

**The name of the academic discipline:
«Mathematical logic»**

Code and name of specialty	1-40 01 01 Software Engineering
Training course	1
Semester of training	1
Number of class hours:	34
Lectures	18
Seminar classes	-
Practical classes	16
Laboratory classes	-
Form of current assessment (credit/differential credit/exam)	credit
Number of credits	2
Competencies to be formed	Mastering the academic discipline "Mathematical Logic" should ensure the formation of universal and basic professional competencies: use the forms, techniques, methods and laws of intellectual cognitive activity in the professional field; use the fundamental principles of computer science, mathematical logic and the theory of algorithms to effectively develop software
Summary of the academic discipline:	
<p>Statements. Logical operations on statements. Construction of complex sentences. Formulas of propositional logic. Equivalent formulas, tautologies, contradictions. Basic equivalences. Theorems on equivalent formulas. logical follow. Applications of the language of propositional logic (direct and inverse theorems, necessary and sufficient conditions, simplification of propositional systems, reasoning analysis, relay-contact circuits). Predicates and operations on them. Logical following and equivalence. Quantifiers. Types of theorems in the form of implication. Types of evidence. Boolean functions. Representations of boolean functions. Disjunctive normal forms (DNF and SDNF). Conjunctive normal forms (CNF and SKNF). Polynomial normal forms. Polynomial Zhegalkin. Closure and completeness of systems of Boolean functions. Minimization of boolean functions in the DNF class.</p>	