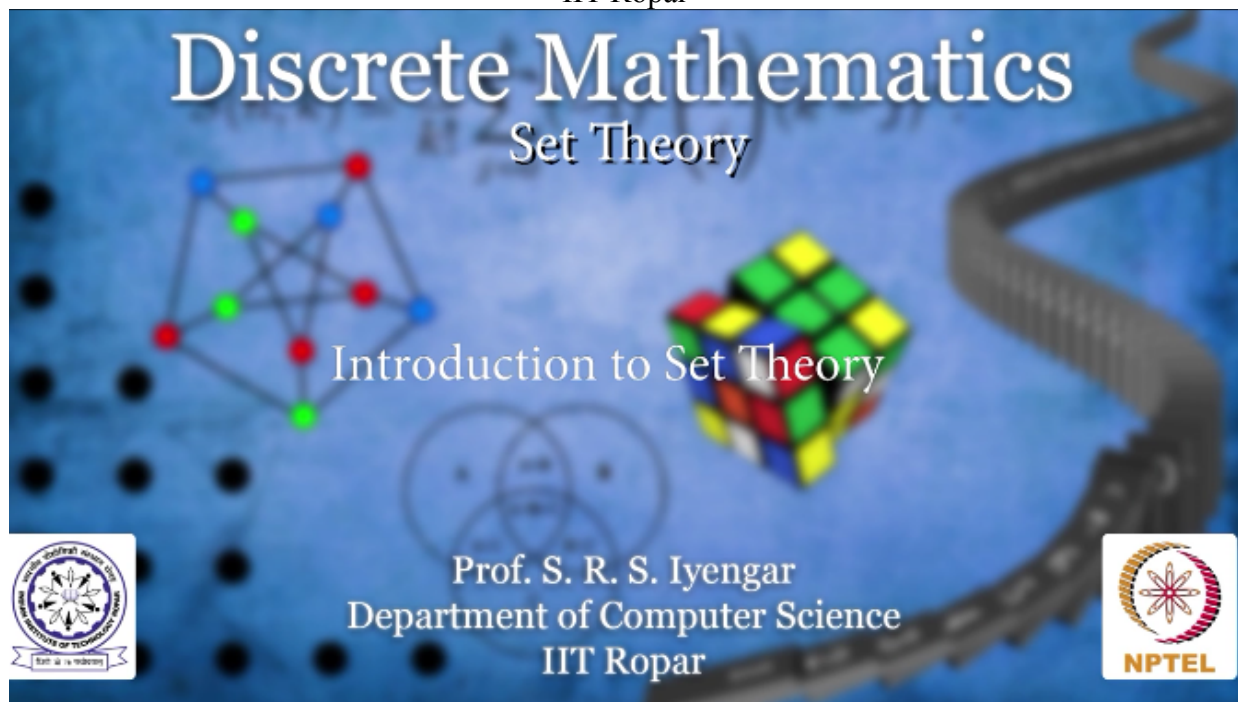NPTEL

NPTEL ONLINE CERTIFICATION COURSE

Discrete Mathematics
Set Theory

Introduction to Set Theory

With
Prof. S.R.S. Iyengar
Department of Computer Science
IIT Ropar

"No one shall expel us from the paradise which Cantor has created for us."
- David Hilbert

[Expressing the importance of Georg Cantor's set theory in the development of mathematics.]

Our focus so far has been on counting in general, counting most of the times involves counting the number of elements in a given set. Now what is a set? Although most of you know the definition of the set and some foundational aspects of set theory, we'll cover in this chapter those concepts that are interesting and important in the discrete mathematics point of view.
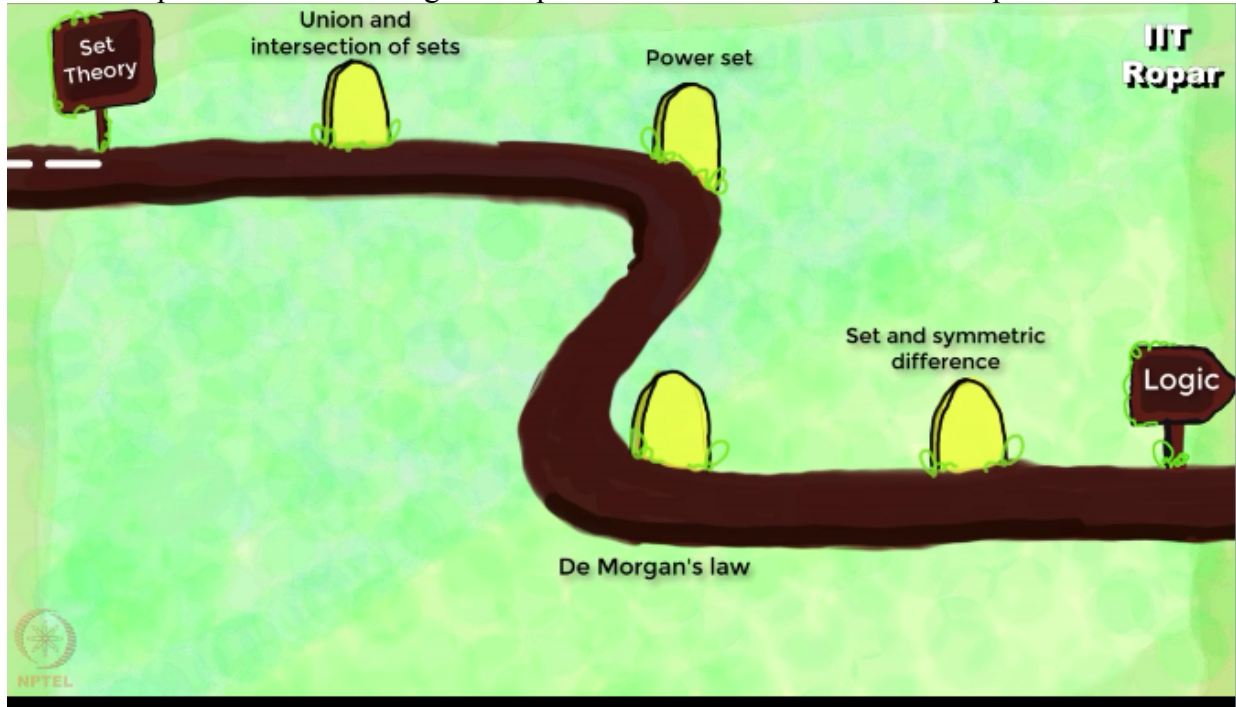
Most of us have studied what one means by a set, throughout our school days in fact, it's part of several math curriculums all over the world, but still for completeness sake in discrete mathematics we have to discuss about set theory, so what I will do is I'll very briefly touch upon some of the basic concepts that we all know, but I'll sort of make it self-contained that I'll not be assuming that you all know it good deal, I'll define everything from first principals. I need to solve a whole lot of problems to give us some sort of practice on how to handle a set, and what is set theory all about.

IIT MADRAS PRODUCTION

Founded by
Department of Higher Education
Ministry of Human Resource Development
Government of India

www.nptel.iitm.ac.in