Course Name : Logical circuits								
Course Code	Course Type	Regular Semester	Lecture (hours/we ek)	Seminar (hours/we ek)	Lab. (hours/we ek)	Credits	ECTS	
CMP 212	В	Spring	2.00	0.00	2.00	3.00	6.00	
	Lecturer	Artur Koci, PhD						
	Assistant	Erjola Osmani, Msc						
Course language		Albanian						
Course level		Bachelor						
	Description	Basic knowledge of logical circuits and their functionality. Numerical systems including binary, octal and hexadecimal systems, Weight codes. Analyze and build the logical circuit for encoders, decoders, multiplexer, and demultiplexer. Introduction to Boolean algebra and how this theory is used for simplifying logical functions. Concept of combinational circuits, bistable, sequential circuits						
	Objectives							
Co	ore Concepts	The student will learn the different numerical bases and the transformation between them. The student will know Boolean algebra and applications in logical circuits. The student will understand, design and analyze combinatorial circuits The student will understand, design and analyze sequential circuits						
Course Outlin	ne							
Week				Торіс				
1	Numerical systems. Decimal - binary transformation and vice versa.							
2	Octal and hexadecimal system. Binary-octal transformations, binary-hexadecimal transformation and vice versa							
3	Arithmetic op	ithmetic operations with binary numbers						
4	Codes							
5	Boolean algebra							
6	Logic Circuits. Introduction to combinational circuits							
7	Mid-term							
8	Combinatorial circuits: Logical gates and their use and the truth tables. Application of logic gates in the design of Combinatorial circuits							
9	Encoders and Decoders and their applications. Code converters							
10	Multiplexer ar	Multiplexer and its application						
11	Introduction to	o sequential circui	ts					
12	Flip-flops and	their design. SR Fl	ip-flop, JK and	D flip-flop . Ti	ruth tables			
13	Registers: Des	Registers: Design and their applications						
14	Registers: Design and their applications							
15	Sequential synchronous circuits, their analysis.							
16	Final Exam							

Prerequisites The student must attend the course at a minimum rate of 75%.			
Literature • Elektronika Digjitale dhe Mikroprocesorët -Jani Servini Zhaneta Servini			
References • Digital design :An introduction to the verilog hdl / M. Morris Mano, Michael Ciletti			
Course Outcome			
1	Studenti do të demonstrojë aftësi për të kuptuar logjikën, teorine, funksionin e kalimi si dhe algjebrën e Bulit		
2	Studenti duhet të jetë i aftë të kuptojë dhe analizojë teorinë e grafeve		
3	Studenti duhet të jetë i aftë të kuptojë dhe analizojë qarqet kombinatorike		

Studenti duhet të jetë i aftë të kuptojë dhe analizojë qarqet sekenciale

Course Evaluation

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In-term Studies	Quantity	Percentage
Midterms	1	25
Quizzes	0	0
Projects	1	10
Term Projects	0	0
Laboratory	0	0
Class Participation	1	10
Total in-term evaluation percent		
Final exam percent		
Total		

ECTS Workload (Based on Student Workload)

Activities	Quantity	Duration (hours)	Total (hours)	
Course duration (Including the exam week: 16x Total hours of the course)	16	4	64	
Study hours outside the classroom (Preparation, Practice, etc.)	14	2	28	
Duties	1	10	10	
Midterms	1	18	18	
Final Exam	1	30	30	
Other	0	0	0	
Total Work Load				
Total Work Load / 25 (hours)				
ECTS				