Science Academies' Lecture Workshop on "Algebra and Geometry"

Organised by

Department of Mathematics, Central University of Jammu

Funded by

IASc. Banglore, INSA New Delhi, NASI Allahabad

March 24-25, 2017

Venue : Department of Mathematics, Central University of Jammu
Temporary Academic Block, Sainik Colony, Jammu

About the University

The Central University of Jammu has been established by the Central Universities act 2009 (Act No 25 of 2009) read with the Central Universities (Amendment) Act, 2009. However, The Central University of Jammu actually came into being on 08 August 2011. Presently nineteen departments and two centres are functioning in the University. The Central University of Jammu aspires to be one of India's leading University offering innovative, responsive and high quality educational opportunities at the under graduate, post-graduate and doctoral level. We aim to enable individuals to realize and develop to the fullest, their physical and intellectual potentialities; promote social and human values; to facilitate pursuit of knowledge and academic excellence.

Objective of the Workshop

The objective of the workshop is to expose the participants from fundamentals to the frontiers of research in Algebra and Geometry. The workshop is devoted to basic as well as advanced topics in Algebra and Geometry.

About the Workshop

The theme of this lecture series is to relate various aspects in algebra and geometry. The main topics to be covered in this lecture series are Groups and Symmetry, Elliptic Curves, Combinatorics, Some Arithmetical functions, Rings and its applications. All these topics are very beautifully related to each other.

Like Group theory is the study of symmetry. When we are dealing with an object that appears symmetric, group theory can help us with the analysis. Conservation laws of physics are related to the symmetry of physical laws under various transformations. Modern particle physics would not exist without group theory.

The structure and behavior of molecules and crystals depends on their symmetries. Thus group theory is an essential tool in some areas of chemistry.

Pythagoras' dictum that `all is number' is well-known. Any vector in universe is nothing but an infinte- tuple of numbers. Our models of the world are so dependent on numbers that one might expect all mathematicians to be number theorists, and may be in some sense they are. Galois found a way to attach a finite group to each polynomial. He could give explicit examples of fifth degree polynomials, such as $x^5 - x - 1$, whose roots can't be described by anything like the quadratic formula. So, the world is nothing but all numbers and so deals with number theory and groups.

Also, the rapid increase of information transmitted electronically resulted to an increased reliance on cryptography and authentication. Elliptic curve cryptography (ECC) is an approach to public-key cryptography based on the algebraic structure of elliptic curves over finite fields. Here the use of group theory derives not from the "symmetry" perspective, but from the efficiency or difficulty of carrying out certain computations in the groups.

Combinatorics has a great significance in the field of computer science. The topic is greatly used in the Designing and analysis of algorithms.Combinatorial group theory is the theory of free groups.

Who can apply

UG students / PG students/ Research Scholars / Faculty members

Application Procedure

Application Form and other information are available on the website: http://www.cujammu.ac.in Application may also be made on a plain paper, giving the following information: Name, Date of Birth, Gender, College/University/ Institute where enrolled, Full address of correspondence, e-mail address, educational qualification etc. duly attested by the Principal / Head / Regular Faculty of your college / department and send a scan copy at : pavinders@gmail.com
cujmathdeptt@gmail.com

Note : There shall be no registration fee

Convener
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Dr. Chanchal Kumar, IISER Mohali
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Prof. Maneesh Thakur, ISI Delhi

Important Dates

Application available on the website	**: 2st March, 2017**
Deadline for receiving completed application form	**: 17th March, 2017**
List of selected candidates on the website	**: 20th March, 2017**