Assessment and subject description

Kandá Kálmán Ea	oulty of Electric	ool Engin	agring	l In	atitute of M		onion and T	
Kandó Kálmán Fa Subject name and			-		stitute of M	lcroelectr		redits: 3
Full-time, Spring				02			CI	cuits. 5
Course: BSc in E								
	Dr. Lovassy Rit	0	Teaching	D	r. Bálint Pőc	lör. CSc		
	associate professor staff:			(honorary) full professor				
Prerequisites:		501	50011	(<u>onorarj) ra</u>	1 p101000		
Contact hours	Lecture: 2	Class d	liscussion:	1	Lab hours:	0	Tutoria	1· 0
per week:				-	240 10000	0	1 000110	
Assessment and	exam							
evaluation:								
		Sı	ubject desc	rip	tion			
Aims:				<u> </u>				
This course will	give an overvie	w of the	basic cond	cept	s and appli	cations of	f digital tec	hnics. from
Boolean algebra t								
fundamentals of								
applications. In th								
the future electric								•
functioning, opera	•		•		•		-	-
Topics to be cover	red:							
Sequential circuits	s, general conce	pts and p	oroperties, s	sync	hronous and	l asynchr	onous opera	ation.
elementary sequer	ntial circuits, flip	n-flons A	A	da		. 1	aimanita Ca	
		p nopor i	Analysis an	a sy	nthesis of s	equential	circuits. Se	quential
functional blocks,	registers, count							
functional blocks, Implementation te		ters. Logi	ic circuit ge	ener	ations and f	amilies, g	eneral prop	erties.
Implementation te Arithmetic circuit	chnologies, bip s, combinationa	ters. Logi olar (TTI l and seq	ic circuit ge L, ECL), Fl uential. Ser	ener ET (mic	ations and f (CMOS). Pr onductor me	amilies, g ogramma emories, j	eneral prop ble logic de	erties. vices.
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Contractor for the contractor of the state o	
Semiconductor memories. Classification, technologies, properties and applications.	2
Microprocessors I. Carry-look ahead and carry select adders, parallel	
multipliers. Series arithmetic circuits: adders and multipliers. Arithmetic	2
logic unit: structure and properties.	-
Microprocessors II. Elementary concepts, structure, bus system, operation,	
handling of peripheries, interruption system.	2
End-of-term review.	2
Classroom practice subjects	
Synthesis of combinational circuits: design examples and case studies.	2
Analysis and synthesis of synchronous sequential circuits: examples. Case	
studies: 4-bit parity indicator, Gray-code counter	2
Applications examples of synchronous sequential circuits and counters.	2
Analysis of operation of and applications of TTL and CMOS basic gates and	
functional elements I.	2
Analysis of operation of and applications of TTL and CMOS basic gates and	2
functional elements II.	2
Analysis and applications of semiconductor memories.	2
Assessment and evaluation	
Requirements of the signature:	
The attendance of the lectures and classroom practices is compulsory. Students	whose absence from
lectures or classroom practices exceeds the limits stipulated in the Rules and Re	egulations of the
University cannot be admitted to examination.	
The coursework comprises several home assignments and a written mid-term te	est. The condition for
admission to examination, besides the above rules concerning lecture attendance	
of all home assignments and at least a pass mark (2) in the mid-term test.	
Type of exam:	
Written and supplementary oral examination at the end of the semester.	
The threshold for pass mark (including the results of home assignments and mi	d-semester test) is 55
%.	,
Evaluation of the exam:	
The results of home assignments and of the test will be appropriately incorpora	ated in the final grade.
Weighing (app.): home assignments results 30 %, mid-term test result 20%, and	
Suggested material	
Arató Péter: Logikai rendszerek tervezése, Tankönyvkiadó, Budapest, 1990, Mi	legyetemi Kiadó
2004	
Zsom Gyula: Digitális technika I, II, Műszaki Könyvkiadó, Budapest, 2000, (K	VK 49-273/I). (Can
be found on and downloaded from the internet.)	
Rőmer Mária: <i>Digitális rendszerek áramkörei</i> , Műszaki Könyvkiadó, Budapest 223).	, 1989, (KVK 49-
Rőmer Mária: Digitális technika példatár, KKMF 1105, Budapest 1999.	
Bálint Pődör: Digital technics (course materials for final year elective English 1	anguage course),
mti.kvk.uni-obuda.hu	· _ ·
Bálint Pődör: Digital technics II (course materials for 1st year English language	e course), mti.kvk.uni-
obuda.hu	
(available also on the University E-learning (Moodle) system).	
Comment:	