Course Name : Discrete Mathematics								
Course Code	Course Type	Regular Semester	Lecture (hours/we ek)	Seminar (hours/we ek)	Lab. (hours/we ek)	Credits	ECTS	
CMP 130	В	Spring	3.00	1.00	0.00	3.50	5.00	
	Lecturer	Anjeza Pasku, Ph	D					
	Assistant							
Cour	rse language	Albanian						
Course level		Bachelor						
	Description							
	Objectives							
Co	ore Concepts							
Course Outlin	ne							
Week		Торіс						
1	Elements of mathematical logics: Propositional logics and connectives. Propositional Equivalences. Applications of propositional logics.							
2	Predicates and quantifiers. Rules of Interference. Proof methods and strategy.							
3	Sets. Sequences and recurrence relations.							
4	Number Theory: Divisibility and modular arithmetic. Prime numbers, greatest common divisor and least common multiple.The Euclidian Algorithm and Bezout identity.							
5	Solving congruences. Applications of congruences.							
6	Mathematical	Mathematical induction, strong induction and well-ordering.						
7	Recursive definitions and structural induction. Recursive algorithms.							
8	Midterm exam							
9	Counting, the basic of counting. The Pigeonhole principle. Permutations and combinations. Binomial coefficients and identities.							
10	Advanced counting techniques. Applications of recurrence relations. Solving linear recurrence relations.							
11	Relations and their properties. Representing relations. Equivalence relations, partial orderings.							
12	Introduction to	o graph theory. Gr	aphs models.	Special types	of graphs			
13	Representing graphs and graphs isomorphism. Connectivity. Euler and Hamilton paths.							
14	Shortest path problems. Planar graphs and graph coloring.							
15	Trees and their applications.							
16	Final Exam							

Prerequisites		The student must attend the course at a minimum rate of 75%.			
Literature		Lecture Notes			
References		Discrete Mathematics and its Applications- Kenneth Rosen, 7-th Edition Discrete Mathematics-Richard Johsonbaugh, 6-th Edition			
Course Outcome					
1	Theoretical and practical training, sufficient for a successful and skillful profession of basic scientific knowledge in student practice.				
2	Skills and professional training in description, formulation, modeling and problem analysis, with consideration for appropriate analytical solutions in all necessary situations.				
3	Required techincal, academic and practical knowledge and confidence design and evaluation of mechanical systems with consideration for productivity, feasibility, and social and environmental aspects.				
4	Ability to design and run experiments, gather data, analyze and draw conclusions				

Course Evaluation

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Quantity	Percentage		
1	40		
0	0		
1	10		
0	0		
0	0		
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	3	42	
Duties	1	0	0	
Midterms	1	9	9	
Final Exam	1	10	10	
Other	0	0	0	
Total Work Load				
Total Work Load / 25 (hours)				
ECTS				