

K.T.S.P. MANDAL'S

HUTUTMA RAJGURU MAHAVIDYALAYA, RAJGURUNAGAR

TAL-KHED, DIST-PUNE 410 505

DEPARTMENT OF MATHEMATICS AND STATISTICS

BRIEF REPORT OF GUEST LECTURE

Sr. No.	Particulars	Details
1	Date	21/03/2024
2	Name of the event	Guest Lecture
3	Duration of the programme	1 Day
4	Venue	Hutatma Rajguru Mahavidyalaya, Rajgurunagar
5	Name of coordinator	Prof. R. M. Wayal Prof. S. R. Thorat
6	Number of Participants	19
7	Activity belongs to which criteria	Criteria II
8	Curricular/Co-Curricular/Extra-Curricular	Co-Curricular

Department of Mathematics and Statistics organized a guest lecture of Prof. Vrushali Wayal, Dr. D. Y. Patil College of Ayurved and Research Centre , on Applications of Mathematical Sciences in the field of medical science for F.Y.B.Sc. and S.Y.B.Sc. students on March 21, 2024. The guest lecture focused on exploring the myriad applications of mathematical sciences in the domain of medical science, offering insights into how mathematical modeling, statistical analysis, and computational techniques are revolutionizing healthcare. Prof. Wayal elucidated how mathematical models play a pivotal role in understanding and predicting the

spread of infectious diseases. Through various mathematical frameworks such as compartmental models (e.g., SIR, SEIR), attendees gained a deeper comprehension of disease dynamics, transmission patterns, and the effectiveness of intervention strategies.

The lecture delved into the significance of biostatistics in designing, conducting, and interpreting clinical trials. Prof. Wayal discussed how statistical methods aid in sample size determination, randomization, hypothesis testing, and data analysis, thereby ensuring robust and reliable outcomes in medical research. Mathematical techniques such as Fourier transforms, wavelet analysis, and image segmentation are indispensable in medical imaging modalities like MRI, CT scans, and ultrasound. Attendees learned how these mathematical tools enhance image quality, facilitate feature extraction, and contribute to diagnostic accuracy in medical imaging. With the advent of high-throughput sequencing technologies, genomics has become a data-driven field requiring advanced computational methodologies. Prof. Wayal elucidated how mathematical algorithms, machine learning techniques, and network analysis are employed to decipher genomic data, unravel genetic predispositions to diseases, and personalize treatment approaches. The application of mathematical optimization techniques in healthcare operations management was another focal point of the lecture. Attendees gained insights into how mathematical models optimize resource allocation, hospital logistics, patient scheduling, and healthcare delivery, thereby enhancing efficiency and minimizing costs.

Prof. Vrushali Wayal's guest lecture provided a comprehensive overview of the applications of mathematical sciences in the field of medical science, illustrating how mathematical modeling, statistical analysis, computational techniques, and optimization methodologies are indispensable tools in advancing healthcare research, diagnosis, and treatment. The insights gleaned from the lecture are poised to catalyze further interdisciplinary collaboration between mathematicians and medical researchers, driving innovation and progress in healthcare.



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K.T.S.P. Mandal's
Hutatma Rajguru Mahavidyalaya Rajgurunagar
 Department of Mathematics and Statistics
 Guest Lecture
 Date-21/03/2024

Sr. No.	Name	Class	Sign
1.	Shinde Jayshree Manohar	S.Y.B.Sc	
2.)	Mahan Asmita Sandip	S.Y.B.Sc	
3	Gadhare Harshada Mahendra	S.Y.B.Sc	
4.	Mutkule Pavan Bhanu	F.Y.B.Sc	
5.	Vishwakarma Sumeet Banarasi	F.Y.B.Sc	
6.	Kale Anushali Dipak	S.Y.B.Sc	
7.	Sen Vishakha Rajkumar	S.Y.B.Sc	
8.	Gongawane Isha Santosh	S.Y.B.Sc	
9.	Sable Rutuja Bhagawan	S.Y.B.Sc	
10.	Khese Sharvari Shantaram	F.Y.B.Sc	
11.	Kadam Vinod Balu	S.Y.B.Sc	
12.	Pable Roshan Anil	S.Y.B.Sc	
13.	Waghole Dnyanesh Sahebrao	S.Y.B.Sc	
14.	Kale Payal Isha	F.Y.B.Sc	
15.	Thigale Neha Prakash	F.Y.B.Sc	
16.	Phadke Pradnya Santosh	S.Y.B.Sc	
17.	Shreya Gurudev Kantikar	F.Y.B.Sc	
18.	Rasika Rajendra Bhambure	F.Y.B.Sc	
19.	Sakshi Machindra Telwande	F.Y.B.Sc	

S. R. Thorat

HEAD,

DEPARTMENT OF STATISTICS
 H. P. MAHAVIDYALAYA - RAJGURUNAGAR

R. M. Wajal

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Principal

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