

Item No.: CO4204-6A

Course - Digital electronics 1: Gates and flip-flops

Includes:

- 1 Experiment card with logic gates (NOT, AND, OR, NAND, NOR, EXOR, EXNOR) and a sequence of gates
- 1 Experiment card with JK flip-flop
- CD-ROM with Labsoft browser and course software

Course contents:

- Introduction to basic logic circuits
- Introduction to the terms truth tables, symbols, switching equations and timing diagrams for all basic gates
- Introduction to Boolean functions and laws
- Experimental derivation of Boolean functions and laws
- Design of basic logic circuits using in NAND gates and NOR gates
- Minimisation of logic circuits using Karnaugh maps and experimental testing
- Introduction to the principles of flip-flops
- Investigation of the operation of JK flip-flops (static and dynamic input signal/single clock mode)
- Investigation of a counter circuit
- Fault simulation (7 simulated faults activated by relay)
- Course duration 5 h approx. (fault finding 1 h approx.)