



BMS INSTITUTE OF TECHNOLOGY AND MANAGEMENT

Avalahalli, Doddaballapur Main Road, Bengaluru - 560064

DEPARTMENT OF MATHEMATICS

Five days Online Faculty Development Program

Mathematical concepts by using Free Open Source Softwares (FOSS)

21.07.2020 to 25.07.2020

The FDP started on 21.07.2020 with the inaugural session. In the inaugural function started with the blessings of goddess Sarasvati invocation song, later Dr. Chethan A.S., Professor & HOD, Department of Mathematics, BMSIT gave the welcome speech. Dr. Kallur V Vijayakumar, coordinator given the brief overview of the FDP. In the over view mentioned that as wide range of mathematical models can be effectively solved by using FOSS, the use of FOSS for high-order mathematical calculations has become pivotal because of the high cost involved in other resources. Day by day FOSS is playing an important role in the field of mathematics. Hence, this FDP focus to give a glimpse on FOSS in Mathematics.

The FDP has 600+ registered participants and the meeting platform is google meet. 250 participants can attend live sessions and the recorded videos will be shared with the remaining participants. Then Smt. Sreelakshmi T.K. introduced the chief guest **Dr. G. K. PATRA**, Senior Principal Scientist, CSIR Fourth Paradigm Institute (CSIR 4PI) & Professor & Associate Dean, Mathematical and Information Sciences, Academy of Scientific and Innovative Research (AcSIR), NAL Belur Campus, Bangalore – 560037.

This is followed by the presidential address by our beloved principal, the motivating and inspiring force behind all our activities Dr. Mohan Babu GN. In his address sir has remarked that while doing the modelling a problem everyone should think about the practical constrains in mind then model the problem and solve it so that the solution obtained will be useful to the needy/society. After the presidential address Dr. G. K. PATRA sir continued with the key note speech on various mathematical models, how to use an existing model, then modify them to suit the practical situations by adding different terms or compartments considering various parameters for a model to arrive at the final model. And then The covid19 activities using various mathematical and statistical backgrounds at CSIR 4PI and the contribution of open source softwares for faster research. The session concluded with vote of thanks by Smt. Sreelakshmi T.K.

Day 2 to 5 sessions was handled by Dr. K. MADHUKAR, Analyst, Bangalore analytical research centre BARC India, Jakkur. In Day 2 session a detailed explanation of Introduction to PYTHON, Data



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Visualization is discussed. All topics were discussed with examples. In Day 3 Demonstration of simple and scientific calculations, tracing of curves and Matrix Evaluations, Numerical Techniques discussed. Day 4 Limits, Differentiation, Integration, Elementary Differential Calculus, Integral Calculus, ODE of 1st Order and 2nd order, Transformations(Laplace, Fourier, Hnkel...) Using PYTHON and on day 5 Graph theory in Python, other FOSS like Scilab, Octave and Wxmaxima discussed. All sessions were highly informative and well appreciated by the participants. All sessions were recorded and uploaded to department YouTube channel.

Day 1 <https://youtu.be/ey8FK6g2vSg>

Day 2 <https://youtu.be/NRw7at7kHpK>

Day 3 <https://youtu.be/hdA6auuhKF0>

Day 4 <https://youtu.be/4QN8qzwZCUg>

Day 5 <https://youtu.be/dPzPI9xW5XY>

