

Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering		Institute of Mechatronics and Vehicle Engineering	
Subject title and code: Full-time study		Digital Technics, BMXDTY4BNE 2 ac. 4 semester year	
		Credits: 4	
The course is available at:		mechatronical engineering	
Supervised by:		dr. István Nagy	
		Instructors: dr. István Nagy; Kornél Földes	
Prerequisite (neptun code):		electronics, BMXELY3BNE	
Weekly number of lessons			
Lecture: 1	Group seminar: 0	Lab: 2	Consultation: based on needs
Way of assessment: Exam		(Written and oral)	
Online consultation (in case it's required): ... (BBB link)			
Edu. goal: from electronic logic circuit family, to registers, timers and counters, considering the hazards, solving the simplifications, realization the digital circuits.			
Schedule			
Education week	Topics		
1.	digital signal creation, voltage levels of digital impulse;	Practice: digital signal creation, DTL-logic, TTL-logic,	
2.	numeric systems, and its converting: dec-bin, bin-octa, octa-hexa, bin-hexa	Practice: numeric systems	
3.	binary arithmetic, mod2, negative numbers	Practice: numeric systems - conversions	
4.	Boolean algebra – axiomas, doctrinas / De-Morgan; simplification methods: algebraic/VK/numeric -	Practice: Boolean algebra – fundamentals and axioms , algebraic simplification methods, PoS, SoP, digital function's representations, simplification methods	
5.	basic combinatorial circuits: coders/decoders;	Practice: Quine-Mc Cluskey - examples	
6.	multiplexers/demultiplexers/adding/subtracting-with mod2	Practice: Combinatorial circuit in practice coder/mux designing, problem solving	
7.	sequential circuits , SR- FF , Sequential circuits, calculations, Master-slave SR	Practice : 1st TP – combinatorial circuits	
8.	PLC competition-	Practice: PLC competition -	
9.	D, JK, T – FFs, counters, Registers;.	Practice: Sequential circuit designing,	
10.	static, dynamic hazards , hazard-free circuits	Practice: Sequential Circuits -problem solving	
11.	Wednesday TDK;	Wednesday TDK;	
12.	automats: Mealy / Moore automats / State machines	Practice: Sequential circuits, examples	
13.	2nd Test paper - theory	in Practice: 2nd TP – practice (Quine, seq. circuit)	
14.	Retake –Test paper – in case of needs		
Mid-semester requirements			
Test		Assignment to be submitted	
amount	dates	amount	deadlines
3	7,13, 13 weeks		
		Szöveg beírásához kattintson vagy koppintson ide.	
amount	dates	amount	dates
	weeks		
According to the HKR attendance of group seminars and lab exercises are mandatory.			

Other requirements for participation in sessions not covered by the regulations and restrictions on substitutions: On lectures 30% absence is allowed. Recommended mark can be reached if final sum aver > 65%. Final sum aver calc: $\text{Sum aver}[\%] = (\text{TP1}[\%] + \text{TP2}[\%] + \text{TP3}[\%]) / 3$					
Test		Assignment to be submitted		Szöveg beírásához kattintson vagy koppintson ide.	
maximum points available 100%/TP...points	minimum score required to pass /test 50%/TPpoints	maximum points available ...points	minimum score required to pass / assignment ...points	maximum points available ...points	minimum score required to pass /lab ...points

Total number of points achievable in semester: 200points				
Grading thresholds	satisfactory 50 % and above	average 65 % and above	good 80 % and above	excellent 90 % and above
Other evaluation criteria: Recommendation mark limits: 60-69:2;70-79:3; 80-89:4; 90-:5				
Receive a signature denied entry: based on absence>30%				
Required references: see: moodle				
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Quality assurance methods of the subject:				

Things, that are not included, can be found within the regulations of Óbuda University.