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LEAD TO ILLUMINATE



MATHEMATICS 2023-24



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FACULTY OF MATHEMATICS

S.NO.	FACULTY	DESIGNATION	
1	Mr. Prashanth	MEMBER	
2	Ms. Swapna	COORDINATOR	
3	Mr. V Naveen Kumar	MEMBER	

INDEX FOR THE ACADEMIC YEAR 2023-24

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8	26-02-2024	FDP on Citation and Reference Management	GOOGLE MEET	03
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9	24-02-2024	FACULTY EXCHANGE PROGRAM MOU WITH		01
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Report

Report Name of the Event: International Seminar
Name of the topic: Applications of MATLAB

Date : 13.07.2023
Plat form : Google Meet

Participants : Mr. M. Prashanth, Mr. V. Naveen Kumar

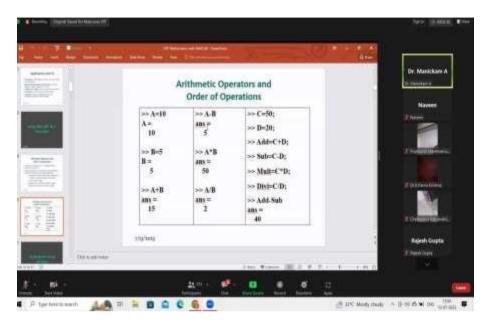
Mr. M. Prashanth, Mr. V Naveen Kumar from the faculty of Mathematics attended the session. One-day International Seminar on "Applications of MATLAB" which was organized by the Department of Mathematics and Statistics, St. Francis college, Koramangala, Bengaluru on 13-07-2023, 3.30 to 5.00 PM. The mode of session was online platform zoom. The speaker for the session was Dr. A. Manickam, Assistant Professor, school of advance sciences and languages, Department of Mathematics, VIT Bhopal University, Madhya Pradesh. The resource person started session with definition of MATLAB and its applications in various fields and also explained in detail about all the windows, basic operations which includes arithmetic operator's addition, multiplication, division, subtraction and order of operations in MATLAB. Sir also explained the concepts - Arrays, types of matrices, Linear Indexing Row operations, Column operations, removing rows and Columns, Swapping Rows and Columns, 2-D plotting and 3-D plotting, tools that are available for manual plotting which can plot Cycloids, Epicycloids & Hypocycloids. He also gave a brief description in drawing the multiple graphs by using the legend commands and trigonometric graphs such as sine, cosine, tan, etc.



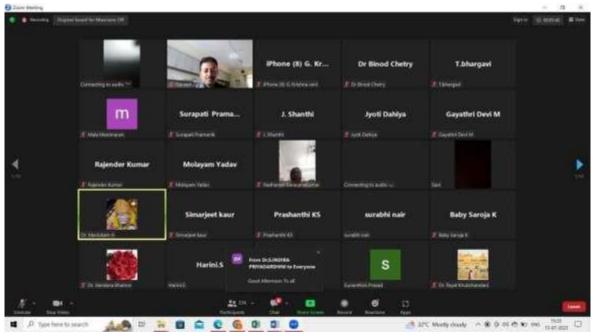
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The speaker Dr. A. Manickam, Assistant Professor, School of Advance Sciences and Languages, Department of Mathematics, VIT Bhopal, giving the insights into MATLAB



Mr. Prashanth, Mr.V. Naveen Kumar, faculty of Mathematics attending the international seminar on MATL



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Report

Name of the Event : National Seminar

Name of the topic : "Sequences, Series, Limits & Continuity"

Date : 05.08.2023

Plat form : Google Meet / Hybrid Mode

No of participants 33

MOU : Mar Gregorios College of Arts & Science, Tamil Nadu

Audience : Students of both institutions

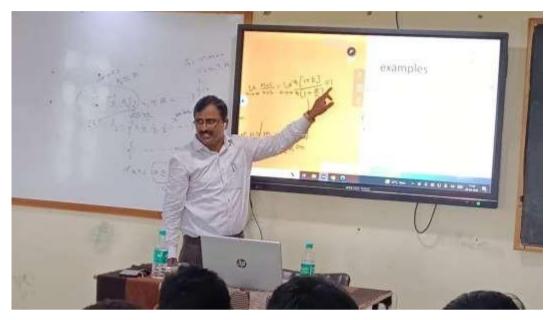
The faculty of Mathematics in collaboration with the Mar Gregorios College of Arts & Science, Mogappari, Chennai organized a National Seminar onSequences, Series, Limits & continuity in hybrid mode. The session was started by invoking the blessings of God followed by the introduction of the resource person Dr. G. Upender Reddy, Assistant Professor, Department of Mathematics, University College of Science, Mahatma Gandhi University, Nalgonda, Telangana by Tejon Mai MSCS II year. In this session, speaker enriched the students on sequences, series, boundedness of sequences, convergent and divergent sequences, oscillating sequences, and various tests to analyze whether the series is convergent or divergent. Sir also explained the difference between limits and continuity by giving various examples. This session helped the students to develop a theoretical approach to the concept and apply it.



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The Resource Person Dr. G. Upender Reddy, Assistant Professor, Department of Mathematics, University College of Science, Mahatma Gandhi University taking session for students on Sequences, the limit of a sequence, continuity, series.



Ms. P. Jayanthi Reddy, Principal, LFDC felicitating the resource personDr. G. Upender Reddy with a memento.



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Report

Name of the Event : Five Day National Level Online PDP

Name of the topic : Computational Fluid Dynamics Methods & Applications

Date : 04.09.2023 to 08.09.2023

Plat form : Google Meet

Audience : Faculty from various institutions

No of participants : 65

A Five-Day National Level Online PDP on "Computational Fluid Dynamics Methods and Applications" was jointly organized by the faculty of Mathematics, Little Flower Degree College, Uppal, Hyderabad, Telangana & Sonapur College, Sonapur, Assam from 04.09.2023 to 08.09.2023. The main aim of this program is to enhance the participants in the area of computational fluid dynamics by using various methods.

Day 1: (04.09.2023)

The resource person of the day was Prof. Jiten Chandra Kalita, Assistant professor,IIT Guwahati. He gave a lecture on the topic "Scientific Computing and Turning an Aero foil into swimming fish". Prof. Jiten Chandra Kalita explained about the importance of scientific computing by taking live examples in our day-to-day life.He focused on the main areas of Mathematics namely Fluid Dynamics, partial Differential Equations, and Computational Techniques which give a lot of scope in the field of research.

Day 2: (05.09.2023)

The resource person of the day was Dr. Shankar Rao Munjam, Assistant Professorof Mathematics, School of Technology, Woxsen University, Hyderabad. Telangana, India & Adjunct Professor, Department of Basic Sciences, University of The Peoples, Pasadena, California, USA. Sir gave lecture on the topic "Analytical Solution of Fractional Order Non- Linear Vander Pole Equations". His talk focused on Vander pole equations with initial pole conditions fractional order derivatives how they are used in day-to-day life.



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Day 3: (06.09.2023)

The resource person of the day was Dr. Anjanna Matta, Assistant Professor of Mathematics, IFHE University who provided insights about Methods of solutions of PDE in fluid dynamics. The speaker explained the working process of CFD by taking Navier -Stokesequations in Cartesian co-ordinates and various types of CFD codes. Using GAMBIT and FLUENT models, as well as the advantages of CFD, which include the ability to simulate conditions and increase speed levels in a cost-effective manner.

Day 4: (07.09.2023)

The resource person of the day was Prof. Shuvam Sen, Professor of Mathematics, Tezpur University and the topic was the fourth order compact discretization of the incompressible N-S Equations in deformable domains. Sir started with the session by explaining about the mathematical observations by taking a small pic which is painted by Leonardo Vinci and visualizations of vortex shedding halla jesu island in korea which was taken by NOAA-11 satellite. In addition to this sir explained by taking Taylors series problem of first and second order derivative and solving by using finite difference method.

Day 5: (08.09.2023)

The resource person of the day was Prof. A. Maruthi Prasad, Professor of Mathematics, Gitam Deemed to be University who provided insights about Methods of Solutions. Sir has explained about the recent work research work analysis which is done by the researchers using analytical methods which includes, power series methods, asymptotic series solutions, perturbation methods, non-perturbation homotopic methods, a domain decomposition method which is also known as semi-analyticalmethod. Sir gave a brief description on Perturbation methods. The Five-day programme was interesting, inspiring, and informative



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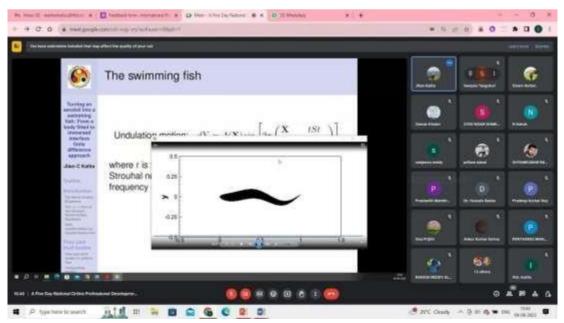
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Day - I



Prof. Jiten Chandra Kalita, Assistant professor, IIT Guwahati explaining about the concepts of Scientific computing, how to calculate the death time of a person by using Mathematical Modelling in FDP.



Prof. Jiten Chandra Kalita, Assistant professor, IIT Guwahati explaining about the conceptsof Naiver Stokes equation and explaining how to turn an aerofoil into Swimming fish in FDP.



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Day - II



Dr. Shankar Rao Munjam, Assistant Professor of Mathematics, School of Technology, Woxsen University, Hyderabad explaining about the concepts of Analytical Solution by fractional order of Nonlinear Vander Pol Equations.



Mr. M. Prashanth, Faculty, of Mathematics participating in the second day's session in Five Day National Level Online Professional Development program.



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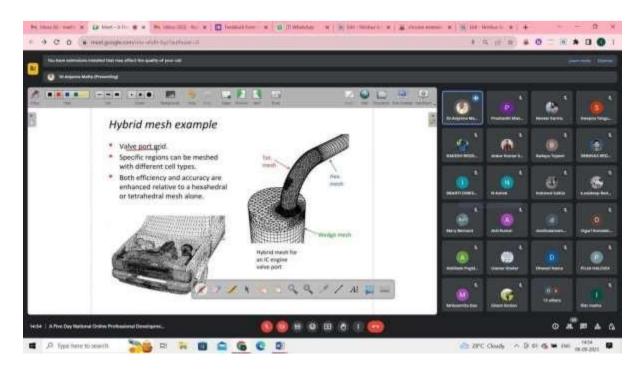
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Day - III



Dr. Anjanna Matt, Assistant Professor of Mathematics, IFHE University explaining the applications of CFD by giving different examples in Five Day National Level Online Professional Development Program.





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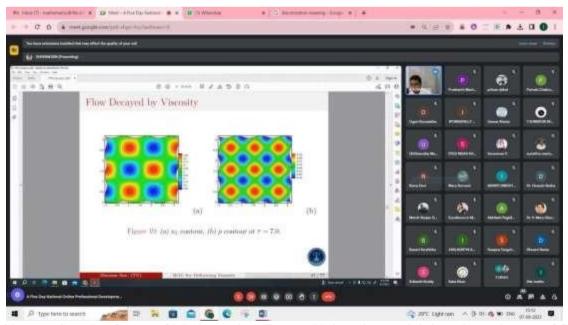
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Day - IV



Prof. Shuvam Sen, Professor of Mathematics, Tezpur University explaining about the fourth order Compact Discretization in deformable domains.



Prof. Shuvam Sen, Professor of Mathematics, Tezpur University explaining about the rateof flow of Viscosity in different mediums in the session.



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Day - V



Mr. M. Prashanth, Faculty of Mathematics welcoming the Resource person Prof. A. Maruthi Prasad, Professor of Mathematics, Gitam Deemed to be University in Five Day National LevelOnline Professional Development Program.



Prof. A. Maruthi Prasad, Professor of Mathematics explaining the Governing Equations and also about Partial Differential Equations and Ordinary Differential Equations.



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Report

Name of the Event : International Faculty Development Programme

Name of the topic : Vedic Mathematics and Basic Sciences

Date : 14.10.2023 to 18.10.2023

Plat form : Google Meet
Participants : Ms. T. Swapna

Ms.T. Swapna, faculty of Mathematics, Department of physical sciencesattended The Five-Day International Faculty Development on "VedicMathematics and Basics Sciences" which was organized by the WoxsenUniversity. Faculties from the various institutions participated in this event.

The FDP was focused on – The ancient system of calculation which comprises of techniques and sutras to solve mathematical problems in an easier way compared to modern math, the formulae (sutras) sixteen sutras and sub-sutras of Vedic Mathematics which were discovered by Shri Bharati Krushna Tirthaji found, Linear differential equations in mathematical modelling, Classification of MHD equations Lagrangian coordinates and Eulerian coordinates, Non-Linear differential equation, Linear stability analysis, Eigen values, Applications in Biology, Cosmological principle, Field equation in Lambda cosmology, Hubble's Law, Scalar field Cosmology, In-homogenous cosmology, Discrete shift operator, the contributions of Great Ancient Indian Mathematicians – Aryabhata, Brahmagupta, Bhaskara II, Varahamihira, Pingala Sutras, Vyakarana Sutras, Sulba Sutras, Katyayana Sutras, Jain Mathematics, Numerals and the decimal number System and classical period. Bakhshila manuscript.



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Ms. T. Swapna, Faculty of Mathematics attending the Five-Day International FDP on Vedic Mathematics and Basic Sciences.





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Report

Name of the Event : Field Trip

Name of the place : Rastrapathi Nilayam
Date : 4 November, 2023

Venue : Rastrapathi Nilayam, Bollaram, Hyderabad.

Participants : B.Sc. I, II, III students of LFDC (185)

No of participants 183

The faculty of Mathematics, Department of Physical Sciences organized a field trip to Rashtrapati Nilayam, Bollaram on Nov 4th 2023 for BSC I, II, III-year students. The purpose of the field trip is to learn about the history, importance and architecture of 163-year-old Rashtrapati Nilayam which was constructed in 1860. 183 Students from SC I, II, III year accompanied by 6 faculty visited the place. The students were divided into groups and were guided by the staff of Rashtrapati Nilayam. During thisfield trip, art gallery, meeting room, Kitchen Tunnel – on the walls which Cheriyal paintings were drawn with organic colours which reflects our history, Herbal Garden, Rock Garden, Nakshatra Vatika – all about the plants related to Nakshatras, Zodiac-Signs, Planets etc are seen. The students had a great time learning about the historyof Rashtrapati Nilayam.



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B Sc Final year students along with the faculty members at Rock Garden



Picture depicting trees related to star and zodiac sign



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Mr. Prashanth, Faculty, Dept. of Mathematics along with students in Gurukul.



B.Sc. students along with the faculty members at main building, Rastrapathi Nilayam



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Report

Name of the Event : Two Day Faculty Development Programme

Topic : Mathematical Software for Teaching and Research

Date : 2- 3rd February, 2024

Venue : St. Francis College for Women, Hyderabad Participants : Mr. M Prashanth, Mr. V. Naveen Kumar

Mr. M. Prashanth, Mr. V Naveen Kumar faculty of Mathematics, Department of Physical Sciences attended the Two-Day Faculty Development program on "Mathematical Software for Teaching and Research" which was organized by the St. Francis College for Women, Hyderabad. Faculties from the various institutions participated in this event.

First day of the session was by Dr. D. Vignesh with the basics of the Mathematical Software tool MATLAB and its instillation process and how to start the MATLAB software in the system and key features related to MATLAB. Sir explained the various commands related to programming and how we canapply for the problems to get the solutions. Second day the session was on SAGEMATH, its instillation process andhow to start the SAGEMATH software in the system. Sir explained the various commands related to programming and to draw thegraphs, modify them and also to solve the equations, and get the solution for a higher degree.



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Ms. Lavanya, Faculty, Dept. of Mathematics introducing the speaker Dr. D. Vignesh in the FDP program



Mr. V Naveen Kumar, Faculty, LFDC receiving the participation certificateform from Ms. Rekha Jai Chander in the FDP program



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NEP-Orientation and Sensitization programme

Date: 5th to 14th February, 2024

Time: 2PM to 5PM Venue: Online, ZOOM

Institution: UGC-Malaviya Mission Teacher Training Centre

UGC-training centre for teachers known as Malaviya Mission Teacher Training Centre in collaboration with Osmania University organized 10 days "NEP- Orientation and Sensitization Programme" from 5th to 14th February from 2: 00pm to 5:00 pm. The course was equivalent to "One Short Term Course" (STC) organizedonline by Director Prof. Smita Pawar, Dr. Sandhya Rani, Assistant Director and Dr.T. Nagaveni, Associate Director respectively. A schedule was given to the registered participants along with link for each day. Each day two sessions by highly distinguished resource persons, were organized in tune with 2 sessions eachday with NEP in the afternoon. Each day's session in brief:



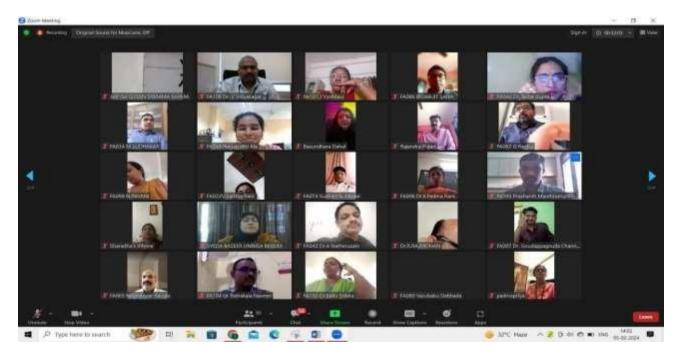
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Day - I







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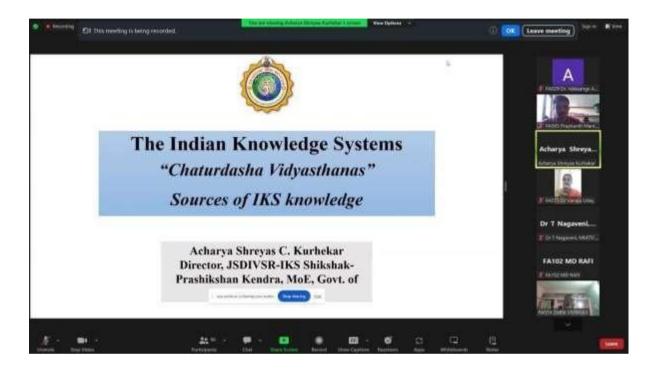


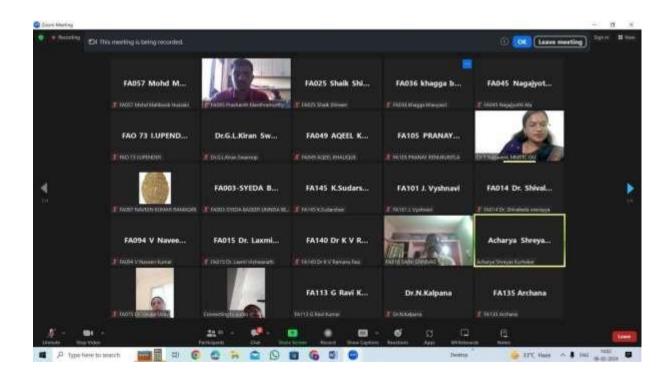
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Day - II





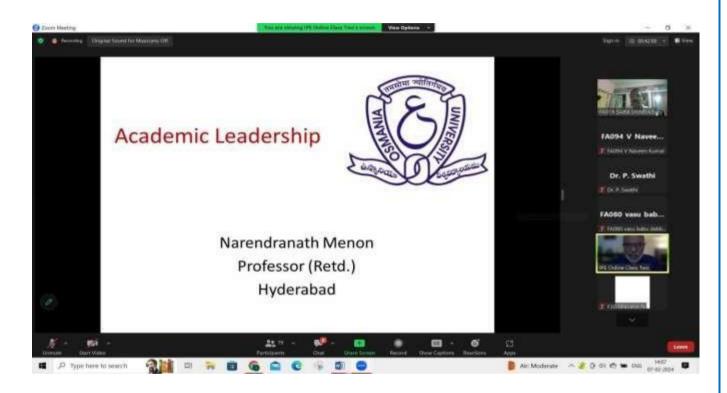


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Day - III





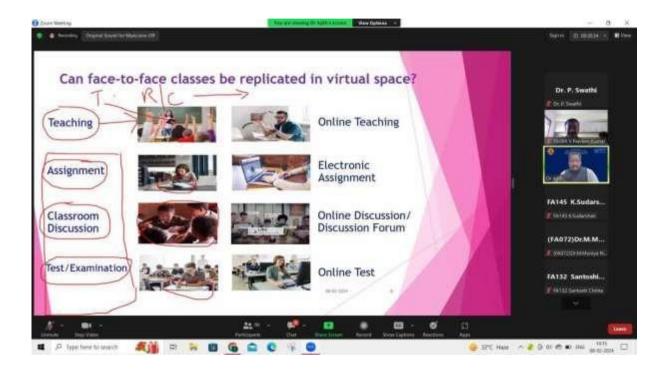


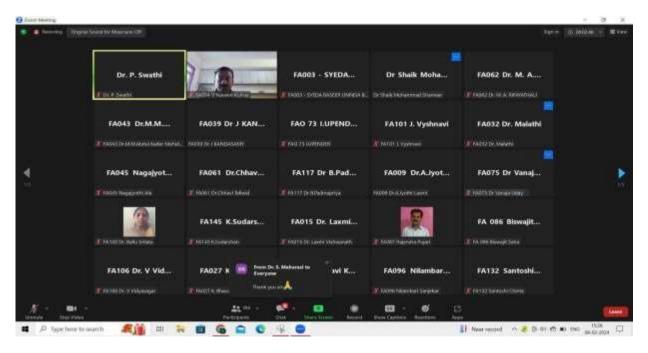
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Day - IV







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Day - V





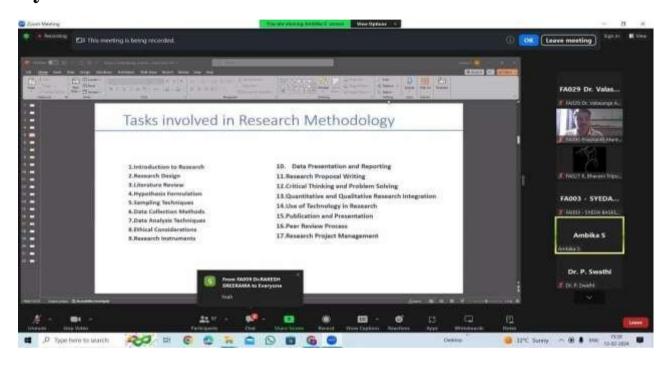


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Day - VI







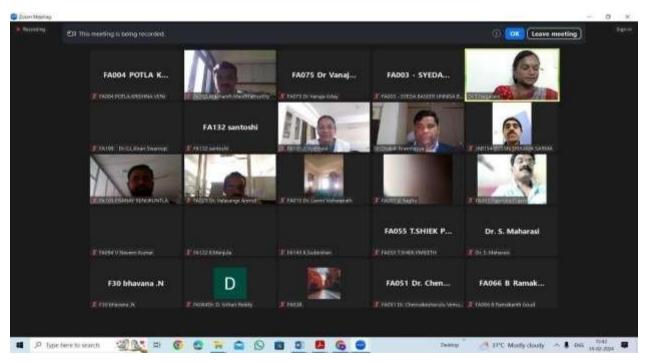
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Day - VII



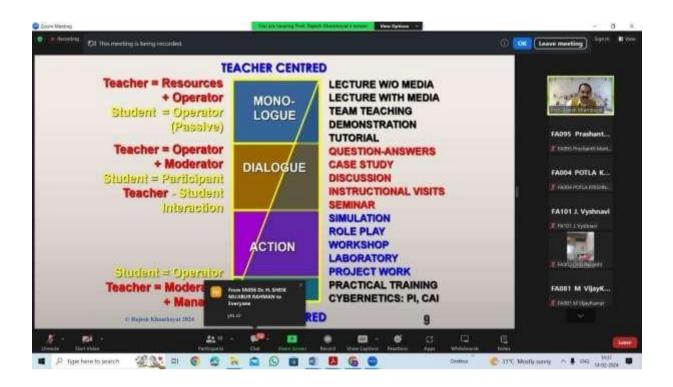


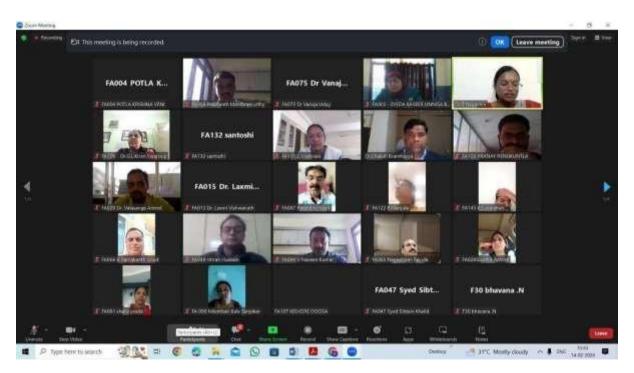


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FDP on Citation & Reference Management for Scholarly Writing

Name of the Event: Faculty Development Program

Title: Virtual International FDP on Citation & Reference Management for Scholarly

Writing

Date: 26th to 28th of February, 2024

Time: 4:00 P.M to 5:30 P.M IST

Mode: Online Zoom

Participants: M. Prashanth & T. Swapna

Resource Person: Dr. P. Mathivanan, Associate Professor – Decision Sciences, NSB

Bangalore, Karnataka, INDIA.

Mr. M. Prashanth and T. Swapna from the Department of Mathematics attended a three-day International Level Faculty Development Programme on Citation and Reference Management for Scholarly Writing online from February 26th to February 28th, 2024. Dr. P. Mathivanan, Associate Professor of Decision Sciences at NSB Bangalore in Karnataka, India, is the resource person for the three-day International FDP.

The FDP began with an invocation of God's blessing, followed by a welcoming speech by Dr. Srinidhi K. Parthasarthi, Director of NSB Bangalore, who congratulated all attendees on their participation. On the first day, Dr. P. Mathivanan demonstrated how to search for articles using Journal Finder Elsevier, as well as how to find impact factors. He ended the session by explaining how to download the Mendeley program.

On day 2 Dr. P. Mathivanan spoke about how to add references by using Mendeley, the alternative approach, and also how to refer to the research publications.

On the last day, he provided a session on comprehensive choices in the Mendeley program and he assigned an assignment to make a PDF or MS Word file in which to write an Abstract and Literature Review by utilizing Mendeley software reference. Participants had several queries and he clarified them.

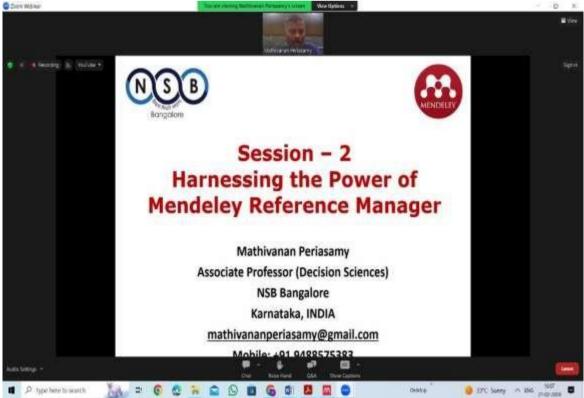


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Report on Faculty Exchange Programme

Name of the Event : One Week Faculty Exchange Program:

Topic : Ordinary and Partial differential equations

Date : 24th – 1st March 2024

The faculty of Mathematics, Department of Physical Sciences, Little Flower Degree College, Uppal, Hyderabad, organized a one-week Faculty Exchange Programme with Teresian College, Karnataka for second-year students from February 24 to March 1, 2024. Mr. M. Prashanth, faculty of mathematics, Little Flower Degree College taught Teresian College students as part of the faculty exchange program.

The lectures were focused on ODE - higher-order linear differential equations Complementary Functions, Particular Integrals, PDE fundamentals, including how to form PDEs by eliminating arbitrary constants and functions, the Lagrange method methods of Non-Linear First Order Partial Differential Equations.



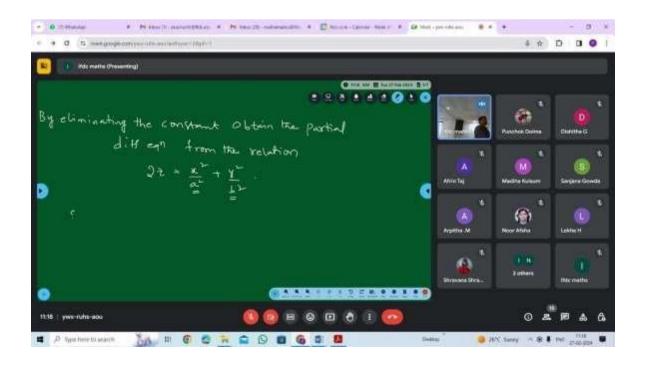
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Mr. Prashanth, Faculty from LFDC taking the session for the students of Teresian College,
Mysore Under faculty exchange program





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WORKSHOP ON SCIENTIFIC COMPUTING USING MATHEMATICA

Name of the Program: Workshop on scientific computing using Mathematica

Date: 23-5-2024 to 25-5-2024

Venue: G Meet - Online

Participants: 03 (Prashanth, Swapna, Naveen)

Resource Person: Dr. G. Srinivas, Dr. Arayan, Dr. Nirmala

The faculty of Mathematics from the Department of Physical Sciences attended the workshop on Scientific Computing using MATHEMATICA from 23-5-2024 to 25-5-2024 through online mode Google Meet organised by Department of freshman engineering, Geethanjali college of Engineering and Technology. Cheeryal (V), Kesara (M), Medchal (Dist.), Telangana.

Dr. Nirmal, Resource person explained about the basics of MATHEMATICA, Mathematica is widely used for symbolic computation, solving mathematical equations, calculus, algebra, and symbolic manipulation. It's extensively used for data analysis, including statistical analysis, regression, and data visualisation through plotting functions and graphics. Mathematica provides tools for machine learning tasks such as classification, regression, clustering, and neural networks.

Dr. G. Srinivas, Resource Person taught about Mathematica Software and focused on how to find solutions to fluid flow problems by using Mathematica Software. He also explained various applications of Mathematica such as engineering disciplines for simulation, optimization, and design analysis. It's employed for image processing tasks such as image manipulation, filtering, and feature extraction, as well as signal processing applications.

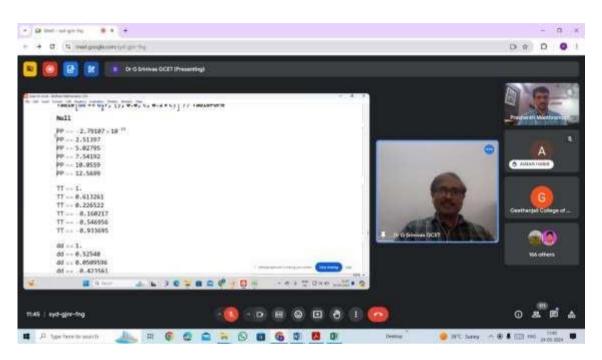
Dr. Arayan, Resource person spoke about the Wolfram Mathematica, is a software system with built-in libraries for several areas of technical computing that allow machine learning, statistics, symbolic computation, data manipulation, network analysis, time series analysis, NLP, optimization, plotting functions and various types of data.



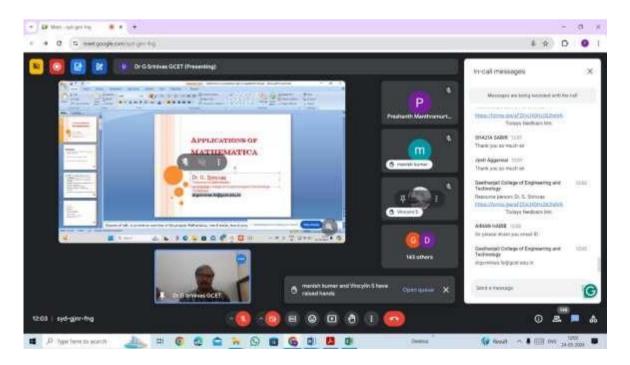
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Dr. G. Srinivas, Resource Person explaining the applications of MATHEMATICA



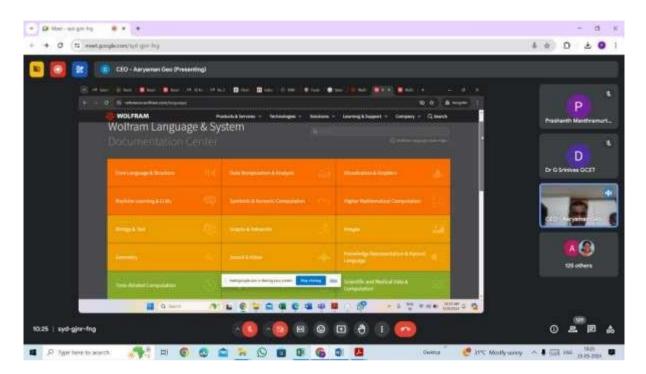
Dr. G. Srinivas, Resource Person, clarifying the doubts of the participants



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Dr. Arayan, Resource Person addressed the gathering on the topic Wolfram Language & System.