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BGS INSTITUTE OF TECHNOLOGY, B G NAGAR
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
COURSE OUTCOMES AND CO-PO-PSO MAPPING

Course Coordinators: Arpitha K / Amulya M P / Sheela S K
Semester & Section: III, A & B
Academic Year: 2019-2020
Course Code: 18CSL38
Course Name: Discrete Mathematical Structures Laboratory

After studying this course, students will be able to:	
CO1	Analyse the critical thinking of mathematics.
CO2	Apply the principles and properties of counting and integers.
CO3	Understand the principles and properties of relations, functions, inclusion and exclusion.
CO4	Apply the principles and properties of trees and graphs.
CO5	Understand the usage of MiniTab to solve the problems and plot the graph.

CO/PO'S	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	P010	PO11	PO12	PSO1	PSO2
CO1	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**
CO2	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**
CO3	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**
C04	**3**	**3**	**3**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**
CO5	**3**	**3**	**2**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**
AVG	**3**	**3**	**2.8**	**2**	**2**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**	**-**

PSO1	Ability to apply Mathematical Methodologies, Management Principles and Ethics, Electronics and Embedded Systems and Programming Technologies to solve real time problems.
PSO2	Ability to apply software design and development practices to develop software in emerging areas such as Internet of Things, Data Management, Social Networking and Security, Cloud and High-Performance Computing.

COs	Levels	Justification
CO1.PO1	**3**	Reason mathematically about basic data types and structures (such as numbers, sets, graphs) used in computer algorithms and systems
CO1.PO2	**3**	The real life events can be represented and verified using Mathematical logic.
CO1.PO3	**3**	Reasoning is made possible for engineering problems
CO1.PO4	**2**	Model and analyse computational processes using analytic and combinatorial methods.
CO1.PSO1	**3**	The reasoning and inferences made by them can be substantiated by the various proof techniques.
CO2.PO1	**3**	The arrangement and combinations of data to be taken for different problems can be identified.
CO2.PO2	**3**	It provides the ability to count items in any number of collections.
CO2.PO3	**3**	Counting techniques can be used to visualize the complex engineering problems involving sets of data.
CO2.PO4	**2**	Use abstract structures to represent discrete objects and their interrelationships.
CO2.PSO1	**3**	Counting techniques can be used to reach conclusions in the problems involving huge data.
CO3.PO1	**3**	The concepts of discrete structures can be used to solve various complex engineering problems
CO3.PO2	**3**	The knowledge about the discrete computational structures will help them to reach conclusions about the complexity and methodologies for solving real life problems
CO3.PO3	**3**	Discrete structures can aid in the representation of various real life problems
CO3.PO4	**2**	Apply the mathematical concepts learned to various areas of computer science.
CO3.PSO1	**3**	Helps to identify the relations among the different datasets.
CO4.PO1	**3**	Knowledge of graph and different terminologies in graph shall help to clearly understand the basics of many engineering concepts.
CO4.PO2	**3**	Learning to use graphs to solve real world problems helps to analyse and judge the real world problems and deduce which type of graph to be considered for a particular problem and how to map it with regard to the problem.
CO4.PO3	**3**	Using different graph theoretical algorithms helps the students to develop efficient algorithms for different complex, real world problems.
CO4.PO4	**2**	Able to apply the fundamental concepts in graph theory in view of its applications in modern science.
CO4.PSO1	**3**	Learning how to represent graphs by different programming structures available in computer programming makes a student capable of converting his knowledge in graph theory to developing programs to demonstrate the different graph theoretical operations.
CO5.PO1	**3**	All algorithms can be compared using a single measure to identify the amount of computations involved in them so that the optimal one can be identified.

CO5.PO2	**3**	It enables to review the possibility of overlap between two or more collections so that we can accurately count the number of items in one collection or the other.
CO5.PO3	**2**	It helps to analyse the complexity and choose the best method for the particular problem.
CO5.PO4	**2**	Able to interpret the different datasets conveniently.
CO5.PO5	**2**	This is instrumental in some computational problems such as the evaluation of system reliability or the calculation of the probability in diagnosis.
CO5.PSO1	**3**	The aid of pictorial representations of the analysed data helps to represent the real world problem in simple manner.