**The name of the academic discipline:**

**“Fundamentals of Information Technology”**

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| **Specialty code and name** | 7-06-0113-04 Physical and Mathematical Education |
| **Year of study** | 1 |
| **Semester of study** | 1 |
| **Number of in-class academic hours:** | 50 |
| **Lectures****Seminar classes** **Practical classes****Laboratory classes** | 26 |
| - |
| - |
| 24 |
| **Form of the current assessment (*credit/ graded credit /exam*)** | graded credit |
| **Number of credit points** | 2 |
| **Competences** | Mastering the academic discipline “Fundamentals of Information Technology” should ensure the formation of professional competencies: mastering computer methods of collecting, storing and processing information in the field of their professional activity; mastering methods of effective use of software; acquiring new knowledge using modern information technologies; analyzing and evaluating collected data. |
| **Summary of the academic discipline:****Modern information technologies** History, current state and development prospects of IT technologies. The concept of information. Operating systems. Programming technologies. **Basic software for information processing** Software. Data storage, processing and visualization tools. Service tools. Database management systems. **Network technologies and the Internet** Fundamentals of web technologies. Seven-level model of the structure of communication protocols. Computer networks. **Information security** Methods and means of information security. **Mathematical modeling and numerical methods** Models of systems, their purpose. Methods of mathematical statistics, analysis and data processing. Systems and packages for mathematical calculations. **Optimization methods and decision support systems** Methods for solving variational problems. Decision support systems. The concept of expert systems and heuristic procedures. Artificial intelligence, neural networks. |