Seminar Report

Organized by

Panchmura Mahavidyalaya

Panchmura, Bankura, West Bengal

Academic Session: 2022-2023

“Recent Development of Differential Equations and Applications"

Theme: Recent development of differential equations and applications

Date: June 16, 2023

Venue: Seminar Hall (Panchmura Mahavidyalaya)

Organizer: Department of Mathematics

Objectives:

- To introduce the mathematical theory of linear and nonlinear, ordinary (ODE) and partial differential equations (PDEs).
- To describe application of ODE and PDEs in real-time data analysis
- To introduce the concepts, methods, applications, and logical arguments

Resource Persons:

- **Dr. Prashanta Chatterjee,** Professor and Ex-Head of the Department of Mathematics, Visva-Bharati
- **Dr. Bappa Das**, Associate Professor and Head of the Department of Mathematics, Bankura University
- **Dr. Uday Narayan Ghosh**, Assistant Professor and Head of the Department of Mathematics, Munger University

Inauguration & Welcome Address:

The seminar was organized in association with IQAC, Panchmura Mahavidyalaya. The seminar started with the introductory remarks by **Mr. Tanmay Roy**, State Aided College Teacher, Department of Mathematics, Panchmura Mahavidyalaya at around 11:15 am. Next, the inaugural address was delivered by **Dr. Anal Biswas**, the Principal of Panchmura Mahavidyalaya.

Key Note Address:

The event comprised of three consecutive talks. The first talk was delivered by **Dr. Prasanta Chatterjee**. He had introduced the theory behind ODEs, PDEs and nonlinear differential equations lucidly; gradually he described stochastic differential equation (SDE), fractional differential equation (FDE) and delay differential equation (DDE) and significance to solve problems like population dynamics, epidemics, genetic regulation, and biochemical reaction network behavior. Second talk was given by **Dr. Bappa Das**, who described applications of nonlinear differential to

deal with different research topics in oceanography, nonlinear optical fibers, plasmas, ferrite magnetic material, fluid dynamics and atmosphere, microwave oscillation, financial system. The third resource person was **Dr. Uday Narayan Ghosh**; he had described recent advancements in the theory and applications in the field of differential equations.

Interactive Session:

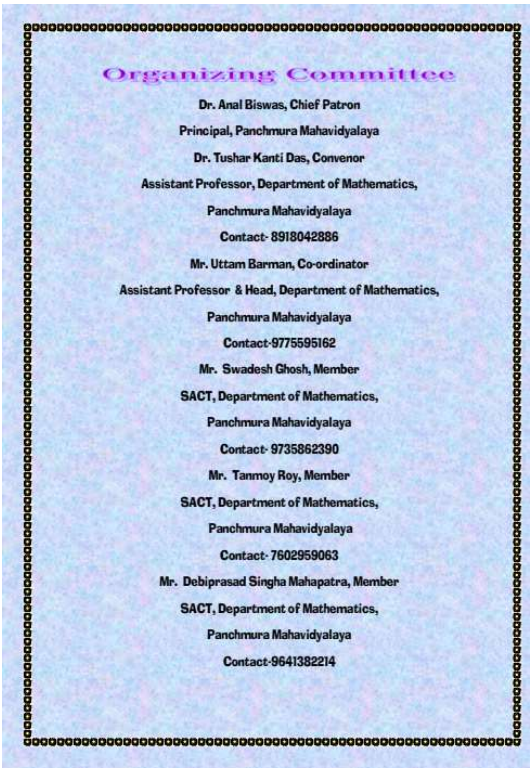
There were total 76 participants, which include students and teaching-nonteaching staffs. Students raised several questions after individual lecture. Speakers addressed individual question satisfactorily.

Vote of Thanks:

The programme ended around 3.00 PM with the vote of thanks given by **Dr. Tusar Kanti Das**, the Convener of the seminar and Assistant Professor in the Department of Mathematics, Panchmura Mahavidyalaya.

Outcome of the seminar:

- Discussion on the theory, types, methods to solve nonlinear differential equation,
- Applications of nonlinear differential equations in the analysis of different problems related to real life.



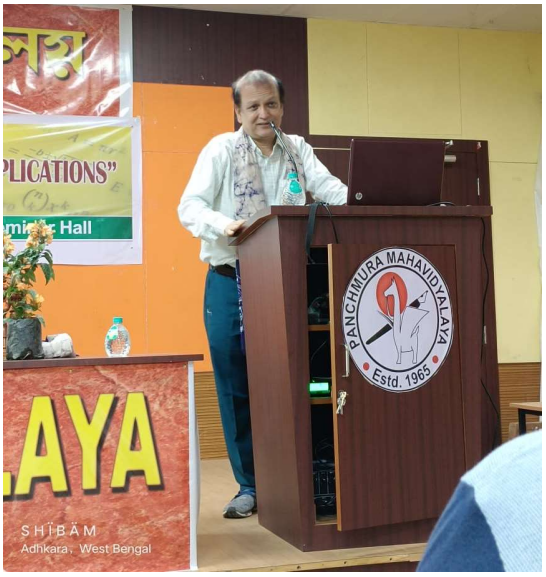
Brochure of the seminar *[Note: Date was postponed by one day due to strike initiated by local tribals]*

Inaugural session: felicitation of delegates

Link: https://www.facebook.com/100017890325595/videos/913486363244120/

http://www.panchmuramahavidyalaya.org/Default.aspx?PageId=538

http://www.panchmuramahavidyalaya.org/UploadedFiles/304891Aseminar3.pdf



Keynote talk by Dr. Prashanta Chatterjee

Tushar Kanti Das.

Dr. Tusar Kanti Das

(Convener of the Seminar & Assistant Professor, Department of Mathematics, Panchmura Mahavidyalaya)