

Lecture Programme for students of class XI and XII,
in association with National Academy of Sciences, Allahabad,
to be held at the Chennai Mathematical Institute, Siruseri
on 18th & 19th July 2016.

Monday, 18th July:

<u>Time</u>	<u>Speaker</u>	<u>Title</u>
10.00-11.00	Alok Laddha, CMI	Einstein, Gauss, Gravity and all that <u>Abstract:</u> In this talk, we introduce Einstein's theory of Gravity (known as General Relativity). We will give a historical perspective of how Einstein arrived at his theory and explain its deep and beautiful links with geometry. We will also see how one of the key equations on Einstein's theory was in fact a theorem formulated by Gauss in an entirely different context.
11.00-11.30		Discussion
11.30-11.45		Tea break
11.45-12.45	R. Ramamnujam, IMSc.	Games for the Internet <u>Abstract:</u> Underlying all computer software are algorithms (which are systematic solutions to be implemented by computers). In the case of the Internet and computer networks, these are "distributed" algorithms to be implemented by several computers together using communication. These can be understood as games, with players acting alone or in teams. The talk will illustrate a few of these problems and games.
12.45-13.15		Discussion
13.15-14.15		Lunch
14.15-15.15	Vijay Ravikumar, CMI	Pascal's triangle evened out <u>Abstract:</u> Often the most interesting patterns emerge only when we 'forget' much of what we know about an object. We will investigate a curious property of the odd entries of Pascal's triangle, and in the process we will play around with modular arithmetic and discover a family of 'self-similar' fractals residing within.
15.15-15.45		Discussion
15.45-16.00		Tea break & disperse

Tuesday, 19th July:

<u>Time</u>	<u>Speaker</u>	<u>Title</u>
10.00-11.00	Sourish Das, CMI	Applications of Mathematics in Climate Change <u>Abstract:</u> In this talk, I will discuss how to measure vast area from the geographical map using concepts of the geometry of squares and circle. I will gently touch concepts of limits using the visual tool. Then I will touch the concepts of function and try to understand the effect of climate change using visual representation of functions. Discussion
11.00-11.30		Tea break
11.30-11.45		
11.45-12.45	G. Krishnamoorthy, Anna University	Chemistry In Biology <u>Abstract:</u> In this talk I will illustrate how there is a continuum between Chemistry and Biology. I will take several examples from current research areas in modern biology and demonstrate the chemical basis of the biological world. Discussion
12.45-13.15		Lunch
13.15-14.15		
14.15-15.15	Meena Mahajan, IMSc.	Searching with errors <u>Abstract:</u> How does one search in a bulky telephone directory or a dictionary? In this day and age, we don't; we use a computer to do the looking up! But how does the computer search so fast through a huge list available, say, on a CD? What if the CD is a bit scratched? Enter the fascinating world of codes ... Discussion
15.15-15.45		Tea break & disperse
15.45-16.00		