

Trinity Institute of Innovations in Professional Studies

Plot No. 2B/1, Knowledge Park - III, Greater Noida

SUBJECT LESSION PLAN

Course & Semester: B. Tech. (3rd sem)

Batch: 2021-25

Subject Name: Discrete mathematics

Paper Code: CIC-205

Unit	Lecture No.	Proposed date	Lecture content	Actual date	Remark
Unit- I	1	14/9/2022	1. Set, subset, power set and set operation	14/9/2022	Completed
	2	15/9/2022	2. Preposition logic,	15/9/2022	
	3	16/9/2022	3. Rule of Inferences	16/9/2022	
	4	19/9/2022	4. Predicates, Quantifiers,	19/9/2022	
	5	20/9/2022	5. Theory of inferences for predicate calculus,	20/9/2022	
	6	21/9/2022	6. Proof techniques: Direct Proof, Proof by Contraposition,	21/9/2022	
	7	22/9/2022	7. Proof by contradiction	22/9/2022	
	8	26/9/2022	8. Principle of inclusion and exclusion (with proof)	26/9/2022	
	9	27/9/2022	9. Pigeonhole principle, permutation and combination	27/9/2022	
	10	28/9/2022	10. Principle of mathematical and complete induction,	28/9/2022	
	11	28/9/2022	11. Relation, operation & representation of relation,	28/9/2022	
Unit-II	1	3/10/2022	1. Function, growth of function	3/10/2022	Completed
	2	4/10/2022	2. Permutation function, Partially order set	4/10/2022	
	3	6/10/2022	3. Lattice, Boolean algebra,	6/10/2022	
	4	10/10/2022	4. GCD, LCM, prime number	10/10/2022	
	5	11/10/2022	5. Recurrence relation, solution method for linear	11/10/2022	
	6	12/10/2022	6. 1 st order recurrence relation, generating function	12/10/2022	

	7	13/10/2022	7. Analysis of algorithm using recurrence relation,	13/10/2022	
	8	17/10/2022	8. Solution method for a divide and conquer recurrence relation	17/10/2022	
	9	18/10/2022	9. Masters theorem (with proof)	18/10/2022	
Unit-III	1	19/10/2022	1. Semi group, monoid, group, group identity and uniqueness	19/10/2022	
	2	20/10/2022	2. Inverse and its uniqueness,	20/10/2022	
	3	25/10/2022	3. Isomorphism & Homomorphism,	25/10/2022	
	4	26/10/2022	4. Sub group, cosets and Lagrange's theorem,	26/10/2022	
	5	27/10/2022	5. Permutation group and Cayley's theorem (without proof)	27/10/2022	
	6	31/10/2022	6. Normal subgroup and quotient group	31/10/2022	
	7	1/11/2022	7. Groups and coding	1/11/2022	
Unit-IV	1	2/11/2022	1. Graph terminology, planar graph, Euler formula (proof)	2/11/2022	
	2	3/11/2022	2. Euler and Hamiltonian path/circuit	3/11/2022	
	3	7/11/2022	3. Chromatic number of graph, five colour theorem (proof)	7/11/2022	
	4	8/11/2022	4. Shortest path and minimal spanning trees and algorithm	8/11/2022	
	5	9/11/2022	5. Depth-first and breadth first search (DFS & BFS)	9/11/2022	
	6	11/11/2022	6. Trees associated with DFS & BFS	11/11/2022	
	7	12/11/2022	7. Connected components,	12/11/2022	
	8	13/11/2022	8. Complexity analysis of the graph MST	13/11/2022	

Text Books:

- 1 Norman L. Biggs, "Discrete Mathematics", Oxford, second edition.
- 2 Kenneth H. Rosen, "Discrete Mathematics and Its Applications", TMH, seventh edition.

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