Faculty of Computers and Information Technology

Discrete Mathematics

Information :

Course Code :	MTH 111	**Level** :	Undergraduate	**Course Hours :**	3.00- Hours

Department :	Faculty of Computers and Information Technology

Instructor Information :

Title	Name	Office hours
Associate Professor	Khaled Ahmed Mohamed Elshafey	4
Teaching Assistant	Amany Hussein Hassan Mohamed Abou elnaga	2

Area Of Study :

The course introduces the concept of Sets; sequences, algorithms, induction and recursion; relations and functions; Graphs, lattices, number systems and codes, Boolean algebra; Formal logic; trees and languages; semi groups

Description :

Sets; sequences, algorithms and preudocode, induction and recursion; relations and functions; Graphs, lattices, number systems and codes, boolean algebra; Formal logic; trees and languages; semi groups.

Course outcomes :

a.Knowledge and Understanding: :

1 -	Distinguish between sets and binary relations
2 -	Use binary relations and functions to visit some applications such as database systems and cryptography systems
3 -	Understand the logic and propositional calculus
4 -	Apply the graph theory concepts
5 -	Identify and use planner graphs and shortest path problems

b.Intellectual Skills: :

1 -	Use and construct trees and tree terminology
2 -	Use and construct binary search trees
3 -	Use the logic and propositional calculus to solve some problems in the inference and reasoning such as the expert systems
4 -	Use and construct graphs and graph terminology

c.Professional and Practical Skills: :

1 -	Students should be able to analytically solve many problems
2 -	Students should be able to visit some applications in discrete mathematics
3 -	Students should be able to use a certain mathematics tool

d.General and Transferable Skills: :

1 -	Students use visual aids to search for information and engage in life . Áong self learning discipline

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2 -	Students use visual aids to show representation on any part of course
3 -	Students prepare report on assignment
4 -	Students become aware for keywords and abbreviations used for computer science

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Sets	3	2	2
Relations	3	2	2
Functions	3	2	2
Logic and Propositional Calculus	3	2	2
Techniques of Counting	3	2	2
1st Midterm	2	1	2
Advanced Counting Techniques and Recursion	3	2	2
Graph Theory	3	2	2
Directed Graphs	3	2	2
Binary Trees	3	2	2
Properties of the Integers	3	2	2
2nd Midterm	2	1	2
Boolean Algebra	3	2	2

Teaching And Learning Methodologies :

Lectures
Presentation
Exercises
Open Discussion
Case Study

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Course work (class participation, assignments, quizzes and lab work)	20.00	2	
Final Exam	40.00	15	
Mid Term Exam II	20.00	12	
MidTerm Exam I	20.00	6	