

NOC: Discrete Mathematics - Video course

COURSE OUTLINE

In this course we will cover the basics of discrete mathematics. We will be learning about the different proof techniques and how to use them for solving different kind of problems. We will introduce graphs and see how graphs can be used for modeling of different problems and see how this can help in solving problems. We will learn how to count the number of possibilities that can arise in different situations.

COURSE DETAIL

Week No.	Topics
1.	Introduction to Propositional Logic, Number System, Sets and Functions
2.	Proof Techniques - Direct Proofs
3.	Proof Techniques - Contradiction
4.	Proof Techniques - Contrapositive, Induction
5.	Proof Techniques - Induction
6.	Asymptotic Notations, Recurrences
7.	Generating functions
8.	Introduction to Graph, Modelling in Graphs
9.	Proof of Graph Properties
10.	Counting- Permutation, Combination, Binomial Coefficients
11.	More Counting - Ball and Bins Problem
12.	Counting- Catalan Numbers



NP-TEL

NPTEL

<http://nptel.ac.in>

Mathematics

Pre-requisites:

Comfortable with class 12 mathematics

Coordinators:

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