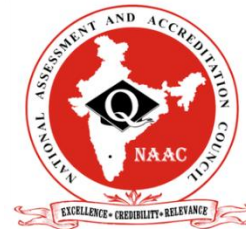




Deen Dayal Upadhyaya College (University of Delhi)



REPORT

Department of Mathematics

Organized

Hands-on Workshop on
Calculus with Mathematica
(For B.Sc. physical science and mathematics Hons students)
(Nov. 2nd & 3rd 2023)

Under

DBT Star College Scheme & Science Foundation



सत्यमेव जयते

DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA

The Department of Mathematics of Deen Dayal Upadhyaya College, University of Delhi organized a two days hands-on workshop on Calculus with Mathematica on November 2-3, 2023 under the aegis of DBT star college program of Govt. of India and Science Foundation of DDUC.

Overview:

Mathematica is a modern technical computing system spanning all areas of technical computing—including neural networks, machine learning, image processing, geometry, data science, visualizations, and others. The system is used in many technical, scientific, engineering, mathematical, and computing fields.

The Program:

This program is to encourage the students of program courses to take mathematical practicals for improving their knowledge of various concepts of calculus using Mathematica. The goal of this program is to give the basic knowledge of Mathematica which is used to solve mathematical and scientific problems. Participants will have access to computing facilities with this software and have an opportunity to hands-on exercises with the same.

Program Schedule

Day I: 02/11/2023	
Session-1	
10:00 am – 11.30 am	1. Plotting of graphs of function of type (greatest integer function), $\sin x$, $\cos x$ (even and odd positive integer), $\tan x$ (even and odd positive integer), e^x (a positive integer) $\ln x$, Discuss the effect of a and b on the graph.
Session-2	
11:30 am – 1:00 pm	2. Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them.
Day II: 03/11/2023	
Session – 1	
10.00am – 11.30 am	Matrix operations (addition, multiplication, inverse, transpose, determinant, rank, eigenvectors, eigenvalues, Characteristic equation and verification of Cayley Hamilton equation, system of linear equations

Session-2
11:30 am - 1:00
pm

Complex numbers and their representations, operations like addition, multiplication, division, modulus. Graphical representation of polar form

Organizing Committee:

Co-ordinator,

DBT-Star College Scheme: Dr. Manoj Saxena

Program Coordinators: Dr. Poonam Garg , Dr. Mamta A. Wagh

Resource persons Dr. Poonam Garg , Dr. Mamta A. Wagh , Dr. Tarachand Prajapati, Dr. Rashmi Gupta, Mr. Ravi Kumar Meena

ATTENDANCE OF THE PARTICIPANTS

DEPARTMENT OF MATHEMATICS
 WORKSHOP ON "CALCULUS WITH MATHEMATICA"
 2ND NOVEMBER - 3RD NOVEMBER 2023
 ATTENDANCE SHEET FOR FIRST DAY 2.11.2023

session-1

Sl. No.	Name	Course	Roll no.	Signature
1	Hemant Yadav	BSc (PSCS)	21PSS5114	Hemant
2	Abhishek Maana	BSc (PSCS)	21PSS5101	Abhishek
3	Ishant	BSc (PSCS)	21PSS5117	Ishant
4	Kanwalpreet Singh	BSc (PSCS)	21PSS5118	Kanwalpreet
5	Hemanshu	B.Sc (PSCS)	21PSS5116	Hemanshu
6	Pankaj Kumar	BSc (PSCS)	21PSS5125	Pankaj
7	Vinay Pandey	BSc (PSCS)	21PSS5155	Vinay
8	Pallavi Rajwaranishi	BSc (PSCS)	21PSS5124	Pallavi
9	Ishana	B.Sc (H) Math	22HMT3170	Ishana
10	Shrey Srivastava	B.Sc (H) Math	22HMT3102	Shrey
11	Vivek Tiwari	"	22HMT3122	Vivek
12	Ravindra	"	22HMT3190	Ravindra
13	Nitin Kumar	"	22HMT3188	Nitin
14	Akash	"	22HMT3108	Akash
15	Ravi Gadam	"	22HMT3105	Ravi
16	Dushyant Kumar	"	22HMT3196	Dushyant
17	Laxmi Singh Gaudan	BSc (PSCS)	21PSS5111	Laxmi
18	Suha Singh	BSc (PSCS)	21PSS5134	Suha
19	Nisha	BSc (PSCS)	21PSS5123	Nisha
20	Diksha Hansal	BSc PSCS	21PSS5111	Diksha
21	Nikhil Prasad	BSc PSCS	21PSS5129	Nikhil
22	Krish	BSc PSCS	21PSS5120	Krish
23	Ajay Maurya	BSc (H) Math	22HMT3106	Ajay Maurya
24	Rishi	BSc (H) Math	22HMT3183	Rishi
25	Aruni Chaudhary	BSc (PSCS)	21PSS5108	Aruni
26	Kushal	"	21PSS5119	Kushal
27	Darsh	BSc (PSCS)	21PSS5146	Darsh
28	Deepak	BSc (PSCS)	21PSS5110	Deepak
29	Vinay Kumar	BSc (PSCS)	21PSS5156	Vinay
30	Suman Raj	BSc PSCS	21PSS5133	Suman
31	Anshu	BSc PSCS	21PSS505	Anshu
32	Hanshit Gupta	BSc PSCS	21PSS5115	Hanshit
33	Ankit	BSc PSCS	21PSS5107	Ankit
34	Ankit Kothari	BSc PSCS	21PSS5104	Ankit
35	Sanya Kisan	BSc PSCS	21PSS5135	Sanya
36	Shaili Verma	BSc PSCS	21PSS5131	Shaili
37	Shabhan Pandey	BSc PSCS	21PSS5132	Shabhan

DEPARTMENT OF MATHEMATICS
 WORKSHOP ON "CALCULUS WITH MATHEMATICA"
 2ND NOVEMBER - 3RD NOVEMBER 2023

Session I

ATTENDANCE SHEET FOR FIRST DAY 2.11.2023

Sl. No.	Name	Course	Roll no.	Signature
38	Ashish	BSc(PSCS)	21PCS5107	Ashish
39	Sagar	BSC(PSCS)	21PCS5151	Sagar
40	Jahel	B.Sc Math Hon.	22HMT3174	Jahel
41	Naman	B.Sc Math Hon	22HMT3156	Naman
42	Vishal Tripathi	BSc. Hon. MATHS	22HMT3163	Vishal
43	Ashijet K. Vishwakarma	BSc (H) MATH	22HMT3167	Ashijet
44	Rumud	BSc(H) Maths	22HMT3179	Rumud

DEPARTMENT OF MATHEMATICS
 WORKSHOP ON "CALCULUS WITH MATHEMATICA"
 2ND NOVEMBER - 3RD NOVEMBER 2023

Session II

Session 2

ATTENDANCE SHEET FOR FIRST DAY 2.11.2023

Sl. No.	Name	Course	Roll no.	Signature
1.	Gyan Raj	BSc PSCS	21PCS5123	Gyan
2.	Akhshay Meena	BSc PSCS	21PCS5101	Akhshay
3.	Ishaan	BSc PSCS	21PCS5117	Ishaan
4.	Hanshi Gupta	BSc PSCS	21PCS5115	Hanshi
5.	Kanwalpreet Singh	BSc PSCS	21PCS5118	Kanwalpreet
6.	Antim	BSc PSCS	21PCS5105	Antim
7.	Himanchu	BSc PSCS	21PCS5116	Himanchu
8.	Ankit	BSc PSCS	21PCS5102	Ankit
9.	Ankit Kohli	BSc PSCS	21PCS5104	Ankit
10.	Pankaj Kumar	BSc PSCS	21PCS5125	Pankaj
11.	Shubham Pandey	BSc PSCS	21PCS5132	Shubham
12.	Surya Kisan	BSc PSCS	21PCS5155	Surya
13.	Vikash Prasad	B.Sc PSCS	21PCS5129	Vikash
14.	Diksha Manwal	B.Sc PSCS	21PCS5124	Diksha
15.	Nisha	BSc PSCS	21PCS5123	Nisha
16.	Sneha Singh	BSc PSCS	21PCS5134	Sneha
17.	Chaiti Verma	BSc PSCS	21PCS5131	Chaiti
18.	Laxmi Saha Bhandari	"	21PCS5122	Laxmi
19.	Dushyant Kumar	BSc(H) Maths	22HMT3196	Dushyant
20.	Ravi Gupta	BSc(H) Maths	22HMT3190	Ravi
21.	Vishal Tripathi	BSc(H) Maths	22HMT3163	Vishal
22.	Naman	BSc(H) Maths	22HMT3196	Naman
23.	Sahil	BSc(H) Maths	22HMT3174	Sahil
24.	Ashijet K. Vishwakarma	BSc(H) Maths	22HMT3167	Ashijet
25.	Ishaan	B.Sc(H) Maths	22HMT3170	Ishaan
26.	Ashay Srivastava	BSc(H) Maths	22HMT202	Ashay
27.	Parvatha Kumar	B.Sc(H) Maths	22HMT3190	Parvatha
28.	Nitin Kumar	BSc(H) Maths	22HMT3120	Nitin
29.	Akash Suryavanshi	BSc(H) Maths	22HMT3108	Akash
30.	Kaish	BSc PSCS	21PCS5120	Kaish
31.	Rajesh Raghuram	BSc PSCS	21PCS5124	Rajesh
32.	Vikas Pantap	BSc PSCS	21PCS5155	Vikas
33.	Ajay Manuja	BSc(H) Maths	22HMT3106	Ajay
34.	Rishi	BSc(H) Maths	22HMT3183	Rishi
35.	Ayushi Chaudhary	BSc(PSCS)	21PCS5109	Ayushi
36.	Umeshkumar	"	21PCS5103	Umesh
37.	Sheeraj	"	21PCS5110	Sheeraj

DEPARTMENT OF MATHEMATICS
 WORKSHOP ON "CALCULUS WITH MATHEMATICA"
 2ND NOVEMBER - 3RD NOVEMBER 2023
 ATTENDANCE SHEET FOR SECOND DAY 3.11.2023

Morning Session
 9:30 - 11:00

Sl. No.	Name	Course	Roll no.	Signature
1	Hriday Choudhary	BSc (PSCS)	21PES5114	Hriday
2	Pallavi Rajhanshi	BSc (PSCS)	21PES5124	Pallavi
3	Tanvi	BSc (PSCS)	21PES5117	Tanvi
4	Saurabh Narsani	BSc (PSCS)	21PES5177	Saurabh
5	Kuldeep Maena	BSc Maths (H)	22HMT3178	Kuldeep
6	Nisha Kumari	BSc Maths (H)	22HMT3128	Nisha
7	Akanksha Suryavanshi	BSc Maths (H)	22HMT3128	Akanksha
8	Ravindra Kumar	BSc Maths (H)	22HMT3190	Ravindra
9	Vivek Dwivedi	"	22HMT3166	Vivek
10	Akhay Srivastava	"	22HMT3102	Akhay
11	Ishahin	"	22HMT3170	Ishahin
12	Karan	BSc PSCS	21PES5141	Karan
13	Kushal Prapatti	BSc (PSCS)	21PES5121	Kushal
14	Abhishek Meena	BSc (PSCS)	21PES5101	Abhishek
15	Lakshit Bhandari	BSc (PSCS)	21PES5122	Lakshit
16	Ravi Kumar	BSc Maths (H)	22HMT3178	Ravi
17	Rishi Gadam	BSc Maths (H)	22HMT3195	Rishi
18	Dushyant Kumar	BSc (Math) (H)	22HMT3196	Dushyant
19	Ajith Kumar	BSc (H) Maths	22HMT3168	Ajith Kumar
20	Naman Bhatia	BSc (H) Maths	22HMT3136	Naman
21	Shivang Singh	BSc (H) Maths	22HMT3153	Shivang
22	Sahil	BSc (H) Maths	22HMT3174	Sahil
23	Amy Manuwa	BSc (H) Maths	22HMT3106	Amy
24	Ashwina Goyal	BSc (H) Maths	22HMT3101	Ashwina
25	Jyoti Jaiswal	BSc (H) Maths	22HMT3177	Jyoti
26	Rishi	BSc (H) Maths	22HMT3183	Rishi
27	Ujjwal Singh	BSc PSCS	21PES5137	Ujjwal
28	KHUSHBOO	BSc PSCS	21PES5119	Khushboo
29	Sachin Kumar	BSc PSCS	21PES5128	Sachin
30	Dheeraj	BSc PSCS	21PES5110	Dheeraj
31	Vikas Pandey	BSc PSCS	21PES5155	Vikas
32	Abhishek	BSc PSCS	21PES5145	Abhishek
33	Deviyani	BSc PSCS	21PES5146	Deviyani
34	Himanshu	BSc PSCS	21PES5116	Himanshu
35	Akhan	BSc PSCS	21PES5104	Akhan
36	Vikash Prasad	BSc PSCS	21PES5114	Vikash

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 ATTENDANCE SHEET FOR SECOND DAY 3.11.2023

Sl. No.	Name	Course	Roll no.	Signature
36	Ashish	BSc (PSCS)	21PES5107	Ashish
37	SAGHA	BSc (PSCS)	21PES5151	Sagha
38	Sohel	"	21PES5153	Sohel
39	Priyanshu Dhall	BSc (PSCS)	21PES5127	Priyanshu
40	Vikash Prasad	BSc (PSCS)	21PES5129	Vikash
41	Shubham Pandey	BSc (PSCS)	21PES5132	Shubham
42	(Aakush Patel)	BSc (Math)	22HMT3129	Aakush
43	Harsh Veda	BSc (Math)	22HMT3160	Harsh
44	Hanshi Gupta	BSc PSCS (5 th)	21PES5125	Hanshi
45	Nisha	BSc PSCS (5 th)	21PES5123	Nisha
46	Sudha Singh	BSc PSCS (5 th)	21PES5134	Sudha

SOME PICTURES FROM THE WORKSHOP







