

**PG DEPARTMENT OF PHYSICS**  
**DEVA MATHA COLLEGE, KURAVILANGAD**  
Affiliated to Mahatma Gandhi University, Kottayam



**REPORT**  
**ON**  
**ADD-ON COURSE**  
**Physics Simulations in C++**  
**Academic Year: 2022-2023**



**DEVA MATHA COLLEGE KURAVILANGAD**

**DEPARTMENT OF SELF FINANCE PHYSICS PG**

**Add on Courses offered for Students : 2022-2023**

**1. Basic LATEX**

**DMCK/ SFPHY/AD 29/2022**

**2. Physics Simulations in C++**

**DMCK/ SFPHY/AD 30/2022**



**Department Coordinator: Ms. Roselin George**

The cover features a dark blue background with a grid of small white dots. On the left, there is a large, stylized wireframe sphere. The text is centered and reads: 'DEVA MATHA COLLEGE, KURAVILANGAD' in white, followed by 'PG Department of Physics' and 'Add on Course' in a smaller white font. The main title 'PHYSICS SIMULATIONS' is in large, bold, white letters, and 'IN C++' is in large, bold, cyan letters at the bottom right. The college logo is in the top left corner.

**Academic year : 2022-2023**  
**Title : Physics Simulations in C++  
DMCK/SFPHY/AD 30/2022**  
**Instructional Hours : 30 Hours**

**Duration : 2 months**  
**Mode of Instruction : Online and offline**  
**Intake Capacity :25**  
**Eligibility : B Sc Physics**  
**Beneficiaries : I PG Students**  
**Date(s) on which program was conducted :9-1-23 to 11-2-23**  
**Organizing Dept./Club & Name of the Coordinator: :P G Department of Physics,  
Ms. Roselin George**  
**Number of students participated in the programme :8**  
**The number of students completed the programme :8**

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# 1. REPORT

P G Department of Physics, Deva Matha college Kuravilangad conducted an add-on course on “Physics Simulations in C++” from 9-1-23 to 11-2-23. The course was about the application of C+ program on various physical systems. Through this course students learned how to write a program in broad context. Students also developed the knowledge about functions, class, loop etc. The classes were conducted in online mode through google classroom and practical sessions were done in offline mode. At the end of the course, exam was conducted and the certificates are distributed

## 2. COURSE OBJECTIVES

1. Acquire working knowledge in C++ programming.
2. To develop algorithm for the study of different physical phenomena.
3. To develop algorithm of different numerical methods used in scientific computing.
4. To familiarize the graphing software gnuplot

## 3. SYLLABUS

### Module 1 (10 Hours)

#### **Basic concepts of object oriented programming**

- Structure of C++ program with simple examples
- C++ data types
- Creating the source file
- Compiling & Linking

### Module 2 (10 Hours)

- Operators in C++
- Control structures
- Function in C++
- Classes and Objects

### Module 3

- Analysis of different physical phenomena in scientific programming perspective
- Numerical methods with C++

### Module 4

- GNUPLOT

## 4.ASSESSMENT PROCEDURE

Written Exams (40%)

Online Exam(Objectivetype)(20% )

Practical Exams(40%)

Marks (%)	Grade	Grade point
91-100	A	5
81-90	B	4
71-80	C	3
61-70	D	2
Below 60	E	1

## 5. OUTCOME

- Ability to apply knowledge of computational physics
  - Identify, formulate, and solve physical systems
  - Understand the basic functions of classes and object in programming
- perceptive

## 6. RESOURCE PERSON

Mr. Vishnu Pran  
Teacher  
G H S Karippoothattu

## 7. STUDENTS LIST

<i>Sl no</i>	<i>Name</i>
1	Ajay Biju
2	Arathi Arun
3	Athira Santhosh
4	Bibin Xavier
5	Jeff M Ezhachery
6	Jerin Raju
7	Mathew S Moorppanattu
8	Radhika P R

## ATTENDANCE SHEET

Deva Matha College Kuravilangad

PG Department of Physics(SF)

Add-On Course : Attendance Register(I PG Physics)

Academic Year : 2022-2023

Course Name : Physics simulations in C++

Class no	Name	9-1-23	10-1-23	11-1-23	12-1-23	17-1-23	16-1-23	19-1-23 Hr:Prm	19-1-23 8-9pm	20-1-23	21-1-23
22PG101	Ajay Biju	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay
22PG102	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun
22PG103	Athira Santhosh	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira
22PG104	Bibin Xavier	B	B	B	B	B	B	B	B	B	B
22PG105	Jeff M Ezhachery	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff
22PG106	Jerin Raju	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)
22PG107	Mathew S Moorppanattu	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew
22PG108	Radhika P R	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika

H.O.D.  
 P. S. S. S. S.  
 S. S. S. S. S.  
 S. S. S. S. S.

Deva Matha College Kuravilangad

PG Department of Physics(SF)

Add-On Course : Attendance Register(I PG Physics)

Academic Year : 2022-2023

Course Name : Physics simulations in C++

Class no	Name	23-1-23	24-1-23	25-1-23	27-1-23	28-1-23	30-1-23	31-1-23 4-5pm	31-1-23 7-8pm	1-2-23	2-2-23
22PG101	Ajay Biju	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay
22PG102	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun
22PG103	Athira Santhosh	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira
22PG104	Bibin Xavier	B	B	B	B	B	B	B	B	B	B
22PG105	Jeff M Ezhachery	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff
22PG106	Jerin Raju	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)
22PG107	Mathew S Moorppanattu	M	M	M	M	M	M	M	M	M	M
22PG108	Radhika P R	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika

H.O.D.  
PHYSICS  
COLLEGE  
KURAVILANGAD



Deva Matha College Kuravilangad

PG Department of Physics(SF)

Add-On Course : Attendance Register(I PG Physics)

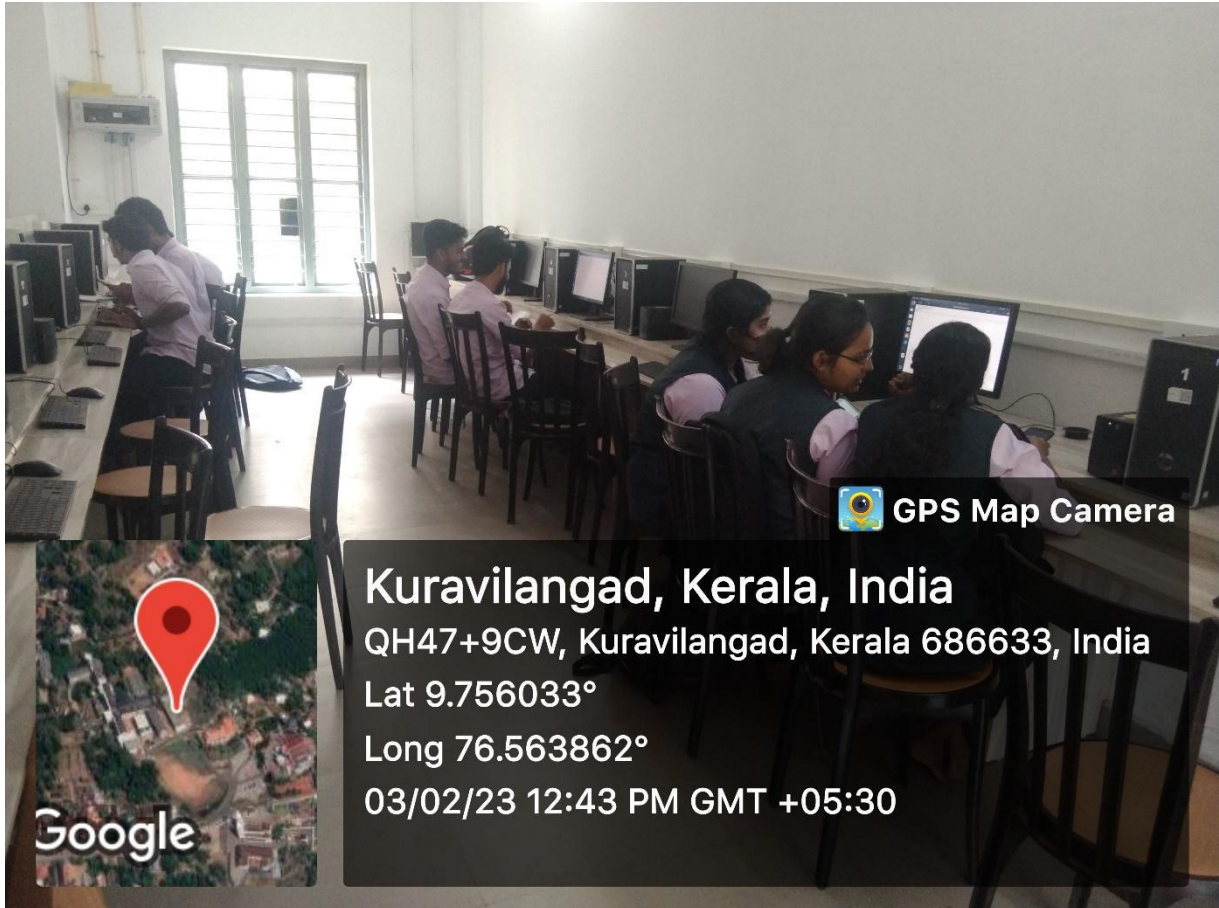
Academic Year : 2022-2023

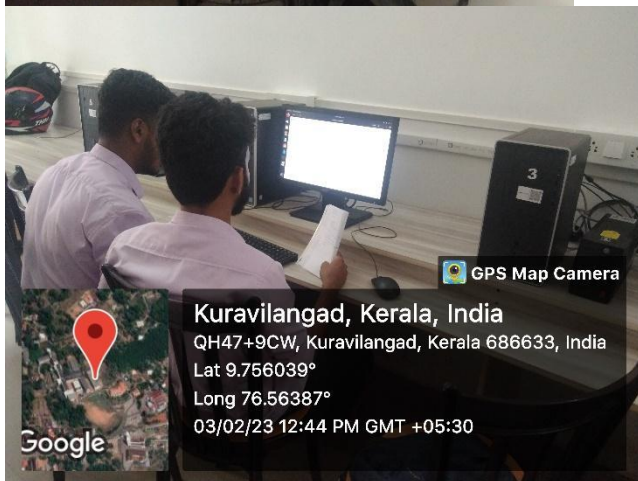
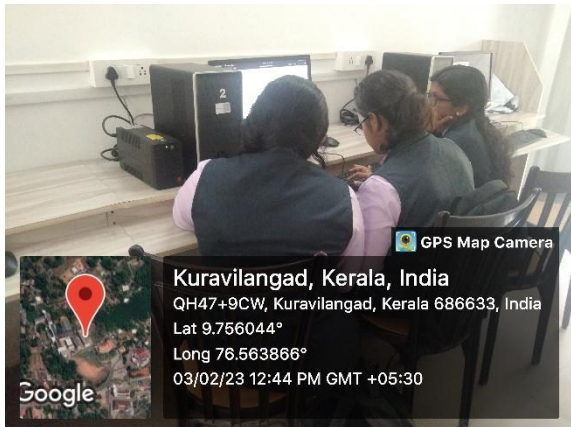
Course Name : Physics simulations in C++

Class no	Name	3-2-23	4-2-23	6-2-23	7-2-23	8-2-23 4-4pm	8-2-23 4-4pm	9-2-23	10-2-23 4-4pm	10-2-23 4-4pm	11-2-23
22PG101	Ajay Biju	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay	Ajay
22PG102	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun	Arathi Arun
22PG103	Athira Santhosh	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira	Athira
22PG104	Bibin Xavier	Bibin	Bibin	Bibin	Bibin	Bibin	Bibin	Bibin	Bibin	Bibin	Bibin
22PG105	Jeff M Ezhachery	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff	Jeff
22PG106	Jerin Raju	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)	(Jerin)
22PG107	Mathew S Moorppanattu	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew	Mathew
22PG108	Radhika P R	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika	Radhika

P.G. DEPT. OF PHYSICS  
DEVAMATHA COLLEGE

## 9. PHOTOS





### Teachers



Vishnu Pran



Roselin George



### Students



Ajay Biju



Aleena Varkey



Anjana Madhu



Arathi Nair



### Class 1



Introduction to programming

Posted Dec 29, 2022



### Class 2



Object Oriented Programming C...

Posted Dec 29, 2022



### Class 3



C++ Class1

Posted Jan 24



### Class 4



C++ class 2

Posted Jan 24



Stream



Classwork



People



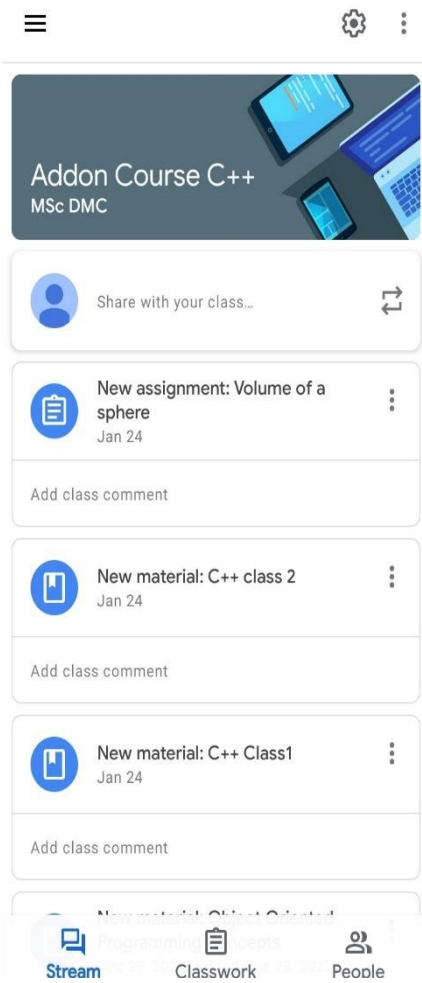
Stream



Classwork



People



## 10. MARK LIST

Sl .no	Name	Grade
1	Ajay Biju	A
2	Arathi Arun	A
3	Athira Santhosh	A
4	Bibin Xavier	A
5	Jeff M Ezhachery	A
6	Jerin Raju	A
7	Mathew S Moorppanattu	A
8	Radhika P R	A

## 11. FEEDBACK

Email Address	Name	How do you rate this course in general ?	How do you rate the talk and interaction with the resource person?	How do you rate the organization of this course?
jeffmezhachery1998@gmail.com	Jeff M EZHACHERY	5	5	5
bibinthymoottil@gmail.com	Bihin Xavier	5	5	5
arathiar.nair@gmail.com	Arathi Arun	5	5	5
jerinraju520@gmail.com	Jerin Raju	3	3	3
radhikapr666@gmail.com	Radhika pr	4	4	5
athirasanthosh9187@gmail.com	Athira Santhosh	5	5	5
mathewmoorppanattu@gmail.com	Mathew S Moorppanattu	5	5	5
pesajay2020@gmail.com	Ajay Biju	5	5	5

## 12. MODEL CERTIFICATE



# DEVA MATHA COLLEGE KURAVILANGAD

Re-Accredited with 'A' Grade (CGPA 3.23) by NAAC in 2017

Affiliated to Mahatma Gandhi University, Kottayam

Website: [www.devamatha.ac.in](http://www.devamatha.ac.in), E-Mail: [principaldmck@gmail.com](mailto:principaldmck@gmail.com)



## Certificate

This is to certify that **Ajay Biju** has successfully completed the Add-on Programme titled **Physics Simulations in C++ (DMCK/SFPHY/AD 30/2022)** conducted by the Department of PG Physics (SF), Deva Matha College Kuravilangad during the academic year 2022-23 with 'A' grade.

Certificate No: 1006

Kuravilangad  
...../...../20.....

.....  
Programme Co-ordinator

.....  
General Co-ordinator

**Dr. Sunil C. Mathew**  
Principal

*Roselin George*

**Roselin George**

**P G Department of Physics(SF)  
Deva Mattha College, Kuravilangad**

*Brincy Mathew*

**Dr. Brincy Mathew**  
Add-on Course General Coordinator



*Sunil C Mathew*  
Principal  
Deva Matha College  
Kuravilangad - 686 633