Discipline code	N 1.2.1.1
Title of the discipline:	Information Technology and Mathematics
Scope of the discipline in credits ECTS	4
Semester and year of study	1st year, 1st semester
Purpose of the discipline	Training of a qualified specialist who is able to carry out basic medical skills, has organizational, managerial, educational and research abilities, meets the requirements of the quality assurance system in the international educational process.
Disciplinary prerequisite	To successfully master this course, students must possess the basic knowledge and skills acquired in the following disciplines: • Mathematics (algebra, elements of mathematical analysis); • Computer science (computer fundamentals); • Fundamentals of logic and algorithms; • Basic skills in using the operating system and office applications.
Post-requisite discipline	The knowledge and skills acquired in this course are used in mastering the following disciplines: • programming; • mathematical modeling; • data analysis; • databases; • information systems and technology; • applied mathematics; • digital educational technologies.
Discipline and co-requisites	Courses studied in parallel and complementary to this course: • Discrete Mathematics; • Statistics and Probability Theory; • Fundamentals of Programming; • Digital Literacy;
Formative competencies	ОК-1, ИК-1, ИК-4, ПК-5
Results of teaching the discipline	As a result of mastering the discipline, the student must be able to: • solve applied problems in the field of professional activity; As a result of mastering the discipline, the student should know: • the importance of mathematics in professional activity and in mastering a professional educational program; • basic mathematical methods for solving applied problems in the field of professional activity; • basic concepts and methods of probability theory and mathematical statistics; • Fundamentals of integral and differential calculus The student is able to: • apply mathematical methods and information technology to solve educational and practical problems; • use software and digital tools for data processing and

	analysis;
Assessment tools	**1. Formative Assessment (Ongoing Assessment)** Used to monitor learning progress during the course. • Quizzes (online and in-class) • Short tests (multiple-choice, problem-solving) • Homework assignments • Practical exercises (IT tasks, mathematical calculations) • Class participation and discussions • Individual and group activities • Self-assessment and peer assessment **2. Summative Assessment (Final Assessment)** Used to evaluate overall achievement of learning outcomes. • Midterm examination • Final examination • Comprehensive tests (IT + Math) • Final project or coursework • Practical exam (computer-based tasks) **3. Practical / Performance-Based Assessment** Assesses hands-on skills. • Computer laboratory work • Software-based tasks (Word, Excel, PowerPoint, databases) • Mathematical problem-solving tasks • Data analysis and visualization assignments • Case studies (application of math in real-life/medical contexts)
References	**Электронные учебники** 1. **Информационные технологии в образовании** – электронный учебник https://znanium.com 2. **Информатика и ИКТ** (электронные учебники для СПО и вуза) https://urait.ru 3. **Математика для вузов** (алгебра, математический анализ) https://www.lanbook.com 4. **Прикладная математика и информационные технологии** https://www.elibrary.ru 5. **Высшая математика** (электронные учебные издания) https://studentlibrary.ru 6. **Национальная электронная библиотека (НЭБ)** – учебники по математике и ИТ https://rusneb.ru 7. **Open Textbook Library** – бесплатные электронные учебники (англ.) https://open.umn.edu/opentextbooks 8. **LibreTexts Mathematics & Computer Science** (англ.)

	MIT OpenCourseWare (учебные материалы и конспекты) https://ocw.mit.edu
Summary of the discipline	**Summary of the Discipline** The discipline *"Information Technology and Mathematics"* provides students with basic knowledge and practical skills in using information technologies and mathematical methods for problem-solving and data analysis. The course integrates computer applications with fundamental mathematical concepts to develop analytical thinking and digital competence for academic and professional activities.
FULL NAME of teacher	Oichueva Burulgul Rahmanberdievna