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Federal State Budget Educational Institution
of Higher Education
Pacific State Medical University
of the Ministry of Health of the Russian Federation

APPROVED BY

Director of the Institute of
Fundamentals and Information
Technologies in Medicine
_____ / Bagryantsev V.N./
"4th" of April 2025

SUBJECT GUIDE FOR TEACHERS AND STUDENTS FOR

Б1.О.47 Data processing information technologies

(Name of discipline)

Specialty	**31.05.03 Dentistry for international students (in English)** (code, name)
Degree	Specialist's degree
Profile	02 "Healthcare" (in the field of providing health care in patients with dental pathology)
Mode of study	**Full-time**
Period of mastering the BEP	**5 years** (nominal length of study)
Institute	of Fundamentals and Information Technologies in Medicine

Vladivostok, 2025

Subject guide for teachers and students for **Б1.О.47 Data processing information technologies** is based on:

1) Federal State Educational Standard of Higher Education for the specialty approved by the Order No. 988 of Ministry of Science and Higher Education of the Russian Federation dated August 12, 2020.

2) Curriculum for the 31.05.03 Dentistry for international students (in English), profile 02 "Healthcare" (in the field of providing health care in patients with dental pathology), approved by the Academic Council of FSBEI HE PSMU of the Ministry of Health of Russia Report No. 8/24-25 dated March 31, 2025.

Subject guide for teachers and students for the discipline were developed by the writing team of the Institute of Fundamentals and Information Technologies in Medicine of the FSBEI HE PSMU of the Ministry of Health of Russia, under the guidance of the director of the institute Candidate of Medical Sciences Bagryantsev V.N.

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1. GENERAL PROVISIONS

Subject guide for **Б1.О.47 Data processing information technologies** is a set of recommendations and explanations that facilitate to optimal organization of mastering this discipline.

Regular analysis of lecture materials and work with end-of-the-text questions are necessary for better understanding of the material and systematization of knowledge of **Б1.О.47 Data processing information technologies**. Particular attention should be paid to emerging questions, confusing terms, and conflicts of points of view during the independent review of the lecture material. If necessary, a student should contact the teacher for advice. Lecture material streamlines students' thinking, while practical classes provide deeper insight into the material of the discipline.

Special attention should be paid to the content of the main provisions and conclusions, explanation of phenomena and facts, and clarification of the practical application of theoretic aspects of topic when preparing for a practical class. During this process students should aim to understand and remember the main provisions of the material under consideration, examples provided, as well as understand the illustrative material.

Collections of assessment tools are used to organize independent study of topics (questions) of the discipline.

Independent work of students is facilitated by the following:

1. availability and accessibility of the necessary educational and reference material;
2. a system of regular quality control of completed independent work;
3. availability of teacher's advice.

Subject guides for self-study are presented as literary sources and subject guides for the students. Subject guides for independent work of students include a list of library resources of the educational institution and other materials accessible to students.

Independent work is a type of in-person extracurricular work of teachers and students of **Б1.О.47 Data processing information technologies**. Control of independent work is conducted by the leading teacher. Evaluation of independent work results is taken into account when conducting interim examination of students throughout the **Б1.О.47 Data processing information technologies** course.

Continuous assessment during the **Б1.О.47 Data processing information technologies** course is implemented in order to check indicators of achieving competencies, to stimulate students' academic work, and improve methods of mastering new knowledge. Continuous assessment during the **Б1.О.47 Data processing information technologies** course is conducted during the semester to assess all types and sections of the academic discipline that encompass the competencies developed by the discipline: classroom questioning, conducting discussions, working with tests, and writing library-research papers. Continuous assessment of students' knowledge and results of their preparation for practical classes is conducted during every class session.

Interim assessment aims to determine the level of mastery of competency indicators. It is conducted in the test format after the student has mastered all sections of **Б1.О.47 Data processing information technologies** and takes into account learning outcomes for all types of student work over the entire period of mastering the **Б1.О.47 Data processing information technologies** course.

Time allotted for interim assessment is indicated in the schedule.

Assignments given during practical classes, as well as assignments aimed to prepare students for continuous and interim assessment, are included in the collection of assessment tools for **Б1.О.47 Data processing information technologies**. If necessary, students should contact the teacher for advice. It is necessary to thoroughly think over questions that need clarification before seeking teacher's advice.

2. SUBJECT GUIDES FOR LECTURE CLASSES

Table 1. Subject Guides for **Б1.О.47 Data processing information technologies** Lectures

Topic No.2 Primary and secondary data. Primary and secondary analysis of medical data	
Duration of the lecture (in academic hours):	2
Purpose of the lecture: 1. tell students about primary and secondary data, primary and secondary analysis; 2. define these concepts in medicine; 3. examine the their use in healthcare.	
Lecture plan, order of presentation of its sections: 1. Primary data. Data collection methods (focus groups, surveys, questionnaires, experiments, testing, etc.). Data collection efficiency. Data sets. Patterns emerging in data sets. Errors 2. Secondary data. Methods used in secondary research (internal sources, external data sources). Errors 3. Tabular options. Database. Types 4. General understanding of medical data analysis. Relationship with medical information technologies. Selecting scientific materials 5. Preparing primary material for data analysis. Request from the medical profession 6. Primary analysis of medical data. Purpose. Data sets 7. Secondary analysis of medical data. Solving new problems based on old (secondary) data 8. Big data 9. Interpretation of the results 10. The patient's rights to maintain confidentiality of information about his health status and the presence of diseases	
Recommended reading: 1. 1. «Biomedical Informatics», book, Edward H. Shortliffe, James J. Cimino, Springer International Publishing, 2021. – 1152 p.. - ISBN 978-3-030-58721-5. -. - URL : https://link.springer.com/book/10.1007/978-3-030-58721-5 2. «Biomedical Signals, Imaging, and Informatics», Joseph D. Bronzino, Donald R. Peterson, Taylor & Francis, 2015. – 1468 p.. - ISBN 978-0-429-10401-5. URL : https://www.taylorfrancis.com/books/mono/10.1201/b15468/biomedical-signals-imaging-informatics-joseph-bronzino-donald-peterson	

3. SUBJECT GUIDES FOR PRACTICAL CLASSES

Table 2. Subject Guides for Practical **Б1.О.47 Data processing information technologies** Classes

Topic No.3 Word processor capabilities for formatting articles, essays, and term papers in accordance with standards **Practical training: formatting a thesis**	
Duration of the practical class (in academic hours):	4
Purpose of the practical class: 1. consolidate acquired knowledge on the structure of a qualifying thesis and implement this structure using a text editor; 2. during the discussion, outline the purpose and basic functions of a text editor; 3. develop skills in editing and formatting text documents.	

Practical classes requirements: computer labs fitted out with computer equipment abile to connect to the Internet and provide access to the organization's electronic information and educational environment
Independent work of the student: working with educational and lecture materials.
Methods of evaluation of acquired knowledge and skills: preparing a report on the completed digital assignment.
Recommended reading: 1. Medical statistics made easy, Harris M., Taylor G., Scion Publishing Ltd, 2020. – 140 p.. - ISBN 978-0-4292-1067-9. - URL https://www.taylorfrancis.com/books/mono/10.3109/9780203502778/medical-statistics-made-easy-michael-harris-gordon-taylor

4. GUIDELINES FOR CONTINUOUS AND INTERIM ASSESSMENT

Table 3. Guidelines for Conducting Continuous and Interim Assessment during the **Б1.О.47 Data processing information technologies** Course

Type of assessment	Assessment format
Continuous assessment	- assessment and evaluation of completion and results of tests and practical assignments given during practical classes;
Interim certification	is conducted in test format (completing a practical assignment); it allows to assess the development of students' competencies correlating with types of professional activity.

5 ASPECTS OF THE IMPLEMENTATION OF THE COURSE FOR STUDENTS WITH DISABILITIES AND SPECIAL NEEDS

5.1. Availability of accessible environment

For students with disabilities and special needs, if a written application is submitted, lectures and practical classes are carried out taking into account health limitations, individual capabilities and medical status (hereinafter referred to as individual characteristics) of the student. Compliance with the following general requirements is ensured: teaching aids for collective and individual use are provided, required technical assistance is provided by an assistant, buildings and premises where lectures and practical classes are taking place meet accessibility requirements, other arrangements lack of which makes it impossible or difficult to master the discipline are made.

5.2. Compliance with general requirements

When lectures and practical classes are carried out at the written application of the student, the following general requirements are met: lectures and practical classes for students with disabilities and special needs take place at the same location as for students who do not have disabilities, if this does not cause difficulties for students; an assistant (assistants), who provide(s) students with the necessary technical assistance taking into account individual characteristics of the student, is (are) provided; necessary teaching aids are provided, taking into account individual characteristics of the student.

5.3. Availability of the internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia to students with disabilities in a form accessible to them.

All internal policies and procedures of FSBEI HE PSMU of the Ministry of Health of Russia concerning the discipline are made available to students with disabilities in a form accessible to them.

5.4. Increase in the duration of interim assessment of students with disabilities and special needs in relation to the established duration

Format of the interim assessment of academic performance within the scope of the discipline for students with disabilities and special needs is selected taking into account individual characteristics (orally, by writing on paper, by typing on a computer, as a test, etc.). The duration of the interim assessment in relation to the established duration is increased at the written application of the student with disabilities. Time limit for the student's preparation for the test is increased by at least 0.5 hours

6. STAFFING REQUIREMENTS OF THE DISCIPLINE

Academic teaching personnel that ensure the implementation of the discipline education process meet the requirements of the Federal State Educational Standard of Higher Education for the 31.05.03 Dentistry for international students (in English) specialty; list of the aforementioned personnel is available on the website of the educational organization.

