presentation you can use:
A. digitized photos;
B. soundtrack;
B. documents prepared in other programs;
D. All of the above.
13. The information revolution is:
A. Transformation of public relations because of cardinal changes in the sphere of information processing
B. the possibility of a person to receive in full the information necessary for his life and professional activity
V. radical transformation of the dominant technological order in society
G. military actions for information
D. change in the ways of forming and using the aggregate intellectual potential of society
14. The information picture of the world is:
A. The most common form of reflection of physical reality, performing a generalizing, systematizing and worldview function
B. developed by society and intended for general consumption way of reproduction of the human environment
B. a generalized image of the movement of social matter
G. a set of information that allows you to adequately perceive the surrounding world and exist in it
D. stable theoretical education for explaining the phenomena of the surrounding world on the basis of fundamental physical ideas.
15. Third Generation Computer:
A. had as an element base electronic tubes; characterized by low speed, low reliability; programmed in machine codes
B. had as an element base semiconductor elements; programmed using algorithmic languages

V. had integrated circuits as an element base; were able to access from remote terminals;
G. had as a base element large integrated circuits, microprocessors; relatively cheap;
D. had as an element base the extremely large integrated circuits; were able to model human intelligence.

16. In what year was the first national computer created - MESM under the leadership of SA. Lebedev?

A. In the year 1950
B. In 1959 year
B. In 1961 year
G. In 1991

17. What quality of information is associated with its semantic content (semantics) and pragmatics?

A. Sufficiency
B. Adequacy
B. Accessibility
D. Accuracy
D. Credibility

18. What is the program?

A. An ordered computing system
B. An ordered sequence of commands for the computer
B. An orderly sequence of instructions for the computer
D. All of the above

19. What is the non-position number system?

A. Set of symbols and rules for the designation and naming of numbers
B. A system in which each quantitative equivalent - the value of each symbol - does not depend on its position in the code number
B. A system in which a quantitative equivalent, the value of a symbol depends on its place (position) in the code number
D. There is no correct answer

20. What is computer technology?

A. It is an electronic device that works in the program and is designed to automate the creation, storage, processing and transport of data.
B. A set of devices designed for automatic or automated processing of data.
B. A specific set of interacting devices and programs, designed to maintain one workplace or section
D. There is no correct answer

21. What determines the maximum number of rows and columns?

A. From the features of the program used.
B. From the amount of computer memory.
V. Does not depend on anything.
D. There is no correct answer.

20. Which elements of the application window are specific (not used in other applications) for Excel?

A. Toolbar.
B. The row of formulas.
B. The status line.
D. The menu bar.
D. Area of sheet management.
E. Scroll bars.

22. In the list of functions, indicate the functions related to the statistical category:

A. MIN (), MAX (), AVERAGE ().
B. MIN (), MAX (), SUM ().
B. SUM (), MAX (), IF ().
G. MAX (), MIN (), IF ().

23. Which of the following formatting options can be configured in the Font dialog box?

A. Select the language used.
B. The color of the symbols.
B. The distance between the symbols.
G. Inscription.

24. How can I start the numbering of MS Word document pages from the 13th?

A. You can start numbering from any page number, for this, in the first line of the first printed sheet, you need to dial the desired number and then correctly align it.
B. It is impossible, the numbering of pages should begin with the number 1.
Q. You can do this by using the Insert → Page Numbers ... command.
D. You can, for this you need to use the command Format → Page numbers ...

25. With what help do you set the boundaries of paragraphs?

A. Using indentation markers on the coordinate line.
B. Using the appropriate menu commands.
Q. All the answers are correct.

26 What are the main data types supported by the MS Excel spreadsheet:

A. Text, numeric;
B. formulas, text, numeric;
V. numerical, formulas, date-time, text;
D. Text, numeric, percentages, formulas, functions

27. What is the result of computing an arithmetic formula?

A. Cell.
B. Cell address.
B. The number.
D. There is no correct answer.

28. What coding is based on data representation by a sequence of two characters 0 and 1?

A. Binary coding
B. Tertiary coding
Q. There is no correct answer
D. Positional coding

29. What is Kbyte?

A. 1024 bytes
B. 124 bytes
V. 2^{24} bytes
G. 2^{10} bytes

30. What are browsers?

A. Software designed for viewing electronic documents executed in HTML format
B. Software designed for viewing electronic documents in txt format
B. Software for editing electronic documents in HTML format
D. There is no correct answer

31. Where did the term "computer science" come:

A. France
B. America
W. England
G. Germany
D. Spain

Criteria for evaluating the test

"Excellent" ("5") - 91% and more correct answers to test tasks.
"Good" ("4") - 81-90% of correct answers to test tasks.
"Satisfactory" ("3") - 71-80% of correct answers to test tasks.
"Poor" ("2") - 70% or less of correct answers to test questions.

Demonstrative questions for control tasks

Theoretical Foundations of Informatics

1. The concept of medical informatics.
2. Basic means of computer technology.
3. Classification of computers.
4. The main functional devices of the computer.
5. General application programs.

The main software applications used to process, analyze and present biomedical data

1. Operating system Windows.
2. Compression of information. Functionality of archiver programs.
3. Computer malicious programs, methods and means to combat them.
4. Purpose and interface of the word processor.
5. The concept of a database and a database management system.

Demonstrative practical tasks

Word Processors

1. Download the Word word processor;
2. Set the pagination mode of the document on the screen;
3. Set the main parameters (font type and size, text alignment method), which will be set by default when entering text;
4. Type the following text without pressing <Enter>:

Ladies and gentlemen! Visit the website "Medical information resources of the Penza region". Here you will find information about the healthcare system of the Penza region, the official website of the Medical Institute of Penza State University, a medical library containing electronic textbooks, scientific articles, books, thematic reviews of literature, conference proceedings, educational literature and much more. Our address in the Internet: http://medic.pnzgu.ru.

5. Save the typed text in the file named Text1. Note the difference between the Save As ... and the Save command;
6. Close the document;
7. Open the document;
8. Close the document;
9. Learn how to leave the Word environment.

Table processors

As an example of a table, an examination sheet is considered (Figure 9). For each group, generic lists are created that contain the lists of students (last name, first name, patronymic, number of the record book) and their grades in the exam.

In this task, it is required to prepare an electronic examination sheet for each group based on the table created in work 1 (see Figure 9).

In any table, you can always select at least two structural parts -name and its cap.

The table name is entered into any cell and is formatted with fonts.

Formation of the table header is recommended in the next sequences:

• Define the way to align the name of the graph (for large texts it is necessary to provide word wrapping);
• in each cell of one line enter the names of the table graphs;
• set the width of each column of the table.

After completing the design of the table header, enter in the table the permanent data:

• the names of students and their grades in a particular discipline;
• headers at the bottom of the table for totals that will be counted later when task 3 is completed.

After the completion of the work on filling the statement with permanent data remember it as a workbook.

For a better understanding of the technology work in Excel, do the training. To do this,

perform all the operations indicated in the table above.

EXAMINATION LIST

Group № _____ Discipline _____

№	The Surname, a name, a patronymic	№ Record book assessment	Assessment	The Signature of the examiner

Computer telecommunications in medicine

Configuring the browser:

1. Read the contents of the browser menu items;
2. Learn to open the browser window to the full screen and minimize it to its previous size;
3. Learn how to configure the browser home page;
4. Learn how to configure temporary Internet files.

Presentation preparation programs

1. Create a presentation based on one of the Power Point template;
2. Replace the standard text in the template slides with your text;
3. Select the modes for changing (transitioning) slides on the screen by setting:

• slide transition sound effects;
• animation effects of both the slides themselves and their objects;
• time in automatic mode.

4. Save the slide film in your working folder in two formats - presentations and demonstrations;
5. Launch the slideshow in presentation mode and adjust slideshow time intervals, animation and sound effects;
6. Run the slideshow in demo mode.

Database management systems

Develop a logical model of a relational database (DB) in the subject area in accordance with an embodiment consisting of three related tables containing at least five different types of fields each. Developed on the basis of the logical model to create a database using the database management system MS Access, comprising:

- Data entry form for each table in the database;
- Two simple query on data select;
- At least three reports with grouping data;
- Switchboard menu containing buttons for opening all elements created database (tables, queries, reports).

For one of the database tables, set the condition for the field value and the default field value, fill in the database tables (enter at least 10 entries into each table). Perform operations of searching, sorting and filtering data in the fields of the table and using a form.

Examples of data for building databases should be offered independently from the subject area issued by the teacher.

Criteria for assessing practical skills

10 points - 91-100% of correctly performed tasks.
9 points - 81-90% of correctly performed tasks.
8 points - 71-80% of correctly performed tasks.
7 points - 61-70% of correctly performed tasks.
0 points - 60% or less correctly performed tasks.

Demonstrative test questions

Theoretical Foundations of Informatics

1. The concept of medical informatics.
2. Basic means of computer technology.
3. Classification of computers.
4. The main functional devices of the computer.
5. General application programs.

The main software applications used to process, analyze and present biomedical data

1. Operating system Windows.
2. Compression of information. Functionality of archiver programs.
3. Computer malicious programs, methods and means to combat them.
4. Purpose and interface of the word processor.
5. The concept of a database and a database management system.

Criteria for evaluating answers to theoretical questions

6 points	the student deeply understands the material he has passed, answers clearly and comprehensively, knows how to evaluate the facts, independently argues, is distinguished by the ability to justify the conclusions and explain them in a logical sequence.
5 points	the student deeply understands the material he has covered, answers clearly and comprehensively, knows how to evaluate the facts, independently argues, is distinguished by the ability to substantiate the conclusions and explain them in a logical sequence, but allows for some inaccuracies and errors of a general nature.
4 points	the student understands the material well, but can not theoretically substantiate some conclusions.
3 points	in the student's answer there are significant shortcomings, the material is partially covered, mistakes are allowed in the reasoning.
2 points	The student's answer is correct only partially, serious mistakes are made when explaining the material.
1 point	the student has a general idea of the topic, but does not know how to substantiate his thoughts logically or has only a partial idea of the topic.
0 points	no answer.

- **"credit"** is set for the student if the total amount of the rating scores is 60-100;
- **"not credit"** is given to the student if the total score is less than 60.

7. Educational, methodological and informationalmeans provided for subject (module) MEDICAL INFORMATICS

a)) basicliterature:

1. Glandon, Gerald L.-Slovensky, Donna J.-Smaltz, Detlev H.. Information Systems for Healthcare Management – Health Administration Press, 2014. – www.bibliocomplectator.ru

2. Hasman, Arie-Mantas, J.. Informatics, Management and Technology in Healthcare– IOS Press, 2013. – www.bibliocomplectator.ru

b) additionalliterature:

1. Brown, Gordon D.-Pasupathy, Kalyan S.-Patrick, Timothy B. Health Informatics– Health Administration Press, 2012. – www.bibliocomplectator.ru

c) Online resources

1. The licensed version of the Operating System Windows 7
2. The licensed version of Kaspersky Anti-Virus
3. Freely distributed Open Office application package.
4. Electronic library system - www.bibliocomplectator.ru

8. Material and technical means provided for subject (module) MEDICAL INFORMATICS

№	Name of special premises and premises for independent work	The equipment of special rooms and premises for independent work
1.	Audience 10-106, 10th building	Personal computers, tables, chairs

The work program of subject "Medical Informatics" was composed incompliance with requirements of FSES HE for the educational program 31.05.01 General medicine.

The program was compiled by:

Geraschenko Michael Sergeevich, assistant of the Department of "Medical Cybernetics and Informatics" _____

The present program cannot be reproduced in any form without the preliminary written permission of the developer of the program.

The Program is approved at a meeting of sub-department of "Medical Cybernetics and Informatics"

Report № 8.1 from « 4 » 03 2016

Head of sub-department "Medical Cybernetics and Informatics" _____ S. I. Geraschenko

The program was agreed with the Dean of the General medicine Faculty

Dean of the General medicine Faculty _____ I.Ya. Moiseeva

The program was approved by the methodological committee of Medical Institute

Report № 7 from « 5 » 03 2016

Head of the methodological committee of Medical Institute _____ O.V. Kalmin

Information on altering the program data for the forthcoming academic year and registration of changes

Учебный год	Решение кафедры (№ протокола, дата, подпись зав. кафедрой)	Внесенные изменения	Номера листов (страниц)		
			заменен-ных	новых	аннулиро-ванных
2016-2017	Протокол №1 от 12.09.16	Переутверждена на новый учебный год без изменений			
2016-2017	Протокол №11 от 23.05.17	Изменена квалификация выпускников	1		
2017-2018	Протокол №1 от 05.09.17	Добавлено в п.5 описание применения образовательных технологий к обучающимся с ограниченными возможностями здоровья и - инвалидам	7,8		
2017-2018	Протокол №1 от 05.09.17	Переутверждена на новый учебный год без изменений			