



Advanced Training in Mathematics Schools

Supported by *National Board for Higher Mathematics*

Advanced Instructional School in Commutative Algebra

Venue: *Department of Mathematics, IIT Bombay*

14 May - June 3, 2009

Conveners: J. K. Verma and Tony J. Puthenpurakal

Brief Description of ATM Schools

Advanced Training in Mathematics (ATM) Schools are a joint effort of more than 50 active researchers across the country with support from the National Board for Higher Mathematics. The programmes are conducted in reputed mathematics departments in Summer and Winter each year. In these Schools, the emphasis will be on problems solving and on highlighting inter-relations of basic subjects in mathematics. The schools are offered mainly for Ph.D. students and lecturers. At the initial stage, ATM Schools consist of two Annual Foundation Schools (AFS I & II) in basic topics such as algebra, analysis, and topology. At a later stage, Advanced Instructional Schools in different topics in Mathematics are organised especially for students who wish to pursue research in related areas.

Advanced Instructional School in Commutative Algebra

In this school, The academic content will be divided into following major topics:

Prime Ideals and Localization, Filtrations and graded rings, Hilbert-Samuel Polynomials, Dimension of Integral Extensions, Dimension theory for Affine algebras, Homology of complexes, Depth of a module, Cohen-Macaulay modules, Regular local rings, Jacobian Criterion.

A special feature of this AIS programme is the inclusion of "Unity of Mathematics Lectures" on Stanley's Upper Bound Theorem on Spheres.

Resource persons

Clare D'Cruz	CMI, Chennai
Balwant Singh	IIT Bombay
Tony J. Puthenpurakal	IIT Bombay
J. K. Verma	IIT Bombay
A. V. Jayanthan	IIT Madras
K. N. Raghavan	IMSc, Chennai

Unity of Mathematics Lectures

R. C. Cowsik, University of Mumbai

Eligibility for Participation

The school will admit 40 students in their first and second years of Ph.D. programme, and a few young university lecturers and college teachers. Students who have attended AFS-I/II before will be given preference to attend this school.

Financial Support

Selected participants will be paid III-AC return train fare from their place of work/home town to the venue by shortest route and provided with accommodation and local hospitality.

How to Apply

The syllabus, application form and other information about the programme is available on the website:

<http://www.bprim.org/atm>

Applications may also be made on plain paper, giving the following information: Name, Date of Birth, Age, Gender, Institute/Department, Areas of interest, Address for correspondence, email address, City, State, Pincode, Academic Record: B.Sc./M.Sc. with names of the Institutes. These should be attested by Head/Principal of the institute.

Completed application forms should reach

Prof. J. K. Verma / T. Puthenpurakal
Coordinator, AIS in Commutative Algebra
Department of Mathematics, IIT Bombay,
Powai, Mumbai 400 076
e-mail: verma.jugal@gmail.com, tputhen@gmail.com
Phone: (JKV) (O) 022-2576-7450, (R) 022-2576 8478,
(TJP) (O) 022-2576-7487

by **Monday, 30th March, 2009**. List of selected candidates will be posted on the website of ATM Schools on **Monday, 6th April, 2009**.

National Coordinating Committee

Director	R. S. Kulkarni	IIT Bombay
Secretary	J. K. Verma	IIT Bombay
Members	S. D. Adhikari	HRI, Allahabad
	Satya Deo	HRI, Allahabad
	S. A. Katre	Pune U., Pune
	Shobha Madan	IIT Kanpur
	I. B. S. Passi	Panjab U., Chandigarh
	R. A. Rao	TIFR, Mumbai