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| Discipline „logic and automation”, code: 09 |
| Annotation: The course “Logic and Automation” is oriented towards the fundamental preparation of the students in the Technical University of Varna. The aim is to give the students knowledge and practical skills in methods of analysis and synthesis of logic circuits and their use in computer systems, technologies and simulations.  The discipline provides the basis for the following courses: Computer Organization and Architectures, Discrete Structures, Microprocessors and other specialized disciplines from the curriculum of the specialty. |
| Main issues of the syllabus content:   * Boolean algebra. Logical functions. Presentation of local functions. Elementary logical functions. Minimization of logical functions with Karnaugh maps * Synthesis of combinational logical schemes * Synthesis of functional logical schemes * Analysis of logical circuits * Abstract automata. Synthesis of Mealy and Moore machines. Minimization of finite state machines * Flip-flops. Synthesis of triggers. Synthesis of finite state machines. Synchronous and asynchronous automata * Synthesis of structural automata by using block diagrams * Synthesis of sequential logical schemes based on shift registers * Programmable logic devices |