



UNIVERSITY OF MITROVICA “ISA BOLETINI”

Course Curriculum Model (Syllabus)

Fakulty:	Faculty of Mechanical and Computer Engineering	
Department:	Computer Science and Engineering	
Level:	VI	
Code of the course:	211-CSE	
Course:	DIGITAL ELECTRONICS	
Course Status:	Obligatory	(mandatory)
Semester:	IV	(spring)
Number of hours per week:	2+2	
ECTS:	5	
Time / location:		
Year of studies	II	
Lecturer:	Prof. Ass. Dr. Muzfer Shala	
Assistent:	Msc. Halil Sadiku	
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Content	Digital circuits families and their operation characteristics. DL logic. RTL logic. DTL logic. Standard TTL logic. Advanced TTL and Schottky TTL. ECL. CMOS logic. I ² L logic. Interfaces between digital circuits families. Multivibrators. One-shot circuits and 555-Timer. Operational amplifiers. Operational amplifiers applications. A/D and D/A converters.
Purpose	Students to get knowledge on: basic characteristics on digital circuits, families and techniques of digital circuits, multivibrators, operational amplifiers, A/D and D/A converters.
Accessi bility	Upon completion of this course students will be able to: - realize typical analysis of digital circuits, - design digital circuits depending on logic function and design technique, - evaluate the performance of digital circuits in static mode of operation, - evaluate the performance of digital circuits in dynamic mode of operation, - realize interfaces between digital circuits, - realize required waveforms of output signals, - design circuits with operational amplifiers for different operations.

Program	weeks	Lecture
	First week:	Families of digital circuits and their operation characteristics
	Second week:	DL and RTL logic
	Third week:	DTL logic
	Fourth week:	Standard TTL logic
	Fifth week:	Advanced TTL logic and Schottky- TTL logic
	Sixth week:	ECL logic
	Seventh week:	CMOS logic
	Eighth week:	I ² L logic
	Ninth week:	Interfaces in digital circuits
	Tenth week:	Multivibrators
	Eleventh week:	one-shot circuits and the Timer-555
	Twelfth week:	Operational amplifiers
	Thirteenth week:	Applications of operational amplifiers
	Fourteenth week:	A/D converters
	Fifteenth week :	D/A converters
Literature	Principal literature: [1] Anil K. Maini, "Digital Electronics", 2007, John Wiley & Sons, Inc. [2] Thomas L. Floyd, "Digital Fundamental" Ninth Edition, Prentice Hall, 2008 Recommended Literature: [1] Thomas L. Floyd, "Electronic device", Seven Edition, Prentice Hall, 2005	
Teaching methodology	Lectures, numerical exercises, laboratory exercise, seminars, discussions and work in groups.	

	Contribution to student workload (which should correspond to student learning outcomes - 1 ECTS credit = 25 hours)			
	Activity	Hours	Days/weeks	Total
	Lectures	2	15	30
	Exercise sessions (with TA)	1	15	15
	Practical work	1	15	15
	Office hours	1	15	15
	Fieldwork	0	0	0
	Midterms, seminars	2	3	6
	Homework	3	2	6
	Self-study	1	15	15
	Final exam preparation	1	15	15
	Time spent in exams	2	2	4
	Projects, presentations, etc	2	2	4
	Total			125
Evaluation	Teaching methodology: (according to the Statute and Regulation for studies of UMIB)			
	Research work	5%		
	Numerical and practical labs	40%		
	Simulation work	5%		
	Work in the classroom	20%		
	Final exam	40%		

Mitrovica

Course provider:

(Name Surname)

(Signature)