

	Course name: ENGR 202 Discrete Mathematics		Department: Computer Engineering				Semester
							4
	Methods of Education						Credit (ECTS)
	Lecture	Recitation/ (Etud)	Lab	Project/Field Study	Homework	Other	Total
56	0	0	0	42	70	168	6
Language	English						
Compulsory/Elective	Compulsory						
Prerequisites	None						
Course Contents	Week	Subjects					
	1	<ul style="list-style-type: none"> ▪ Propositional Logic, Propositional Equivalences ▪ Predicates and Quantifiers, Nested Quantifiers 					
	2	<ul style="list-style-type: none"> ▪ Introduction to Proofs, Proof Methods and Strategy. 					
	3	<ul style="list-style-type: none"> ▪ Sets, Functions 					
	4	<ul style="list-style-type: none"> ▪ Cardinality of Sets ▪ Sequences, Summation 					
	5	<ul style="list-style-type: none"> ▪ Induction 					
	6	<ul style="list-style-type: none"> ▪ The Basics of Counting. ▪ Permutations and Combinations 					
	7	<ul style="list-style-type: none"> ▪ Generalized Permutations and Combinations 					
	8	<ul style="list-style-type: none"> ▪ Binomial Coefficients and Identities ▪ The Pigeonhole Principle 					
	9	<ul style="list-style-type: none"> ▪ Discrete Probability 					
	10	<ul style="list-style-type: none"> ▪ Number theory 					
	11	<ul style="list-style-type: none"> ▪ Recurrence Relations ▪ Solving Linear Recurrence Relations 					
	12	<ul style="list-style-type: none"> ▪ Graphs and Graph Models ▪ Graph Terminology and Special Types of Graphs. 					
	13	<ul style="list-style-type: none"> ▪ Graph Isomorphism ▪ Graph Coloring 					
	14	<ul style="list-style-type: none"> ▪ Planar Graphs ▪ Trees 					
Course Objectives	<p>The purpose of this course is</p> <ul style="list-style-type: none"> • to give fundamental concepts in logic, combinatorics, probability, number theory and graph theory. • to teach basic tools of proving a mathematical proposition. • to give theoretical background on discrete mathematics. 						
Learning Outcomes and Competences	<p>Upon completion of this course students will</p> <ul style="list-style-type: none"> • be able to construct the truth table of a logical proposition, • be able to give a proof for a simple mathematical argument, • be able to solve a simple counting problem, • be able to model a recurrence relation, • learn basic graph theoretical terminology, • learn the bases of probability and number theory. 						
Textbook and /or References	<ol style="list-style-type: none"> 1) Rosen, K. H., <i>Discrete Mathematics and its Applications</i>, 7th edition McGraw Hill 2) Johnsonbough, R. , <i>Discrete Mathematics</i>, 8th edition Pearson. 						

Assessment Criteria		If any, mark as (X)	Percentage (%)
	Midterm Exams	X	40
	Quizzes		
	Homework		
	Projects		
	Term Paper		
	Laboratory work		
	Other		
	Final Exam	X	60
Instructors			