



**Department of Mathematics  
and  
Internal Quality Assurance Cell (IQAC)  
P.G.D.A.V. College  
University of Delhi**

*is organizing*

**TWO WEEK  
(ONLINE) FACULTY DEVELOPMENT PROGRAMME**

*on*

**BIOMATHEMATICS**

(15<sup>th</sup> – 28<sup>th</sup> October, 2020)

(02:00PM-06:00PM)

*in collaboration with*

**Mahatma Hansraj Faculty Development Centre (MHRFDC)**

**(A Centre of MoE under PMMMNMTT Scheme)**

**Hansraj College**

(NAAC A+ CGPA 3.62, NIRF Rank #9)

**University of Delhi**

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## About P.G.D.A.V College & IQAC

Pannalal Girdharilal Dayanand Anglo-Vedic (P.G.D.A.V) College founded in the year 1957-58 is one of the oldest constituent colleges of the top ranking University of Delhi. It is co-educational and NAAC accredited institution. It is well known in excellence not only in academics but also in sports and other co-curricular activities. The college has eleven teaching departments offering undergraduate courses of University of Delhi in the broad disciplines of Arts, Commerce, Computer Science and Mathematical Sciences. It also offers post graduate programs in four subjects, viz. Commerce, Hindi, Mathematics and Political Science. It is also the study centre for the students of School of Open Learning, University of Delhi, the Non-Collegiate Women's Education Board, University of Delhi and Indira Gandhi National Open University. Over the years college has emerged as a centre of excellence under the stewardship of its highly qualified, experienced and dedicated faculty. College has premium infrastructure facility which includes well equipped library with INFLIBNET facility, interactive smart classes, high speed Wi-Fi internet access, availability of computers in a student ratio of 1:4, Digital language lab, UGC Network Resource centre, Centralized computing facility. The Internal Quality Assurance Cell (IQAC) of P.G.D.A.V College has been actively pursuing quality development, improvement and sustenance goals in academic, administrative and financial realms to deliver excellence in all its endeavours. The cell has calendar full of forthcoming events that will act as enablers and facilitators of quality management, especially in the sphere of dissemination and creation of knowledge.

## About Department of Mathematics, P.G.D.A.V College

Department has a strength of 13 teachers. Faculty members of the department are actively engaged in research activities in the field of mathematics and allied sciences. Many of them share their knowledge at national and international levels. Our faculty members are guiding Ph.D and M.Phil scholars. The Department has a unique blend of teaching methodology which includes both, use of conventional methods and advance use of mathematical software. We have fully equipped computer labs and classrooms with projectors.



## About PMMMNMTT

The Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching emphasizes the need to change the role and working of a teacher from mere disseminator of information and knowledge to the one who advances frontiers of existing knowledge by actively developing and creating new insights into diverse social and physical phenomena.

## About Hansraj College

Hansraj College is one of the largest constituent colleges of University of Delhi and has been ranked as one of the top five colleges for science, arts and commerce several times in the last decade. The faculty and students of the college have contributed immensely in the field of academics, sports and cultural activities. The college faculty is dedicated towards growth and development of the institution academically and administratively to constantly thrive for excellence. Hansarians have been placed in diverse professions and services worldwide and are bringing fame and laurels to the institution.

## Objectives of the Programme

Biomathematics as a subject choice is slowly gaining popularity in our University. However, both students and faculty need lot more awareness to take it to wider acceptance it deserves. We are doing our bit to help the subject reach more sections of students. This FDP, to be followed by many such activities, is a step in the same direction. This Faculty development programme has special emphasis on inter - disciplinary methodologies of study. It has been designed to:

- Acquire knowledge about how mathematical techniques and tools can be used to model natural and biological processes.
- Scientifically study the normal functions in living systems.
- Have an exposure to nonlinear differential equations with examples such as heartbeat, chemical reactions and nerve impulse transmission.
- Study the application of basic concepts of probability to understand molecular evolution and genetics.
- Achieve competitive teaching and learning environment.

# Learning Outcomes of the Programme

- The development, analysis and interpretation of bio mathematical models such as population growth, cell division and predator - prey models.
- The mathematics behind heart belt model and nerve impulse transmission model.
- The theory of bifurcation and chaos.
- Modelling molecular evolution and probability distributions in genetics.
- Hands-on computer sessions using Python 2.7

## Eligibility

The programme is interdisciplinary and is open to all the interested participants. All faculty members (regular/ ad-hoc/ temporary/ guest) and Research Scholars from any university/college are eligible to participate.

## PGDAV College Team

### Chief Patron

**Prof. Mukesh Aggarwal**

Principal,

P.G.D.A.V. College

### Convener, Organizing Committee

**Dr. Krishna Sharma**

Vice-Principal,

P.G.D.A.V. College

### Programme Convener

**Dr. Geeta Kalucha**

Teacher In-charge, Department of

Mathematics

P.G.D.A.V. College

### Director, IQAC

**Mr. K. K. Srivastava**

P.G.D.A.V. College

## MHRFDC Team

### **Prof. Rama**

Principal, Hansraj College

&

Chairperson, MHRFDC

### **Mr. Ashutosh Yadav**

Dy. Coordinator, MHRFDC

### **Dr. Jyoti Bhola**

Coordinator, MHRFDC

## Registration Process

- Interested participants are requested to follow the steps mentioned below in order to register for the FDP.
- Participants are required to pay the registration fee of Rs. 1000/- via NEFT/ IMPS/UPI to the following account
  - Account Name: Principal, Hansraj College, FDC
  - Account Number: 2848101019873
  - Bank: Canara Bank, Hansraj College, Delhi
  - IFSC: CNRB0002848
  - Type of Account: Savings
- Pre-registration to the programme is through online mode only. **(Fee is non-refundable)**
- Participants are required to fill the registration form using the following link. (Please ensure that you have payment proof before filling up registration form) Registration link: <https://bit.ly/34lPezd>
- **Note:** Limited seats are available for this workshop on a first-come, first-served basis. The last date for registration is **12<sup>th</sup> October, 2020**.
- Selected participants will be informed by **14<sup>th</sup> October, 2020**
- Attendance norms are strict. Participants are required to clear the assessment component for getting the certificates.
- Further details will be communicated to the selected participants.



## Resource Persons



**Prof. James D. Murray**  
Emeritus Professor of  
Mathematical Biology,  
University of Oxford  
Emeritus Boeing Professor of Applied  
Mathematics, University of Washington



**Prof. Subhendu Ghosh**  
Formerly Professor & Head,  
Department of Biophysics,  
University of Delhi  
South Campus



**Prof. K.R. Pardasani**  
Professor of Mathematics  
Former Head, Department of Mathematics,  
Bioinformatics and Computer Applications,  
Maulana Azad National Institute of  
Technology, Bhopal



**Prof. Peeyush Chandra**  
Prof.(Retd.), Department of  
Mathematics & Statistics  
IIT Kanpur



**Prof. Sunita Gakkhar**  
Department of Mathematics  
Indian Institute of Technology  
Roorkee



**Dr. Prashant K Srivastava**  
Associate Professor,  
Department of Mathematics, School of Basic  
Sciences  
Indian Institute of Technology, Patna



**Prof. Ajit Iqbal Singh**  
INSA Emeritus Scientist,  
Formerly Professor & Head,  
Department of Mathematics,  
University of Delhi, South Campus



**Dr. Nitu Kumari**  
Associate Professor,  
School of Basic Sciences,  
Indian Institute of Technology, Mandi,  
Himachal Pradesh



**Ranjan Shrivastava**  
SRF  
Department of Biophysics,  
University of Delhi, South Campus