

Óbudai Egyetem Neumann János Informatikai Kar		Alkalmazott Informatikai Intézet		
Tantárgy neve és kódja: Digital Systems NIXDR0EBNE		Kreditérték: 5		
Mérnök Informatikus BSc szak		Nappali tagozat 2021/22 tanév I. félév		
Tantárgy oktató(i): Klespitz József				
Előtanulmányi feltételek: (kóddal)		Electrical Engineering, Electronics		
Heti óraszámok:	Előadás:2	Tantermi gyak.: 0	Laborgyakorlat: 2	Konzultáció: 0
Számonkérés módja:	Midterm grade			
A tananyag				
Aim of the course: Student will learn the basic principles of digital electronics required for computer engineers. They will get familiar with the most important construction elements of digital systems, the advancement of logic families, and the application aspects of use of construction elements in the realization of complex tasks.				
Topics: Binary, octal, decimal and hexadecimal numeric representation, boolean algebra, De-Morgan rules, K-maps and truth tables, AND, OR, NOT, NOR, NAND, XOR, NXOR gates, basic CPU architectures, memories, combinational and sequential networks, synchronous systems, design and development single and multi-level systems, design and simulation with CAD, design and development methods for FPGAs				

Féléves ütemezés:	
Oktatási hét (konzultáció)	Témakör
1.	Introduction, numeric representations, basics of Boolean-algebra
2.	Description of combinational networks
3.	Ideal and real components, properties of real components
4.	Sequential networks
5.	Design and analysis of sequential networks
6.	Typical sequential networks
7.	National holiday
8.	Finite state machine: CPU
9.	Logic circuit families: diode, transistor
10.	Physical implementation of basic electronic components
11.	Rectoral holiday
12.	Computer aided design and simulation
13.	Midterm exam
14.	Complementary exam
Félévközi követelmények	
Reach at least 60% on each test (including midterm exam). Participate on at least 70% of laboratories and have and accepted documentations for them. Hand-in an accepted homework before each lab.	
Zárthelyi dolgozatok	
Oktatási hét (konzultáció)	Témakör
13	Midterm exam
14	Complementary midterm exam

A félévzáró érdemjegy (é) kialakításának módszere													
Midterm exam is considered with 50% weight. The average result of the best 5 lab tests is considered with 50% weight.													
Pótlás módja													
Midterm exam can be re-written during the 14th week. Another retake can be written during the first two weeks of the examination period. The content of this test will however cover the entire semester, minimum results to pass: >60%. –To get the midterm grade it is mandatory to have the necessary amount of lab participation AND the accepted documentations.													
Vizsga módja													
Vizsgajegy kialakítása													
<table border="1"> <thead> <tr> <th>Result (%)</th><th>Grade (Hungarian scheme)</th></tr> </thead> <tbody> <tr> <td>90-100</td><td>jeles (5)</td></tr> <tr> <td>80-89</td><td>jó (4)</td></tr> <tr> <td>71-79</td><td>közepes (3)</td></tr> <tr> <td>60-70</td><td>elégséges (2)</td></tr> <tr> <td>0-59</td><td>elégtelen (1)</td></tr> </tbody> </table>		Result (%)	Grade (Hungarian scheme)	90-100	jeles (5)	80-89	jó (4)	71-79	közepes (3)	60-70	elégséges (2)	0-59	elégtelen (1)
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Irodalom													
Kötelező:													
Materials found in the Moodle system													
Ajánlott:													
In Hungarian: Kóré László: Digitális elektronika I. BMF 1121 Dr. Arató Péter: Logikai rendszerek tervezése, Tankönyvkiadó, Budapest													
In English: M. Rafiquzzaman: Fundamentals of Digital Logic and mMicrocomputer Design													
Egyéb segédletek:													
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