

Документ подписан простой электронной подписью

Информация о владельце:

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Должность: и.о. декана медико-биологического факультета

Дата подписания: 20.10.2026 10:11:25

Уникальный программный ключ:

bbc0243907972fc80f279c67afb4501106151a7d

MINISTRY OF SCIENCE AND HIGHER EDUCATION

RUSSIAN FEDERATION

Federal State Autonomous Educational Institution of Higher Education

NORTH-CAUCASUS FEDERAL UNIVERSITY

APPROVED

Assoc. Prof. Kubanov S.I.

PhD in Medical Sciences

Dean Faculty of Medicine and Biology

ASSESSMENT TOOLS FUND FOR THE DISCIPLINE

Introduction to Information Technologies

Name of the discipline (module)

- Specialty: 31.05.01 General Medicine
- Mode of training: Full-time
- Year of commencement of studies: 2026
- Delivered in Semester 2, 3

Introduction

1. Intended for carrying out current control of academic performance progress and intermediate attestation in the discipline of Introduction to Information Technologies for students of the specialty (majoring in) 31.05.01 General Medicine.
2. The ATF is an appendix to the program of the discipline (module) Introduction to Information Technologies
3. Developer(s): Babenko Mikhail Grigorievich, head of the department of Computational Mathematics and Cybernetics
4. Expert examination of the ATF has been completed.

Expert group:

Chairperson: S.I. Kubanov, Associate Professor of the Department of Surgery, Orthopedics and Traumatology

Committee members:

G.S. Ivchenko, Acting Head of the Department of Propaedeutics of Internal Diseases

S.M. Kotelevets, Professor of the Department of Propaedeutics of Internal Diseases

5. Employer organization representative: Vilensky I.L., Chief Physician of Independent CDL, LLC

Expert conclusion – the ATF allows evaluating the level of competency levels and is recommended to be employed in the educational process.

6. The validity period for the ATF shall be determined by the period of implementation of the educational program.

1. Description of Evaluation Criteria at Various Stages of Their Formation, Description of Evaluation Scales

Levels of formation of competence(s), indicator(s)	Descriptors			
	Minimum level not achieved (Unsatisfactory) 2 points	Minimum level (Satisfactory) 3 points	Intermediate level (Good) 4 points	High level (Excellent) 5 points
Competency GPC-1				
Competence: GPC-1. Capable of applying information technologies and software tools in solving professional tasks. Learning Outcome for the Discipline: Able to use a word processor for creating, formatting and structuring documents, apply automation tools and information verification. Indicator: GPC-1.2. Uses office suite tools for processing textual, numerical and graphical information.	The student does not know the basic elements of the word processor interface, is unable to create and format documents. Cannot structure text, create tables or insert graphic objects. Is not familiar with automation tools (table of contents, headers and footers, footnotes). Makes gross errors when saving documents in various formats.	The student knows the basic features of a word processor, is able to create simple documents, format fonts and paragraphs. Can insert a table or image, but experiences difficulties with their adjustment. Can create a simple table of contents, but does not always update it correctly. Makes occasional errors in document formatting according to standards.	The student confidently masters the main functions of a word processor. Can create structured documents using styles, automatic tables of contents, headers and footers, and hyperlinks. Is able to insert and format tables, graphic objects, charts. Applies basic spell-checking tools. Understands the requirements for academic document formatting and generally adheres to them.	The student possesses an excellent command of advanced word processor features. Independently uses macros to automate routine operations, applies mail merge. Creates complex combined documents with tables, graphics and charts. Configures collaboration in cloud services. Impeccably formats documents according to any standards, uses templates. Demonstrates a high level of digital literacy and readiness for professional activity.
Competency GPC-10				
Competence: GPC-10. Capable of applying modern information technologies and specialized software in professional activities (including in	The student does not know the purpose of medical information systems. Has no understanding of electronic health records (EHR) or the principles of handling personal	The student has a general understanding of medical information systems. Can find information in recommended medical databases using simple queries. Knows	The student confidently works with medical information systems and knows the procedure for maintaining an electronic record. Effectively uses search queries in	The student is fluent in various medical information systems and can adapt to new software. Uses advanced database features. Applies statistical processing methods

medicine and healthcare). Learning Outcome: Able to work with medical information systems, electronic health records, medical databases, and statistical tools for processing patient data and preparing reports. Indicator: GPC-10.1. Uses medical information systems (MIS) and databases for handling patient data and statistical reporting.	data. Cannot use search tools in medical databases (PubMed, eLibrary). Lacks skills in working with statistical packages (or Excel) for processing medical data. Makes gross errors when entering and coding diagnoses (ICD-10/11).	the structure of an electronic health record but has difficulties filling out some sections. Can create simple tables in Excel for collecting statistical data, but makes mistakes in formulas and report formatting. Is familiar with the main ICD codes but may be inaccurate.	scientific databases (PubMed, CyberLeninka) to solve professional tasks. Has skills in statistical analysis of medical data using MS Excel (pivot tables, charts). Correctly applies the International Classification of Diseases (ICD-10) when filling out documentation. Complies with information security and personal data protection requirements.	using specialized packages. Independently creates complex reports and analytical extracts. Critically evaluates the reliability of information in digital sources. Understands the basics of telemedicine and digital ethics. Demonstrates readiness to work in the Unified State Health Information System (USHIS) of the Russian Federation.
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The evaluation of the competency formation level in the discipline is carried out on the basis of the Regulations on conducting current control of academic progress and intermediate attestation of students in higher education educational programs – Bachelor’s programs, Specialist’s programs, Master’s programs – at the Federal State Autonomous Educational Institution of Higher Education NORTH-CAUCASUS FEDERAL UNIVERSITY in its current edition.

ASSESSMENT TOOLS FOR CHECKING THE LEVEL OF COMPETENCY DEVELOPMENT

Task Number	Correct Answer	Content of the Question	Competency
1	B) To store, process and manage patient data electronically	What is the primary purpose of a Medical Information System (MIS)? A) To replace all doctors with artificial intelligence B) To store, process and manage patient data electronically C) To create word processing	GPC-10

		documents D) To design medical equipment	
2	B) ICD-10	Which international classification is used for coding diagnoses in Russia? A) SNOMED CT B) ICD-10 C) LOINC D) DSM-5	GPC-10
3	B) Electronic Health Record	What does EHR stand for in medical informatics? A) Electronic Hospital Register B) Electronic Health Record C) Emergency Health Response D) Extended Healthcare Report	GPC-10
4	B) SPSS	Which of the following is a specialized statistical software package used for medical data analysis? A) Microsoft Word B) SPSS C) Adobe Photoshop D) AutoCAD	GPC-10
5	B) To integrate healthcare data across all regions of the Russian Federation	What is the main function of the Unified State Health Information System	GPC-10

		(USHIS / ЕГИСЗ) in Russia? A) To manage hospital cafeteria menus B) To integrate healthcare data across all regions of the Russian Federation C) To design new medical devices D) To replace paper prescriptions	
6	B) PubMed	Which of the following is a reliable open-access medical database for scientific literature search? A) Vkontakte B) PubMed C) Wikipedia D) RuTube	GPC-10
7	A, B, D	Which of the following are functions of a typical Medical Information System (MIS)? (Select all that apply) A) Maintaining electronic health records B) Scheduling appointments and managing patient flow C) Editing video files	GPC-10

		D) Generating statistical reports for healthcare management	
8	A, B, C	Which of the following are examples of personal data that must be protected when using medical information systems? (Select all that apply) A) Patient's full name and date of birth B) Patient's address and phone number C) Diagnosis and medical history D) Hospital room number only (without patient name)	GPC-10
9	A, B, C	Which of the following tools can be used for statistical analysis of medical data? (Select all that apply) A) Microsoft Excel (with Analysis ToolPak) B) SPSS C) Statistica D) Microsoft Paint	GPC-10
10	A, B, D	What are the key principles of telemedicine? (Select	GPC-10

		all that apply) A) Remote consultation between doctor and patient B) Use of secure communication channels C) Complete replacement of in-person visits D) Compliance with medical ethics and data privacy	
11	A, C	Which of the following are components of the Unified State Health Information System (USHIS / ЕГИСЗ)? (Select all that apply) A) Federal electronic health record B) Social media platform C) Regional medical information systems connected to federal nodes D) Online gaming portal	GPC-10
12	A, B, D	Which of the following are correct requirements for filling out an electronic health record (EHR)? (Select all that apply)	GPC-10

		A) Entries must be accurate and complete B) Each entry must be timestamped and authenticated C) Entries may be made using any nickname D) Corrections must be documented without deleting original information	
13	ICD (or ICD-10)	The international standard for classifying diseases and health problems is abbreviated as _____.	GPC-10
14	Electronic Health Record (or EHR)	The electronic analogue of a patient's paper chart in a healthcare facility is called the _____.	GPC-10
15	ЕГИСЗ (or USHIS)	The Russian national system that integrates all regional healthcare data is known by the abbreviation _____.	GPC-10
16	personal	To protect patient data, all medical information systems must comply with the law on _____ data.	GPC-10
17	AVERAGE	The statistical function in MS Excel	GPC-10

		that calculates the average value of a range is called _____.	
18	circulatory	In the ICD-10 classification, the block "I" refers to diseases of the _____ system.	GPC-1
19	1 → 2 → 3 → 4 → 5	Arrange the steps for creating a new patient record in a typical MIS in the correct order: 1) Enter patient's demographic data (name, DOB, address) 2) Assign a unique medical record number 3) Record the reason for visit and chief complaint 4) Add diagnosis and treatment plan 5) Save the record and confirm with an electronic signature	GPC-1
20	1 → 2 → 3 → 4	Arrange the steps for searching for scientific articles in PubMed in the correct order: 1) Go to the PubMed website 2) Type keywords or	GPC-1

		MeSH terms into the search bar 3) Apply filters (e.g., publication date, article type) 4) Open and download relevant articles	
21	1 → 2 → 3 → 4	Arrange the steps for performing a basic statistical analysis of medical data in MS Excel in the correct order: 1) Enter raw data into columns 2) Use the Analysis ToolPak or formulas (e.g., AVERAGE, STDEV) 3) Interpret the calculated results 4) Create charts or tables for presentation	GPC-10
22	1 → 2 → 3 → 4	Arrange the steps for coding a diagnosis using ICD-10 in the correct order: 1) Find the disease in the ICD-10 alphabetical index 2) Verify the code in the tabular list 3) Apply any additional codes for complications or	GPC-10

		manifestations 4) Enter the final ICD-10 code into the EHR	
23	1 → 2 → 3 → 4 → 5	Arrange the steps for conducting a remote telemedicine consultation in the correct order: 1) Schedule the consultation with the patient 2) Verify patient identity and informed consent 3) Conduct the video consultation and collect symptoms 4) Make a diagnosis and prescribe treatment (if appropriate) 5) Document the consultation in the EHR	GPC-10
24	1 → 2 → 3 → 4	Arrange the steps for generating a monthly statistical report on hospital admissions in a MIS in the correct order: 1) Set the time period (month) for the report 2) Select the required data fields (admissions, diagnoses, outcomes)	GPC-10

		3) Run the report generation module 4) Export the report to PDF or Excel and submit to management	
25	A-2, B-3, C-1, D-4	Match the medical information system with its primary function: Left: A) MIS (Medical Information System) B) EHR (Electronic Health Record) C) ICD-10 D) Telemedicine platform Right: 1) Coding of diseases and health problems 2) Patient data storage and management 3) Digital version of a patient's medical history 4) Remote medical consultations	GPC-10
26	A-1, B-2, C-3, D-4	Match the data analysis tool with its typical use in medicine: Left: A) SPSS B) MS Excel (pivot	GPC-1

		tables) C) Statistica D) GraphPad Prism Right: 1) Advanced statistical modeling and analysis 2) Summarizing hospital admission data 3) Multivariate analysis and visualization 4) Biomedical graphing and statistical tests	
27	A-2, B-3, C-4, D-1	Match the Russian regulatory term with its English equivalent: Left: A) ЕГИСЗ B) МКБ-10 C) ЭМК (электронная медицинская карта) D) Федеральный закон № 152-ФЗ Right: 1) Personal Data Law 2) Unified State Health Information System 3) ICD-10 4) Electronic Health Record (EHR)	GPC-1

28	A-1, B-2, C-3, D-4	Match the type of medical data with its source: Left: A) Laboratory test results B) Radiological images C) Patient demographics and visits D) Prescription and pharmacy data Right: 1) LIS (Laboratory Information System) 2) PACS (Picture Archiving and Communication System) 3) MIS (Medical Information System) 4) Pharmacy Information System	GPC-10
29	A-1, B-2, C-3, D-4	Match the step of statistical analysis with its description: Left: A) Data collection B) Data cleaning C) Data analysis D) Data interpretation Right: 1) Gathering patient data from EHR or	GPC-10

		databases 2) Removing outliers and correcting errors 3) Applying statistical tests to find patterns 4) Drawing conclusions and clinical implications	
30	A-2, B-1, C-3, D-4	Match the telemedicine component with its description: Left: A) Store-and-forward B) Real-time consultation C) Remote patient monitoring D) Mobile health Right: 1) Real-time video consultation 2) Transmission of images/records for later review 3) Continuous tracking of vital signs at home 4) Use of smartphones and apps for health support	GPC-10

2. Description of the Evaluation Scale

Within the framework of the rating system, students' academic progress in each discipline is evaluated during current control and intermediate attestation. The rating system for assessing students' knowledge is based on the use of a combination of control activities to check the covered material (checkpoints), optimally located throughout the entire time interval of studying the discipline. The principles of the rating system for assessing students' knowledge are

based on the requirements described in the Regulations on the organization of the educational process based on the rating system for assessing students' knowledge at NCFU.

3. Criteria for Evaluating Competencies

The grade **Excellent** shall be awarded to a student if the theoretical content of the course has been mastered completely, without gaps; the material is presented exhaustively, consistently, clearly, and logically; the student freely copes with tasks, questions, and other types of knowledge application; uses additional material in the answer; all tasks provided for by the program are completed, and the quality of their execution is evaluated by a number of points close to the maximum; analyzes the obtained results; demonstrates independence when performing tasks.

The grade **Good** is to be awarded to a student if the theoretical content of the course is mastered completely, the necessary practical competencies are mainly formed, all educational tasks provided for by the training program are completed, and the quality of their execution is sufficiently high. The student firmly knows the material, presents it competently and strictly on the merits of the matter, without allowing significant inaccuracies in answering the question.

The grade **Satisfactory** is awarded to a student in case the theoretical content of the course has been mastered in part only, but the gaps are not of a significant nature, most of the tasks provided for by the program are completed, but contain errors, the student allows inaccuracies and insufficiently correct wording when answering the question, and violations of logical sequence are observed in the presentation of the program material.

The grade **Unsatisfactory** is awarded to a student if they do not know a significant part of the program material, allow significant errors, perform practical works with great difficulty and uncertainty, the necessary practical competencies are not formed, most of the educational tasks provided for by the training program are not completed, and the quality of their execution is evaluated by a number of points close to the minimum.