

JIS College of Engineering
(NAAC 'A' Accredited Autonomous Institution)

Syllabus for M. Tech (PGCS) 1ST YEAR 1ST SEM

Paper Name: Discrete Structure

Paper Code: PGCS 101

Contact: 3L+1T

Credits: 4

Course contents

Module I

Review of Set Theory, Combinatorics, Basic Combinatorial Numbers, **12L**

Module II

Generating Functions and Recurrence Relations, Inclusion-Exclusion Principles, **6L**

Module III

Graph Theory, Connectivity, Matching, Hamiltonian Cycles, Coloring Problems, **10L**

Module IV

Algebraic Structure, Groups, Rings and Fields, Probabilistic Methods **12L**

Suggested Text / Reference Books:

1. Somasundaram, "Discrete Mathematical structures", PHI
2. Kolman, Busby & Ross, "Discrete Mathematical structures 5th ed", PHI
3. V. Krishnamurthy, "Combinatorics, Theory and Applications", East-West Press, 1985.
4. N. Alon and J. Spenser, "Probabilistic Methods", John Wiley and Sons, 2nd edition, 2000.
5. R. Diestel, "Graph Theory", Springer-Verlag, 2nd edition, 2000.
6. I. N. Herstein, "Topics in Algebra", Vani Educational Books, India 1986