Speciality "General Medicine"

ACADEMIC DISCIPLINE "INFORMATICS IN MEDICINE"
INFORMATION TECHNOLOGY IN HEALTHCARE MODULE 1.3

Academic discipline outline	Introduction to informatics in medicine. Technical means for implementing information processes. Software tools for information processing. Basic computer components. Operating systems. File compression and archiving tools. File managers. System utilities. Antivirus software. Fundamentals of information transformation and presentation. Text editors. Microsoft Word: core features and document formatting. Spreadsheet processors. Basic operations in Microsoft Excel. Creating XY (scatter) plots in Microsoft Excel. Statistical data analysis using Microsoft Excel. Constructing histograms in Microsoft Excel. Microsoft Access databases: fundamentals of design and use. Automated medical and technological systems. Healthcare information systems.
Resulting skills	To be capable of self-development and improvement in professional activities, to develop receptiveness to innovation and the ability to engage in innovative activities; To solve standard professional tasks based on the application of information and communication technologies, and to possess the skills to analyze the content of scientific publications and apply their results in professional practice.
Learning outcomes	A student must: **know:** the role of modern information technologies in medicine, scientific research, and healthcare; key application areas and future prospects of information technologies in the healthcare system; principles of creating, formatting, and editing text documents; rules for designing electronic spreadsheets, structuring workbook sheets, linking sheets, and protecting workbook content; fundamentals of statistical methods for processing medical data; basics of designing and developing database management systems; core functional capabilities of healthcare information systems; **be able to:** operate within a modern Windows-family operating system

	environment; use applications of the Microsoft Office suite and exchange data between them; create charts and pivot tables in Microsoft Excel for the analysis of biomedical data; determine key sample statistics and assess relationships between variables using built-in statistical functions and the data analysis toolpak in Microsoft Excel; design and deliver multimedia presentations to present scientific work; construct and execute queries to retrieve data from Microsoft Access databases; work with specialized automated workstation software; utilize educational and scientific information resources available on local and global networks; **master:** formatting complex, structured documents in Microsoft Word, including multi-level headings and automatically generated tables of contents; automating complex calculations and presenting data through tables, charts, and graphs using Microsoft Excel; applying scientific research methodologies—specifically, data analysis, performing statistical computations on sample data, and interpreting the results of statistical processing of biomedical data; developing and delivering effective multimedia presentations; organizing large volumes of information in Microsoft Access databases and using queries for data retrieval; navigating local and global networks and effectively utilizing internet-based information resources; implementing information security measures; processing biomedical data using specialized software designed for healthcare professionals.
Semester(s)	2 semester
Prerequisite	Medical and biological physics.
Credit value	3 credits
Academic hours	90 academic hours, of which: 32 class hours
Forms of midterm attestation	Test