

B.Sc. (H) Computer Science II Semester (NEP)

Discrete Mathematical Structures Guidelines

S. No.	Topic	Reference	Contents	Lectures
1	Unit 1 - Sets, Relations and Functions	[2]	2.1 (upto example 21), 2.2, 2.3, 2.4: 2.4.1, 2.4.2, 2.4.5 8.5 9.1, 9.3: 9.3.1, 9.3.2, 9.4: 9.4.1, 9.4.2, 9.4.3, 9.4.4, 9.5: 9.5.1, 9.5.2, 9.6: 9.6.1, 9.6.2, 9.6.3	7 9.1 to 9.6
2	Unit 2 - Logic and Proofs	[2]	1.1, 1.2, 1.3 (upto 1.3.5), 1.4 (upto 1.4.3), 1.6 (upto 1.6.6), 1.7 5.1: 5.1.1 to 5.1.7 (upto page 343)	11 1.7
3	Unit 3 - Number Theory	[2]	4.1, 4.2, 4.3: 4.3.1, 4.3.2, 4.3.3, 4.3.6, 4.3.7	7
4	Unit 4 - Combinatorics	[1] [2]	2.1 to 2.4 6.2 (upto 6.2.1)	5 2.1 to 2.4 6.2 (6.2.1)
5	Unit 5 - Graphs and Trees	[2]	10.1 (upto page 676), 10.2: 10.2.1, 10.2.2, 10.2.3, 10.3 (excluding algorithms and application of isomorphism), 10.4: 10.4.1, 10.4.2, 10.4.3, 10.4.4, 10.4.5, 10.5: 10.5.1, 10.5.2, 10.5.3, 10.6: 10.6.1, 10.7: 10.7.1, 10.7.2 11.1: 11.1.1, 11.1.3: Theorem 2 only with proof	10
6	Unit 6 - Recurrences	[1]	8.1, 8.2 9.1, 9.2, 9.3	5

Note: 1. Exclude proofs of theorems, lemmas and corollaries.

2. Guidelines have been prepared according to soft copy of reference [2].

3. Practical implementation to be done in either Python or C++.

References

1. Liu, C.L., Mohapatra, D.P. Elements of Discrete Mathematics: A Computer Oriented Approach, 4th edition, Tata McGraw Hill, 2017.
2. Rosen, K.H.. Discrete Mathematics and Its Applications, 8th edition (soft copy), Mc Graw Hill, 2018.

Practical List:

Refer to syllabus draft on [1. DSCs UGCF CS\(H\) approved facultyMay25 \(du.ac.in\)](#) (page 20).