

# Short Term Course on

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# THE SHEER JOY OF MATHEMATICS - 2

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**Course Schedule**  
05-08-24 to 28-11-24  
Mondays and Thursdays  
from 5:30 pm – 6:30 pm  
Course Mode: Offline  
Accommodation Not Available

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

Registration Deadline: 25th July 2024

Registration link:

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

For Apply



## Minimum Qualification Required

The course will be accessible to students (undergraduates and above) and teachers in any science/math program.

**Prerequisite:** None

## 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: Projective Geometry: history, basic principles, collineations and their properties.

Unit 2: Conic Sections: history, elementary properties, polar correspondence, duality principle, Poncelet's theorem.

Unit 3: Numerical Methods: Why and how? Interpolation, Quadrature, Ordinary Differential Equations, Eigenvalues, Fourier Series.

Unit 4: Using a 3D printer for math visualization and the role of computation - possibilities and challenges.

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