

Name of the subject: Digital technics I	NEPTUN code: KMEDT11ANE	Weekly hours: 2 2 lec+0 gs + 0 lab	Credit: 4 Req: Examination
Subject leader: Dr. Rita Lovassy	Associate professor	Prerequisites:	
Description of the subject:			
<p>General introduction. Description of logic connection: textual, algebraic form, truth table, logic diagram. Boolean algebra: axioms and theorems. Fundamental logic operations. Logic functions, fundamental concepts. Two-variable logic functions. Fully and incompletely specified logic functions. Canonic forms of logic functions. Disjunctive (sum-of-products, SOP), conjunctive (product-of-sum, POS) canonic forms, minterms and maxterms. Numerical minimization, example. XOR logic. Karnaugh map and applications. Programmable logic PLDs. FGPA basics, architecture, examples. Combinational circuits basic concepts. Combinational logic design: case studies. Number systems, fundamentals. Binary numbers. Arithmetic operations in the binary number systems. Digital logic functional building blocks II. Multiplexers, demultiplexers, comparators. Flip-flops, registers, counters.</p>			
Literature:			
<ul style="list-style-type: none"> - F. Vahid, Digital Design, John Wiley & Sons Inc. 2007 - R. P. Jain, Modern Digital Electronics (4th Edition), Tata McGraw Hill Education Private Limited, 2010 - V. A. Pedroni: Digital Electronics and design with VHDL, Elsevier 2008 			