

Mahatma Gandhi College ,Thiruvananthapuram

Department of Mathematics

Starting an Add-on Course on

Doing Mathematics with Sage-Math

for the academic Year 2022-23

Interested students can join the Program

Contact — Dr Ullas Chandran S V (8891711284)

Mahatma Gandhi College, Thiruvananthapuram
Department of Mathematics

Add-on course: Doing Mathematics with SageMath

Course code: MGMM03

Course outcomes: - students will be able

CO-1: To apply essential programming tools which are required for advanced mathematics.

CO-2: To understand about programming: conditionals and iterative loops, creating their own commands.

Starting SageMath using a browser, how to use the sage cell server <https://sagecell.sagemath.org/>, how to use SageMathCloud, creating and saving a sage worksheet, saving the worksheet to an .sws file, moving it and re-opening it in another computer system; Using sagemath as a calculator, basic functions (square root, logarithm, numeric value, exponential, trigonometric, conversion between degrees and radians, etc.);

Plotting : simple plots of known functions, controlling range of plots, controlling axes, labels, gridlines, drawing multiple plots on a single picture, adding plots, polar plotting, plotting implicit functions, contour plots, level sets, parametric 2D plotting, vector fields plotting, gradients;

Matrix Algebra : Adding, multiplying two matrices, row reduced echelon forms to solve linear system of equations, finding inverses of square matrices, determinants, exponentiation of matrices, computing the kernel of a matrix;

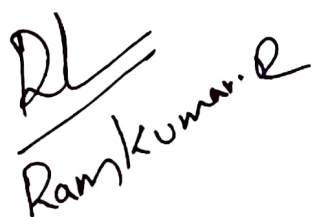
Defining own functions and using it, composing functions, multi variate functions;

Polynomials : Defining polynomials, operations on them like multiplication and division, expanding a product, factorizing a polynomial, finding gcd;

Solving single variable equations, declaring multiple variables, solving multi variable equations, solving system of non linear equations, finding the numerical value of roots of equations; complex number arithmetic, finding complex roots of equations; Finding derivatives of functions, higher order derivatives, integrating functions, definite and indefinite integrals, numerical integration, partial fractions and integration,

References

1. The SageMathCloud, <https://cloud.sagemath.com/>
2. Gregory V. Bard. Sage for Undergraduates, American Mathematical Society, available online at <http://www.gregorybard.com/Sage.html>



Ramkumar.R

Mahatma gandhi College, Thiruvananthapuram
Department of Mathematics

Add on Course on Sge-Math Programming
2022-23

List of Participants

S.No	Name	Class	E-mail	Phone Number
1	Sreelakshmi B J	II DCChemistry	sreelakshmijayan851@gmail.com	9562953020
2	Akhila B	II DCChemistry	akhila2707@gmail.com	7510752254
3	Sivarenjana R S	II DCChemistry	sivarenjanasivas@gmail.com	8330886772
4	Anoop.S	II DCChemistry	anoops3002@gmail.com	8590979935
5	Gopikrishnan	II DCChemistry	gopangopikrishnan@gmail.com	8089845047
6	Anjali Krishna. K. M	II DCChemistry	krishnaanjali2020@gmail.com	6282218703
7	Mithun G M	II DCChemistry	mithun8018505@gmail.com	9400391594
8	Rohith	II DCChemistry	rohithkannannes@gmail.com	8592948771
9	BS ADIDEV	II DCChemistry	adiadidev23@gmail.com	6235870493
10	Ananthakrishnan A	II DCChemistry	anathanak473@gmail.com	7736150663
11	Megha manoj R	II DCChemistry	meghamanoj772@gmail.com	9778533021
12	Meenu P S	II DCChemistry	meenups68@gmail.com	09778728599
13	Aswathy Krishnan	II DCChemistry	aswathykrishnan2805@gmail.com	6238767037
14	Vyshnavi V S	II DCChemistry	vyshnavivs436@gmail.com	8138885704
15	Kavya.j	II DCChemistry	kavyamurali1002@gmail.com	8590977012
16	Sreelal	II DCChemistry	sreelal0072003s@gmail.com	8129987569
17	Abhinav S	II DCChemistry	abhinavmufc03@gmail.com	08078492569



Signature of HOD
Ram Kumar R


Signature of Course co-ordinator

Mahatma Gandhi College, Thiruvananthapuram
Department of Mathematics
Add on Course on SageMath programming
(2022-23)

Marks of the participants in the Examination

S. No.	Name	Marks (out of 25)
1	Sreelakshmi B J	22
2	Akhila B	18
3	Sivarenjana R S	23
4	Anoop.S	Absent
5	Gopikrishnan	24
6	Anjali Krishna. K. M	17
7	Mithun G M	24
8	Rohith	Absent
9	B. S. Adidev	22
10	Ananthakrishnan. A	21
11	Megha manoj R	16
12	Meenu P S	18
13	Aswathy Krishnan	23
14	Vyshnavi V S	21
15	Kavya.j	18
16	Sreelal	14
17	Abhinav S	18


Signature of the HOD
Ramkumar


Signature of the Co-coordinator

Dr. ULLAS CHANDRAN S.V.
Assistant Professor
Department of Mathematics
Mahatma Gandhi College
Thiruvananthapuram-695004



GPS Map Camera



Thiruvananthapuram, Kerala, India

GWJV+V78, M G College Rd, Sree Nagar, Kesavadasapuram,

Thiruvananthapuram, Kerala 695004, India

Lat 8.532175°

Long 76.943117°

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MAHATMA GANDHI COLLEGE, THIRUVANANTHAPURAM

Kesavadasapuram, Pattom. P. O., Thiruvananthapuram - 695 004

Department of Mathematics



Certificate

Certified that Sri/Kum

has successfully completed the add-on course on 'SageMath Programming' (Course Code : MGMM03) conducted by the Department of Mathematics, Mahatma Gandhi College, Thiruvananthapuram during the academic year 2022-23.

Dr. Ramkumar R
Head of the Department

Dr. Ullas Chandran S. V.
Course Coordinator

Dr. V. M. Anandakumar
Principal

Mahatma Gandhi College, Thiruvananthapuram
Department of Mathematics

Report on Add-on : Doing Mathematics with SageMath

2022-23

The Mathematics Department extended an invitation for applications to the SageMath programming course, resulting in the selection of 17 second-year BSc Chemistry students. The program was inaugurated on June 27, 2022, by the College's Principal. Over the course of the program, participants received a total of 30 hours of instruction on SageMath, facilitated by Dr. Ullas Chandran S. V., an Assistant Professor in the Mathematics Department. An evaluation and feedback session took place on October 11, 2022, followed by the issuance of certificates to participants by the Principal on the same date.



Head of the Department



Dr. ULLAS CHANDRAN S.V.
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