

Federal State Budgetary Educational Institution of Higher Education
"Privolzhsky Research Medical University"
Ministry of Health of the Russian Federation

BANK OF ASSESSMENT TOOLS FOR DISCIPLINE
MEDICAL INFORMATICS

Training program on specialty: **31.05.01 GENERAL MEDICINE**

Department: **INFORMATION TECHNOLOGY**

Mode of study: **FULL-TIME**

Nizhniy Novgorod
2023

1. Bank of assessment tools for the current monitoring of academic performance, mid-term assessment of students in the discipline MEDICAL INFORMATICS

This Bank of Assessment Tools (BAT) for the discipline "Medical informatics" is an integral appendix to the working program of the discipline "Medical informatics". All the details of the approval submitted in the WPD for this discipline apply to this BAT.

(Banks of assessment tools allow us to evaluate the achievement of the planned results stated in the educational program.

Assessment tools are a bank of control tasks, as well as a description of forms and procedures designed to determine the quality of mastering study material by students.)

2. List of assessment tools.

The following assessment tools are used to determine the quality of mastering the academic material by students in the discipline:

| No. | Assessment tool | Brief description of the assessment tool | Presentation of the assessment tool in the BAT |
|-----|-----------------------|--|--|
| 1 | Solving sets of tasks | The following tasks are distinguished: a) of reproductive level, allowing to evaluate and diagnose knowledge of factual material (basic concepts, algorithms, facts) and the ability to correctly use special terms and concepts, recognition of objects of study within a certain section of the discipline; b) of reconstructive level, allowing to evaluate and diagnose the ability to synthesize, analyze, summarize factual and theoretical material with the formulation of specific conclusions, the establishment of cause-and-effect relationships; c) of creative level, allowing to evaluate and diagnose skills, integrate knowledge of various fields, argue your own point of view | A set of multi-level tasks |
| 2 | Controlwork | A tool of checking the ability to apply acquired knowledge for solving problems of a certain type by topic or section | Set of control tasks invariants |
| 3 | Report | The product of the student's independent work, which is a public presentation about the results obtained by solving a certain educational, practical, research or scientific topic | Topics of reports, presentations |

3. A list of competencies indicating the stages of their formation in the process of mastering the educational program and the types of evaluation tools.

| Code and formulation of competence | Stage of competence formation | Controlled sections of the discipline | Assessment tools |
|------------------------------------|-------------------------------|---------------------------------------|------------------|
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| | | | |
|-------------------------|---------|---|---|
| GPC-10; PC-21; PC-22 | Current | <ol style="list-style-type: none"> 1. Statistical algorithms for processing of empirical data. 2. Principles of creating computer models. 3. Probabilistic methods in medicine. 4. Basic concepts of computer communication networks. Concepts of local, corporate, regional and global networks. Internet information resources. 5. Basic concepts about the structure and organization of databases (DB) and database management system (DBMS) on the example of LibreOffice Base relational DBMS. 6. Principles of presentations making. | Solving sets of tasks, Controlwork, Report. |
|-------------------------|---------|---|---|

4. The content of the assessment tools of entry, current control.

Current control is carried out by the discipline teacher when conducting classes in the form of: Solving sets of tasks, Controlwork, Report.

Assessment tools for current control.

Solving sets of tasks

1. Introductory lesson on the program Calc.
2. Correlation and regression tasks.
3. H_0 -hypothesis problem tasks.
4. Statistical distributions problems.
5. Pharmacokinetic models.
6. Probabilistic diagnostic methods. Bayes' formula.
7. Operative characteristics of a test.
8. Creating of databases in program Base.
9. Creation of a presentation.

Controlworks

1. Control work on the ownership of software products. Control work №1.
2. Heart Rate Variability calculations. Control work №2.
3. Blood Pressure Monitoring calculations. Control work №3.
4. Creation of a presentation.

Report

1. Report on the prepared presentation.

(The teacher specifies all types of tasks for conducting current control, if this is provided for in the WPD, in the form given below as an example. The current control is carried out in the context of the assessment of competencies provided for in the WPD, and not topics or sections of the discipline).

4.1. Tasks for the assessment of competence "GPC-10; PC-21; PC-22":

1. Introductory lesson on the program Calc.
2. Correlation and regression tasks.
3. H_0 -hypothesis problem tasks.

4. Statistical distributions problems.
5. Pharmacokinetic models.
6. Probabilistic diagnostic methods. Bayes' formula.
7. Operative characteristics of a test.
8. Creating of databases in program Base.
9. Creation of a presentation.

4.2. Control work for the assessment of competence "GPC-10; PC-21; PC-22":

1. Control work on the ownership of software products. Controlwork№1.
2. Heart Rate Variability calculations. Controlwork№2.
3. Blood Pressure Monitoring calculations. Controlwork№3.
4. Creation of a presentation.

4.3. Questions for report on the prepared presentation."GPC-10; PC-21; PC-22":

1. Ancient medicine in your country.
2. Modern medicine in your country.
3. Traditional medicine in your country.
4. The development of medicine in your country.
5. Ancient medicine in the world.
6. Modern medicine in the world.
7. Traditional medicine in the world.
8. The development of medicine in the world.
9. Information technologies in medicine.
10. The history of the introduction of information technology in medicine.
11. Robotics in modern medicine and pharmacy.
12. Big data in medicine and pharmacy.

4.4. Tasks (assessment tools) for the credit "GPC-10; PC-21; PC-22":

The credit is given based on the results of the practical exercises, control works and reports.

5. The content of the assessment tools of mid-term assessment.

Mid-term assessment is carried out in the form of a credit.

The credit is given based on the results of the practical exercises, control works and reports.

Materials for practical and control works on the informatics course as well as lectures and video help on this course are available at the Department of Information Technology, and are also presented on the educational portal of the University:

<https://sdo.pimunn.net/course/view.php?id=308>

6. Criteria for evaluating learning outcomes.

| Learning outcomes | Evaluation criteria | |
|----------------------------------|---|---|
| | Not passed | Passed |
| Completeness of knowledge | The level of knowledge is below the minimum requirements. There were bad mistakes. | The level of knowledge in the volume corresponding to the training program. Minor mistakes may be made |
| Availability of skills | Basic skills are not demonstrated when solving standard tasks. There were bad mistakes. | Basic skills are demonstrated. Typical tasks have been solved, all tasks have been completed. Minor mistakes may be made. |

| | | |
|--|--|---|
| Availability of skills (possession of experience) | Basic skills are not demonstrated when solving standard tasks. There were bad mistakes. | Basic skills in solving standard tasks are demonstrated. Minor mistakes may be made. |
| Motivation (personal attitude) | Educational activity and motivation are poorly expressed, there is no willingness to solve the tasks qualitatively | Educational activity and motivation are manifested, readiness to perform assigned tasks is demonstrated. |
| Characteristics of competence formation | The competence is not fully formed. The available knowledge and skills are not enough to solve practical (professional) tasks. Repeated training is required | The competence developed meets the requirements. The available knowledge, skills and motivation are generally sufficient to solve practical (professional) tasks. |
| The level of competence formation | Low | Medium/High |

Developer of the working program:

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