

National Workshop
on
Block Designs and their Applications
February 05-08, 2011

Sponsored
by
Department of Science & Technology
Government of India, New Delhi



Organized by
Centre for Mathematical sciences (CMS)
Apaji Institute of Mathematics &
Applied Computer Technology
Banasthali University
Banasthali 304022 (Rajasthan)

University for women, University with a difference

Banasthali University, for women education is a unique university, which offers an integrated system extending from the primary to the Ph.D. level. It was founded on October 6, 1935 and attained deemed to be university status on October 25, 1983.

The University aims at the synthesis of spiritual values of the east and scientific achievements of the west. It develops all round personality of its students through its five fold education programme. Considering its relatively short existence as a University, the institution has made phenomenal progress. At present, it has around 20 teaching departments offering 100 courses, over 550 teachers and nearly 8000 students. The institution offers several programmes in the emerging areas, which include advanced courses at undergraduate and postgraduate levels in Management, Biotechnology, Computer Science, Information Technology, Mathematical Sciences, and Electronics, besides the traditional courses in Humanities, Social Sciences, Home Science, Education and Fine Arts.

Apaji Institute of Mathematics and Applied Computer Technology (AIM & ACT) was founded in 1999 with the objective of achieving synergy between teaching and research in Computer Science, Electronics, Mathematics, and Statistics. Physics, Bio-informatics and Information Technology have been also added to this list later.

In this short span of about twelve years, Apaji Institute with its world-class infrastructure and education programmes has earned the reputation of one of the best centre of teaching and research not only in the state but also in India. The students get placement in all leading companies and organizations. Many of them have gone abroad for higher education and research.

One of the strong points of Apaji Institute is to infuse logical abilities and abstract thinking in its students by integrating learning of Mathematics in all its programmes. The ambitious programme of M.Sc. (Mathematical Science) was designed with inputs from leading experts from IIT's, IISc and TIFR and offers several specializations such as Theoretical Computer Science, Statistics and Operation Research in addition to Pure and Applied Mathematics in the institute. Now M.Phil. programme in Mathematical Science has also been started to provide the required research orientation to the desirous students. Institute has initially conducted the following major events for enhancements of R& D and making a recurrent research environment.

- i. National Seminar on Recent Trends in Combinatorics and its Applications (March 2006).
- ii. Training programme on 'Stochastic Process Modeling' (Dec 2-15, 2006).
- iii. National Workshop on 'Models of Embedded Computation' (March 2007).

To motivate research, Department of Science and Technology Govt. of India have declared Banasthali University as the **Centre for Mathematical Sciences (CMS)** in November 2007. The three years of the establishment of the centre witnessed significant increase in the academic activities of the CMS. In addition to the usual seminar and in-

house research the following conferences, workshops and training programmes were held:

- i. National Workshop on Bayesian Techniques and its Applications (October 1-7, 2008)
- ii. Training Programme on Optimization Techniques (December 24-29, 2008)
- iii. Pre Conference workshop on Discrete Mathematics (January 6-10, 2009)
- iv. Jubilee Conference on Discrete Mathematics (January 11-13, 2009)
- v. Seminar on Time series Modeling (Oct 3-6, 2009)
- vi. Workshop on Mathematical Modeling (December 15-19, 2009)
- vii. Workshop on Discrete Mathematics (May 1-5, 2010)

The events had very distinguished experts from the fields from IISc Bangalore, ISI Kolkata, ISI Delhi, IIT Mumbai and TIFR Mumbai, B.H.U. Varanasi, ISI, Hyderabad, ISI, Coimbatore.

This year also workshops on core areas of **Centre for Mathematical Sciences** have been planned. National Workshop on Block Designs and their applications is one of the activities to be held to promote research in Block Designs.

National Workshop on Block Designs and their Applications

Design of experiments (DOE) or experimental design is the design of any information-gathering exercises where variation is present, whether under the full control of the experimenter or not. It is a strategy to gather empirical knowledge, i.e. knowledge based on the analysis of experimental data and not on theoretical models. It can be applied when investigating a phenomenon in order to gain understanding or improve performance. Building a design means carefully choosing a small number of experiments that are to be performed under controlled conditions.

In the design of experiments, the experimenter is often interested in the effect of some process or intervention (the "treatment") on some objects (the "experimental units"), which may be people, parts of people, groups of people, plants, animals, etc. Design of experiments is thus a discipline that has very broad application across all the natural and social sciences. On the other hand much of work is going on construction and combinatorial problems in Block designs. Combinatorial Design theory is a emerging field on which researchers are focusing these days.

The workshop is intended for young faculty and researchers from Mathematical sciences and Computer Science who is interested in the field from in and out Banasthali. Topics to be covered in the workshop are given below:

Course Content:

- ANOVA & ANOCOVA Models
- Connectedness & Orthogonality
- Intrablock Analysis of Connected Non-orthogonal Block Designs
- Balanced Incomplete Block Designs [BIBDs]
- Optimal Designs
- Applications

The eminent speakers in the field of Block designs are invited to deliver lectures. The list is given below.

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|--------------------------|-------------------------------|
| 1. Prof. Alope Dey | ISI, Delhi |
| 2. Prof. B.K.Sinha | ISI Kolkata |
| 3. Prof.D.K.Ghosh | Saurashtra University, Rajkot |
| 4. Prof. Mausami Bose | ISI, Kolkata |
| 5. Prof.Ashish Das | ISI, Delhi |
| 6. Prof. Rahul Mukherjee | IIM, Kolkata |

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IMPORTANT DATES

Registration Deadline: Jan. 05, 2011

Announcement of final list of participants: Jan. 10, 2011

There is no registration fee. The selected participants will be informed by mail/phone/fax. They will be reimbursed second class train/bus fare to and from Banasthali and will be provided free lodging and boarding at Banasthali University.

The completed registration form should be posted to:

The Coordinator

National Workshop on Block Designs and their applications

Centre for Mathematical Sciences (CMS)

Apaji Institute of Mathematics and Applied Computer Technology

Banasthali University-304022

Rajasthan

Phone: (01438) 228647/48 Fax: (01438) 228649

Or

It can be mailed at nwbda.cms@gmail.com (Be careful about the dot in e-mail address for correspondence)

(Registration form can be downloaded from the university website www.banasthali.org)

Contact:

AIM & ACT

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Banasthali (Rajasthan) 304022

Phone: (01438) 228647/48 Fax: (01438) 228649

Email: nwbda.cms@gmail.com

How to reach Banasthali University:

Banasthali is located 72 km from Jaipur, 8 km off on Jaipur Kota road. Frequent bus service is available for Banasthali University campus/Newai from main Bus Stand (Sindhi Camp) Jaipur. Newai is 10 km from Banasthali. Conveyance is available at Banasthali Newai (WR, Jaipur Kota Broad-guage Line) Railway Station. Jaipur (Sanganer) Airport is 59 kms from Banasthali.