

Short Term Course on

THE SHEER JOY OF MATHEMATICS

Kaushal Verma
Department of Mathematics, IISc



भारतीय विज्ञान संस्थान

Course Schedule

01-01-24 to 15-04-24

Mondays and Thursdays

from 6 pm - 7 pm

Course Mode: Offline

Accommodation

Not Available

Course Fee per participant: Rs.1000+18%GST

Registration Deadline: 20th December 2023

Registration link:

<https://iisc.online/shortterm/home.html>

Minimum Qualification Required

- 1.Students pursuing BSc/MSc (science stream, any year), BE/BTech/MTech/ME (any discipline, any year)
- 2.Teachers (Class 11 and 12 and higher in science stream),
- 3.Those with non-science backgrounds who are curious about mathematics and are willing to learn are also encouraged to apply

Course Content

Introduction

This is a course for those with a healthy curiosity and the cognoscenti. To educate for a purpose is not the intent. Rather, it is to provide a loosely structured mode of engagement to appreciate the ubiquity of mathematics as a human endeavour. The topics listed below have been selected to convey a sense of diversity and harmony. While some of them are taught to some degree, the emphasis here will be on moving beyond existing curricula by retrieving and highlighting lesser-known insights into their structure. The course will be accessible to students (undergraduate and above) and teachers in any science/math program.

Topics

- Unit 1 Polynomials: Equations of degree 3, 4 and 5. Chebyshev polynomials, Geometry of polynomials
- Unit 2 Excursions in Geometry: Inversive geometry and applications, the Hexlet, Conic sections, topics in Euclidean Geometry
- Unit 3 Differential Equations: Examples from mechanics, Continuum models (heat flow, fluid flow, vibrations and waves), discussion on some topics from Newton's Principia
- Unit 4 Using a 3D printer for math visualization - possibilities and challenges.

Centre for Continuing Education
Indian Institute of Science
Bengaluru 560 012, INDIA.
Phone: 91 080 2293 2055/2491/2247

