



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

### Department of Physics (Unaided)

.3.1	2.3.1 Participative Learning	2.3.1 Experiential Learning	2.3.1 Problem Solving Methodologies
1.	Industrial Visit ISRO	Inauguration of Leora	Problem Solving
2.	Scholarly talk series - Ms. Arya Sohan	Energy Survey	Projects
3.	Talk on Cosmology - The Past, The Present and The Future	Laboratory Sessions	
4.	Scholarly talk series ATC	Chandrayan Seminar	
5.	Seminar Presentation Contest	Seminar Presentations	
6.	Certificate course inauguration- 1st UG	Pratheekshonam 2.0	
7.	Certificate course	Open house visit to	



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	inauguration - 2nd UG	Cusat	
8.	Interactive session on Research opportunities in Atmospheric Physics	Internships- II MSc	
9.	Physics Junction	Internships- I MSc and II BSc students	

## Participative Learning

### 1. Industrial Visit to ISRO

- **Programme Objective:** Exposure to Space Research: To provide students with firsthand experience of the facilities and technologies used in space research and exploration.
- **Practical Knowledge:** To enhance students' understanding of theoretical concepts by showcasing their practical applications in the field of physics.
- **Career Guidance:** To offer insights into various career opportunities available in the field of space research and related industries.



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- Networking: To facilitate interactions with professionals and researchers in the field, allowing students to build contacts and explore potential future collaborations or career paths.
- Inspiration: To inspire students by showcasing the achievements and contributions of ISRO to the field of space exploration, motivating them to pursue careers in similar fields.
- Skill Development: To provide opportunities for students to develop skills such as critical thinking, problem-solving, and communication through interactions and observations during the visit.
- Understanding of Technology: To understand the advanced technologies used in space missions, which can broaden their perspective on the applications of physics in real-world scenarios.

### Program Report:

An industrial visit to the Indian Space Research Organisation (ISRO) in Bangalore was organized for BSc Physics students of Christ College (Autonomous), Irinjalakuda. The visit aimed to provide students with practical insights into the workings of ISRO and its contributions to space research and technology. 37 students along with faculty members of our college Mr. V P Anto and Ms.Megha P S.

### Program attained Outcome:

The industrial visit to ISRO Bangalore was a valuable learning experience for the BSc Physics students of Christ College. It provided them with insights into the practical applications of physics



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in the field of space research and technology. The visit also inspired the students to explore career opportunities in the space sector.

**U. R. RAO SATELLITE CENTRE  
BANGALORE**

Malathy. S  
Head, Library, Documentation & Outreach Division  
Multimedia Infrastructure, Documentation & Outreach Group (MDOG)

☎080-2508 4452

email: studentvisit@ursc.gov.in

18 October 2023

To,  
The Principal  
Christ College (Autonomous),  
Irinjakakuda - 680 125  
Kerala

Sir / Madam,

**Sub: Permission to visit U R Rao Satellite Centre - Reg.**

We are in receipt of your email letter dated Oct 11, 2023 requesting permission to visit URSC. Accordingly, you are permitted to visit on the following date and time.

**01-12-2023**

**10:00 AM to 11:00 AM**

Please provide details of your team members and faculty members along with an authorization letter from Head of the department restricted to 40 members per batch only, subject to the following conditions

Your team may report to URSC Reception Counter of Centre 15 minutes in advance in order to complete the administrative formalities for issuing entry passes.

1. You are requested to strictly adhere to the time schedule mentioned above.
2. In case of any exigencies, we may cancel the above visit without any intimation.
3. Carrying Camera and taking photography inside this Centre is strictly prohibited.

Details of the visitors :

Sl. No.	NAME	Designation	Aadhar card number	Contact number	Age



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METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

1	ADITHYAN.K.R.	STUDENT	397506050615	974568691 6	18
2	NIBIL V. B	STUDENT	659890645846	859071960 5	19
3	AVINASH K A	STUDENT	523111664455	773688195 1	19
4	AKSHAYA P ANIL	STUDENT	5186 2128 6704	949609338 0	19
5	ARUNDHATHY DEVI M	STUDENT	4340 7329 4883	907242737 9	20
6	DEVIMOL M.S	STUDENT	805268682589	907214713 9	19
7	ATHIRA V M	STUDENT	3742 2067 8145	759398025 2	20
8	FATHIMATHUL HAAIFA V S	STUDENT	624280509113	871417462 8	19
9	DIYA NOURIN M A	STUDENT	9466 6292 6706	974552697 1	19
10	ANASWARA DAS M.J	STUDENT	6645 4189 8788	894326809 4	19



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11	GLADIYA DIXON	STUDENT	4956 2165 2429	974722870 9	19
12	ATHUL PS	STUDENT	4269 6682 7667	994778937 4	19
13	SAFA PS	STUDENT	5854 0571 8600	904839929 6	19
14	TINTO SHAJU	STUDENT	922332162969	963348190 1	19
15	JANEETA ELIZABATH K J	STUDENT	5310 0353 7971	904817521 1	20
16	KRISHNA SUDHEER	STUDENT	3555 0896 4148	974668061 1	19

Irinjalakuda  
19.10.2023

Yours faithfully  
V P ANTO



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## 2. Scholarly talk series -Ms. Arya sohan

### Program Objectives/Expected outcomes:

- Highlighting Key Research Areas
- Poviding Information on Prestigious Fellowships
- Explaining the Application Process
- Highlighting the Benefits of Fellowships
- Connecting with Institutions and Advisors



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- Discussing International Opportunities
- Providing Resources for Further Exploration

**Program Report:**

Department of Physics(unaided), Christ College(Autonomous), Irinjalakuda organized an invited talk on the topic “Fellowships & Internship Programs for Physics Research” as part of the newly introduced “Scholarly Talk Series” for the skill enhancement of students and to provide better awareness about various opportunities . The talk was held on 20<sup>th</sup> July 2023, from 2 pm onwards at room no: SC 23. The Program started with the blessing of God. Ms. Anju Sebastian, Assistant Professor, Department of Physics (Self - Financing), convenor of the Program, delivered the welcome speech. Prof. V P Anto (Head, Department of Physics (Self - Financing), delivered the presidential address. The Program was felicitated by Prof. V P Joseph, PG Coordinator, Physics (Self - Financing). Ms. Aswathi P V , Assistant Professor, Department of Physics (Self - Financing), introduced the invited speaker, Ms. Arya Sohan (senior research fellow, University of Hyderabad, Newton Bhabha Research fellow (2019-2020)). The official ceremony was concluded by vote of thanks, by student coordinator, , Ms. Lakshmi V S. of II MSc Physics. Ms. Navya Bhaval of III BSc Physics served as the M.C.

After the official addressing ceremony, Ms. Arya Sohan delivered an interesting talk on the topic “Fellowships & Internship Programs for Physics research”. She emphasized on the various fellowships and Internship Programs in the field of Physics and also mentioned how to apply for the same. She also talked about the importance of proposal making and various steps to make a proposal. Ms. Arya Sohan who serves as the senior research fellow at University of Hyderabad and the Newton bhabha Research fellowship holder, was truly an inspiration for the students, especially coming from the rural and semi urban backgrounds. Students from III BSc physics, I





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and II MSc physics were participated in the event. After the talk, an interactive session also was held. Various Indian fellowships such as VSRP, UGC DEA CSR etc and various international fellowships such as Newton Bhabha PhD placement, Full Bright- Nehru fellowship, Marie-Curie fellowship, DAAD etc were explained. Event was very fruitful and it helped to ignite the student knowledge about the fellowships and Internship Programs in physics research . Students also involved in the feedback sessions actively. Certificates were provided to the participants.

**Program attained Outcome:**

1. Participants were really got inspired about the various opportunities in Physics
2. Detailed knowledge about the application procedure of various foreign fellowships
3. Information about various summer research fellowships.
4. Helped in nurturing more interest in various fields of Physics.



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Department of Physics (Unaided)  
Organizes  
an Invited Talk on



**Fellowship & Internship Programmes for  
Physics Research**



Invited Speaker  
**Ms. Arya Sohan**  
Senior Research Fellow, University of Hyderabad  
Newton Bhabha Research Fellow (2019-20)

On July 20, 2023  
from 2.00 PM to 3.00 PM  
at Room No. SC 23

Rev. Dr. Jolly Andrews CMI Principal  
Rev. Dr. Wilson Tharayil CMI Director  
Prof. V. P. Anto HOD  
Ms. Anju Sebastian Convenor  
Ms. Lakshmi V. S & Ms. Navya Bhavani Student Coordinators

Organizing Committee  
Prof. V. P. Joseph, Mr. Jose Sunny, Ms. Simmy Jose, Ms. Anjali Joby, Ms. Aswathi P.V, Ms. Megha P.S

60	MANUEL JOSHY VADANAE -THALA	2 <sup>nd</sup> BSc PHYSICS (SF)	[Signature]
61	ARABINDA NOHA ROCHA	3 <sup>rd</sup> BSc PHYSICS (SF)	[Signature]
62	DEVIKA K-R	2 <sup>nd</sup> BSc PHYSICS	[Signature]
63	Annamalyn	3 <sup>rd</sup> BSc Phys SF	[Signature]
64	Justine Anthonys	3 <sup>rd</sup> BSc Phys	[Signature]
65	Shalini Anilkumar	"	[Signature]
66	Athira V	2 <sup>nd</sup> BSc Physics	[Signature]
67	Chandruhan Jay	2 <sup>nd</sup> BSc Physics SF	[Signature]
68	ARJUN GRESHEAL	2 <sup>nd</sup> BSc Phys (SF)	[Signature]
69	HENJO HENRY	2 <sup>nd</sup> BSc Phys (SF)	[Signature]
70	Denit Davis	PhD Physics student	[Signature]
71	Navya Bhavani	2 <sup>nd</sup> BSc Phys (SF)	[Signature]
72	ANAGHA M.S	3 <sup>rd</sup> BSc PHYSICS (SF)	[Signature]
73	Catherine Mary Paul	PhD Research student	[Signature]
74	APARNA K	2 <sup>nd</sup> BSc Phys	[Signature]

Sl. No	Name of the Participant	Designation	Signature
1	Dr. K.P. Durg	Asst. Prof.	[Signature]
2	Dr. Edwin Jose	Asst. Prof.	[Signature]
3	Dr. Kavin Joseph	Asst. Professor	[Signature]
4	Adhwaitha Narayanank	2 <sup>nd</sup> year BSc Phys (SF)	[Signature]
5	Jathu Krishna M	2 <sup>nd</sup> year BSc Phys (SF)	[Signature]
6	Flower Mary	Student	[Signature]
7	Roshini Jayaram	"	[Signature]
8	Aparna S	"	[Signature]
9	Lakshmi V.S	"	[Signature]
10	Athira	"	[Signature]
11	Angel Ananya L	2 <sup>nd</sup> BSc Physics (SF) student	[Signature]
12	Jha Manu Jay	"	[Signature]
13	Navya Bhavani	"	[Signature]
14	Arya Smit	1 <sup>st</sup> BSc Phys (SF) student	[Signature]
15	Shreya Jayaprakash	2 <sup>nd</sup> BSc Physics (SF)	[Signature]



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### 3. Invited Talk on “COSMOLOGY- THE PAST, THE PRESENT AND THE FUTURE”

#### Program Objectives:

- Introduction to Cosmology
- Explaining Key Concepts and Theories
- Highlighting Important Discoveries and Observations
- Exploring Current Research and Open Questions
- Connecting Cosmology with Other Fields
- Addressing the Implications of Cosmological Discoveries



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METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Engaging with the Audience
- Providing Resources for Further Learning

### Program Report:

The cosmology talk, held on August 3, 2023 at Chavara Seminar Hall, was a comprehensive and engaging session aimed at exploring the vast and intriguing field of cosmology. The event was attended by a large number of participants, ranging from enthusiastic students to seasoned professionals in the field of astronomy. The talk began with a clear definition of cosmology and its scope. The speaker provided a historical timeline, highlighting significant milestones from ancient cosmological models to contemporary theories. The Big Bang Theory was explained in detail, supported by evidence such as cosmic microwave background radiation and the redshift of galaxies. Concepts of dark matter and dark energy were introduced, along with their roles in the universe's structure and expansion. The speaker reviewed critical discoveries, including Hubble's Law, which describes the universe's expansion, and the Cosmic Microwave Background, a remnant of the early universe. The talk also covered the contributions of major observatories like the Hubble Space Telescope and the Planck Satellite. Ongoing research efforts were discussed, focusing on the latest developments in understanding dark matter, dark energy, and the fate of the universe. The speaker highlighted open questions that continue to challenge scientists. The talk illustrated how cosmology intersects with other scientific fields, emphasizing the importance of interdisciplinary research. The connections between cosmology, particle physics, and quantum mechanics were explored. The philosophical and existential implications of cosmological discoveries were addressed, prompting the audience to consider their place in the universe. The broader impact of these discoveries on scientific thought and our worldview was discussed. The



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session included interactive discussions and a Q&A segment, allowing the audience to delve deeper into topics of interest. Visual aids and simulations were used effectively to clarify complex concepts. The speaker provided a list of recommended books, articles, and online resources for further exploration of cosmology. Suggestions for joining scientific societies and attending related events were also offered.

#### **Program attained Outcome:**

The talk on cosmology was a resounding success, achieving its objectives and leaving the audience with a deeper understanding of the universe. The engaging presentation, combined with interactive discussions, provided a comprehensive overview of cosmology's past, present, and future. Attendees left with a renewed curiosity and enthusiasm for the field, as well as resources to continue their exploration of the cosmos.



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Department of Physics (Unaided)  
Organizes an Invited talk on the occasion of



**INAUGURATION OF LEORA**  
(PHYSICS STUDENTS FRATERNITY)



**Keynote speaker**  
**Dr. Nijo Varghese**  
Asst. Professor, Sacred Heart College, Chalakudy, India  
Topic : COSMOLOGY - The past, present and future

On August 3, 2023  
from 1.00PM to 2.00PM  
at Saint Chavara Multimedia Hall

Rev. Dr. Jolly Andrews CMI  
Principal

Rev. Dr. Wilson Tharayil CMI  
Director

Prof. V.P Anto  
HOD

Ms. Anjali Joby & Mr. Jose Sunny  
Convenors

Mr. Dinu Denny & Ms. Anjana A B  
Student convenors

Organizing committee:

Sl. No.	Name of the participant	Department	Designation	Course/Batch	Signature
1	Godwin vs	Bvoc-IT	Student	Bvoc-IT 2nd year self financing	
2	Catherine Darily Varghese	Bvoc IT	Student	Bvoc IT, 2nd year	
3	Jolsna prakash	Physics unaided	Student	1 Bsc physics self financing	
4	Sinath K.D	Bvoc IT	Student	2nd semester Bvoc IT	
5	Ashik shibu	Bvoc. IT	Student	Bvoc IT (self financing)	
6	ARUNDHATHY DEVI M	PHYSICS	Student	BSc Physics (self financing)	
7	Lakshmi V S	Physics (self finance)	Student	1 MSc Physics (self financing)	
8	Fathimathul Haalifa V S	Bsc physics unaided	Student	1 BSc physics self financing	
9	Paulmon T Jaison	Physics	Student	II Msc Physics(Aided)	
10	Arya sunil	Physics	Student	1 Msc physics self financing	



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11	Abhirth C Preej	Physics Self Finance	Student	I MSc Physics Self financing	
12	ANITA JOY	Physics	Student	2 MSc. Physics aided	Mykts
13	ALEENA K J	Physics	Student	1 MSc. Physics (aided)	Bec. rkt
14	Afnan	Physics	Student	1 Msc Physics (Self Financing)	
15	Vaishnavi V G	B Sc physics	Student	Self	
16	JERIN P J	Physics	Student	1 Mac Physics (self financing)	L
17	E A Athira	Physics	Student	Msc Physics (aided)	
18	Sujitha v s	Physics	Student	II BSc Physics (self financing)	
19	Shreya Jayaprakash	Physics self financing	Student	1 MSc Physics self financing	
20	Monica M S	Physics	Student	1 MSc Physics (Aided)	
21	Tinto shaju	Bsc physics self finance	Student	1 bsc physics self finance	
22	Akshaya P Anil	Physics self	Student	Bsc physics self	
23	Aasif seethy	B.voc IT	Student	II B.VOC IT	
24	Gautam Krishna MS	B.Voc IT	Student	2 nd yr physics self	
25	Aneena Berlin	Physics self	Student	1 Msc physics (self financing)	
26	FARHAN A F	Physics	Student	1 Msc physics (self financing)	

27	Alvin Sebastian	Computer science	Student	B.voc It (self financing) second year	
28	Sanjha T T	Physics	Student	Msc Physics (aided)	
29	Naveen KR	IT	Student	II BVOC IT (unaided/self financing)	
30	Arjun Hari C	Physics	Student	1 Msc physics self	
31	Aparna.k.s	Physics	Student	1Msc Physics self financing	
32	Lenus	Bvoc It	Student	Bvoc It self	
33	Hiba.T.K	Physics	Student	2 MSc Physics (Aided)	
34	Athul ps	Physics (SF)	Student	1st year BSc physics self financing	
35	Vishnu Madhavan V M	B.Voc IT	Student	2 B Voc IT / self financing	
36	Adithyan.K.R.	Bsc.physics self	Student	Bsc.physics self finance	
37	Krishnapriya T.L	Physics	Student	1MSc Physics (aided)	
38	Leen mariya	B.voc	Student	B.voc r , second year	
39	Anjana A B	Physics	Student	Bsc physics self 1st year	
40	ARUNDHATHY DEVI M	PHYSICS	Student	I BSc Physics ( self financing )	
41	Sam Chiryankandath	physics	Student	I BSC PHYSICS SELF FINANCED	



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42	Dimu Denny	Physics self	Student	Self financing	
43	Aleena A S	Physics (aided)	Student	1 Msc Physics Aided	
44	Akhila Raphael	Physics	Student	1 Msc Physics	
45	Avinash k A	Physics	Student	Bsc Physics self financing	
46	JESSE RAJUMON	BSc physics	Student	1 BSc physics (Self financing)	
47	Gladiya Dixon	Bsc physics (self)	Student	Bsc physics self financing	
48	Milan Roy	IT	Student	2 Bvoc IT	
49	Alfred Sonvin	Physics Unaided	Student	1 Bsc Physics Unaided	
50	ATHIRA V M	Bsc physics( self)	Student	1 BSc physics self financing	
51	Arya Anil A.	Bsc physics self	Student	Bsc physics self financing	
52	Riya Shaju	Bsc physics self	Student	1 bsc physics self	
53	Suryapriya Ca	Physics	Student	Bsc physics self financing	
54	Nandhana ps	Bcs physics self	Student	1 year BCS physics self financing	
55	Alan Antony K. J	Msc. Physics	Student	1 Msc Physics (self)	
56	SIYA SANTHOSH	BSC PHYSICS	Student	2 BSC PHYSICS (SELF FINANCING)	
57	Chackochan Joji	Physics (unaided)	Student	2 Bsc. Physics (self financing)	



#### 4. Scholarly Talk Series

##### Program Objectives:

##### 1. Describe the Internship Experience:

- Provide an overview of the ATC unit at Calicut Airport.
- Share daily responsibilities and tasks undertaken during the internship.





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2.Highlight Key Learning Outcomes:

- Discuss technical skills and knowledge gained.
- Reflect on personal and professional development.

3.Showcase Real-World Applications:

- Illustrate how theoretical knowledge was applied in practical scenarios.
- Present case studies or specific incidents handled during the internship.

4.Encourage Peer Engagement:

- Inspire fellow students to consider internships in aviation and related fields.
- Offer tips and advice on securing and making the most of such opportunities.

**Program Report:**

The talk began with an introduction to Calicut Airport's Air Traffic Control unit, detailing its structure, functions, and importance in ensuring aviation safety and efficiency. The students provided an overview of the ATC's role in managing aircraft movements on the ground and in the airspace around the airport. The interns described their daily activities, which included monitoring radar displays, communicating with pilots, coordinating flight plans, and managing air traffic flow. They emphasized the critical nature of their work and the high level of precision required.



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The students highlighted several key learning outcomes from their internships: Mastery of radar and communication systems, Understanding of air traffic management procedures, Knowledge of aviation regulations and standards, Enhanced decision-making and problem-solving abilities, Improved communication skills, both verbal and written, increased ability to work under pressure and manage stress.

To illustrate the practical application of their knowledge, the students presented case studies of specific incidents they encountered during their internships. These included managing emergency situations, dealing with adverse weather conditions, and coordinating with various airport departments to ensure smooth operations. The interns encouraged their peers to consider pursuing internships in the aviation sector, highlighting the benefits of gaining hands-on experience and building professional networks. They provided practical advice on how to apply for internships, prepare for interviews, and maximize learning opportunities.

#### **Program attained Outcome:**

The talk concluded with a Q&A session, where the audience had the opportunity to ask questions and engage with the speakers. The students' presentation was well-received, with attendees expressing appreciation for the insights shared and the encouragement to explore careers in aviation. The event successfully achieved its objectives, offering a detailed account of the students' internships at ATC Calicut Airport, and inspiring fellow students to pursue similar opportunities for their professional growth.



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S. No.	Name of the participant	Department	Designation	Course/Batch	Signature
1	Godwin S	Bioc-IT	Student	Bioc-IT 2nd year self financing	[Signature]
2	Catherine Dury Joseph	Bioc-IT	Student	Bioc-IT 2nd year	[Signature]
3	Johny Pragasam	Physics (unaided)	Student	1 Mic Physics self financing	[Signature]
4	Shahid K.C	Bioc-IT	Student	2nd semester Bioc-IT	[Signature]
5	Ashik Shibu	Bioc-IT	Student	Bioc-IT self financing	[Signature]
6	ARUNIMA THY DEV M	PHYSICS	Student	1 Mic Physics self financing	[Signature]
7	Lalitha V S	Physics (self financing)	Student	1 Mic Physics self financing	[Signature]
8	Euphemia Hilda V S	Bioc physics unaided	Student	1 Mic physics self financing	[Signature]
9	Paulson T Jabon	Physics	Student	1 Mic Physics self financing	[Signature]
10	Arya sunil	Physics	Student	1 Mic physics self financing	[Signature]

11	Ashish C Prasad	Physics self financing	Student	1 Mic Physics self financing	[Signature]
12	ANITA JOY	Physics	Student	2 Mic Physics unaided	[Signature]
13	ALEXIA K J	Physics	Student	1 Mic Physics self financing	[Signature]
14	Ashin	Physics	Student	1 Mic Physics self financing	[Signature]
15	Vishnu V G	B.Sc physics	Student	self	[Signature]
16	JERIN P J	Physics	Student	1 Mic Physics self financing	[Signature]
17	E A ANNA	Physics	Student	1 Mic Physics self financing	[Signature]
18	Sudhakar	Physics	Student	1 Mic Physics self financing	[Signature]
19	Shreyas Ananthan	Physics self financing	Student	1 Mic Physics self financing	[Signature]
20	Manika M S	Physics	Student	1 Mic Physics self financing	[Signature]
21	Trisha Shibu	Bioc physics self financing	Student	Bioc physics self financing	[Signature]
22	Ashwarya P Anil	Physics self	Student	Bioc physics self	[Signature]
23	Aashritha	Bioc-IT	Student	B.Sc/IT self	[Signature]
24	Gayathri Krishna MS	Student	Student	2 nd yr physics self	[Signature]
25	Ananya Barin	Physics self	Student	1 Mic physics self financing	[Signature]
26	FABIAN A F	Physics	Student	1 Mic physics self financing	[Signature]

27	Ashwin Sebastian	Computer science	Student	2 Mic self financing unaided	[Signature]
28	Sanjith T V	Physics	Student	1 Mic Physics unaided	[Signature]
29	Naveen M	IT	Student	1 Mic self financing	[Signature]
30	Ashwin C	Physics	Student	1 Mic physics self financing	[Signature]
31	Aparna S	Physics	Student	Bioc physics self financing	[Signature]
32	Arin	Bioc-IT	Student	Bioc-IT self financing	[Signature]
33	Shikha K	Physics	Student	2 Mic Physics unaided	[Signature]
34	ANNA M	Physics self	Student	1 Mic physics self financing	[Signature]
35	Manoj Mathan	Physics self	Student	2 Mic self financing	[Signature]
36	Ashwin P K	Bioc physics self	Student	Bioc physics self financing	[Signature]
37	ANUSHA L A	Physics	Student	1 Mic Physics unaided	[Signature]
38	Leena Mary	Bioc	Student	Bioc physics self financing	[Signature]
39	Adithyan A S	Physics	Student	1 Mic physics self financing	[Signature]
40	ARUNIMA THY DEV M	PHYSICS	Student	1 Mic Physics self financing	[Signature]
41	Sari Chirayambath	physics	Student	1 Mic Physics self financing	[Signature]

42	Olivia Denny	Physics self	Student	Self financing	[Signature]
43	Ashna A S	Physics (unaided)	Student	1 Mic Physics unaided	[Signature]
44	Ashika Kishan	Physics	Student	1 Mic Physics unaided	[Signature]
45	Anusha K A	Physics	Student	Bioc Physics self financing	[Signature]
46	JESSA RAJAGOVIN	Bioc physics	Student	1 Mic physics self financing	[Signature]
47	Shruthi Shree	Bioc physics self	Student	Bioc physics self financing	[Signature]
48	Milana Roy	IT	Student	1 Mic self	[Signature]
49	Aradhya	Physics Unaided	Student	1 Mic Physics unaided	[Signature]
50	AARADHYA M	Bioc physics self	Student	1 Mic physics self financing	[Signature]
51	Ashika A	Bioc physics self	Student	Bioc physics self financing	[Signature]
52	Riya Shibu	Bioc physics self	Student	1 Mic physics self	[Signature]
53	Srinivasan Ce	Physics	Student	Bioc physics self financing	[Signature]
54	Anushka pn	Bioc physics self	Student	1 Mic Bioc physics self financing	[Signature]
55	Aishwarya K J	Phys. Physics	Student	1 Mic Physics self	[Signature]
56	SIVA SANKRISHNAN	BSC PHYSICS (UNAIDED)	Student	1 Mic Physics self financing	[Signature]
57	Charuchandran JH	Physics (unaided)	Student	1 Mic Physics self financing	[Signature]



Department of Physics (Unaided)  
Scholarly Talk Series – ATC interns



Invited Speakers : Ms. Aparna K, Ms. Angel Mariya L, Ms. Havva Hyrath K, Ms. Sahasra S  
M.Sc. 2021-2023 batch

21 JULY 2023 from 2.45 PM to 4 PM  
at SC 23

Rev. Dr. Jolly Andrews CMI Principal  
Rev. Dr. Wilson Tharayil CMI Director  
Prof. V. P. Anto HOD  
Ms. Anjali Joby Convener  
Ms. Lakshmi V S Student Coordinator  
Organizing Committee  
Dr. V. P. Joseph, Ms. Simmy Jose, Mr. Jose Sunny, Ms. Anju Sebastian, Ms. Megha P S, Ms. Aswathi P V



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 5. Seminar Presentation Contest

### Program Objectives/Expected outcomes

- Students gained the ability to demonstrate the skills necessary to develop and present a PowerPoint presentation in a professional manner.
- It helped students to build the confidence and courage to deliver ideas to the public.
- Helped to strengthen the relationship between students

### Program Report:.

A presentation contest was organized for the MSc Physics (Self) students of 2022-2024 batch based on recent advancements in Physics and Technology. Ms. Anju Sebastian, Staff coordinator of the Program, delivered the welcome address. The meeting was inaugurated by Prof. V.P. Anto, Head of the Department, Physics(Self). Dr. V.P Joseph, Associate Professor, Dept. of Physics (Self), Christ College (Autonomous), Irinjalakuda has delivered the felicitation along with a brief description on the contest.

Oral presentations were judged for originality and creativity, organization of content, oral presentation, knowledge of material, clarity of artwork (charts, graphs, slides), and overall presentation. Students were given 15 minutes for their presentation and 5 minutes for answering questions from the judges and audience. Mrs. Anju Sebastian and Mrs. Simmy Jose, Asst. Professor (Adhoc) evaluated the presentations of the participants . Eleven students presented seminars on various topics related to astrophysics, materials science, AI etc.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Jerin PJ received the first prize, Lakshmi V.S the second prize and third prize was shared with Arjun and Lakshmi. Participation certificates were distributed among the participants. Students of I Sem PG Physics(Self) and teachers of the department were present as audience. Program was a great success and provided a platform for the PG students to get familiar with various fields of science. The session was concluded with feedback from the audience and judges.

**Programme Outcomes**

- Students gained the ability to demonstrate the skills necessary to develop and present a
- PowerPoint presentation in a professional manner.
- It helped students to build the confidence and courage to deliver ideas to the public.
- Helped to strengthen the relationship between students.
- Student audience also get a chance to familiarize with variety of topics.





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



Sl. No	Name of the Participant



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

		Topic
1	ABHIJITH C PREEJ	DISCOVERY OF HIGH REDSHIFT GALAXIES
2	AFNAN	SOLAR GRAVITATIONAL LENS FOR EXTREME-RESOLUTION IMAGING
3	ALAN ANTONY K. J	BLACK HOLES ARE THE SOURCE OF DARK ENERGY
4	APARNA K.S	ASTROPHYSICAL FLUIDS
5	ARJUN HARI C	PIEZOELECTRIC ENERGY HARVESTING
	ARYA SUNIL	INTERNET OF NANO THINGS



<b>CRITERION</b>	<b>II</b>	<b>Teaching-Learning and Evaluation</b>
KEY INDICATOR	2.3	<b>Teaching - Learning Process</b>
METRIC	2.3.1	<b>Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:</b>

6		
7	FARHAN A F	HOW TO BOOST SCIENTIFIC PROGRESS(TECHNOLOGICAL SINGULARITY)
8	JERIN P J	SURFACE WATER OCEAN TOPOGRAPHY
9	LAKSHMI V S	AN INTRODUCTION TO NANOROBOTICS – AN UPCOMING REVOLUTION
10	ROSHINI JAYARAJ	TOUCH SCREEN
11	SHREYA JAYAPRAKASH	BIOELECTROMAGNETISM

## **6.Program Name: Certificate course inauguration- 1st UG**

### **Program Objectives:**





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

#### Enhanced Knowledge:

- A deeper understanding of fundamental physics concepts, principles, and theories.
- Exposure to advanced topics that may not be covered in a standard curriculum.

#### Practical Skills:

- Hands-on experience with laboratory equipment and techniques.
- Development of experimental and analytical skills.

#### Problem-Solving Abilities:

- Improved ability to apply physics concepts to solve complex problems.
- Enhanced critical thinking and logical reasoning skills.

#### Career Advancement:

- Better preparation for careers in research, academia, or industry.
- Increased qualifications that can make you more competitive in the job market.

#### Preparation for Further Studies:

- A solid foundation for pursuing higher education, such as a master's or PhD in physics or related fields.
- Readiness for competitive exams like JAM or GATE for entry into prestigious institutions.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

### Networking Opportunities:

- Connections with peers, instructors, and professionals in the field of physics.
- Opportunities for collaboration on projects and research.

### Certification:

- An official certificate that validates your knowledge and skills in physics, which can be added to your resume.

### Personal Growth:

- Increased confidence in your abilities and knowledge.
- A sense of accomplishment and motivation to pursue further studies or career goals.

### Program Report:

Inauguration of the certificate course “Basics of Biomedical Physics” offered by the Department of Physics(Unaided) to the students of first year physics was held on 18/01/20234 at Room number SC 15. The event began with a prayer. Ms Megha P S(Certificate course coordinator)delivered the welcome address and highlighted the importance and objectives of the course. Prof. V P Anto (Head of the Department of Physics(self) delivered the presidential address and also emphasized the significance of acquiring new skills and knowledge in today's competitive world.Following the presidential address, Dr.Xavier Joseph (Vice Principal ,Christ college), the chief guest for the event, inaugurated the course. He spoke about the relevance of the course to the industry and its potential impact on the participants' careers.The event also included a felicitation by Dr. Shinto K



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

G( IQAC Coordinator), who shared insights and experiences related to the course topics. The inauguration ceremony concluded with a vote of thanks by Anugraha Rajith (student representative), who expressed gratitude to all the dignitaries, participants, and organizers for their contributions to making the event a success. Overall, the inauguration ceremony was well-received, setting a positive tone for the course and inspiring the participants to make the most of the learning opportunities ahead.

#### **Program Outcome:**

The inauguration program for a certificate course in Basics of Biomedical Physics typically focuses on several key outcomes:

1. Introduction to Biomedical Physics: Participants gain a foundational understanding of the principles and applications of physics in the biomedical field.
2. Curriculum Overview: Attendees receive an outline of the course content, including topics like medical imaging, radiation therapy, and biophysics.
3. Skill Development: The program aims to enhance practical skills related to the use of biomedical instruments and technologies.
4. Networking Opportunities: Participants have the chance to connect with faculty, industry professionals, and peers, fostering collaboration and knowledge exchange.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

5. Future Opportunities: The course may open pathways for further education and careers in healthcare, research, or technology sectors.

6. Engagement and Motivation: The inauguration sets a tone of enthusiasm and commitment, encouraging active participation throughout the course.

These outcomes help ensure that participants are well-prepared for both academic and professional pursuits in biomedical physics.



**DEPARTMENT OF PHYSICS (UNAIDED)**

*Presents*

**Inauguration of Certificate Course**

**'BASICS OF BIOMEDICAL PHYSICS'**



January 18, 2024



3.00 pm



Room No. SC 15



Dr. Xavier Joseph  
( Vice Principal, Christ college )





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

DEPARTMENT OF PHYSICS(UNAIDED)  
CERTIFICATE COURSE : BASICS OF BIOMEDICAL PHYSICS

SL NO	NAME OF STUDENT	SIGNATURE
1	ABSAL K A	
2	AISWARYA BALU	
3	ALEN C P	
4	ALEX ANTONY K A	
5	AMAL FATHIMA K S	
6	ANAMIKA C V	
7	ANJANA P J	
8	ANJANA V S	
9	ANUGRAHA RAJITH	
10	ASHVIN P S	
11	ASWATHY KRISHNA P R	
12	ASWIN KRISHNA V U	
13	BHAVYA P V	
14	FATHIMATHUL THAMANNAH.T.M	
15	DEVANANDA JAYADEEP	
16	HARI KRISHNAN V S	
17	HAYA THAJ	
18	INDRAJ RAJAN	
19	JAMES ANTONY	
20	KRISHNA DEVI RAJU	
21	KRISHNAVENI K V	
22	MEGHANATH C S	
23	MILAN S	
24	NANDHAKRISHNAN P S	
25	NAVANEETH V S	
26	NIRANJAN T R	
27	PRITHVI SREE MENON P	
28	SABARINATH K B	
29	SANJANA M	
30	THEERTHA K R	
31	VAISHNAVI RAJESH	



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 7. Certificate course inauguration- 2nd UG

### Program Objectives:

#### Enhanced Knowledge:

- A deeper understanding of fundamental physics concepts, principles, and theories.
- Exposure to advanced topics that may not be covered in a standard curriculum.

#### Practical Skills:

- Hands-on experience with laboratory equipment and techniques.
- Development of experimental and analytical skills.

#### Problem-Solving Abilities:

- Improved ability to apply physics concepts to solve complex problems.
- Enhanced critical thinking and logical reasoning skills.

#### Career Advancement:

- Better preparation for careers in research, academia, or industry.
- Increased qualifications that can make you more skills in physics, which can be added to your resume.

#### Personal Growth:



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Increased confidence in your abilities and knowledge.
- A sense of accomplishment and motivation to pursue further studies or career goals.competitive in the job market.

#### **Preparation for Further Studies:**

- A solid foundation for pursuing higher education, such as a master's or PhD in physics or related fields.
- Readiness for competitive exams like JAM or GATE for entry into prestigious institutions.

#### **Networking Opportunities:**

- Connections with peers, instructors, and professionals in the field of physics.
- Opportunities for collaboration on projects and research.

#### **Certification:**

- An official certificate that validates your knowledge and skills in physics, which can be added to your resume.

#### **Personal Growth:**

- Increased confidence in your abilities and knowledge.
- A sense of accomplishment and motivation to pursue further studies or career goals.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**Program Report:**

Inauguration of the certificate course “Basics Electric and Electronic Equipment Maintenance Course” offered by the Department of Physics(Unaided) to the students of first year physics was held on 9/11/2023 at Room number SC 15. The event began with a prayer. Ms Simmy Jose(Certificate course coordinator)delivered the welcome address and highlighted the importance and objectives of the course. Prof. V P Anto (Head of the Department of Physics(self) delivered the presidential address and also emphasized the significance of acquiring new skills and knowledge in today's competitive world.Following the presidential address, Dr. Vivekanandhan(Coordinator of Self Finance section Christ college), the chief guest for the event, inaugurated the course. He spoke about the relevance of the course to the industry and its potential impact on the participants' careers.The event also included a felicitation by Dr. Shinto K G( IQAC Coordinator), who shared insights and experiences related to the course topics.The inauguration ceremony concluded with a vote of thanks by Alfred Solvin(student representative), who expressed gratitude to all the dignitaries, participants, and organizers for their contributions to making the event a success.Overall, the inauguration ceremony was well-received, setting a positive tone for the course and inspiring the participants to make the most of the learning opportunities ahead.

**Program outcome:**

1. Understanding Course Objectives: Participants gain insight into what the course will cover, including basic principles of electronics, safety protocols, and hands-on maintenance techniques.
2. Skill Development: Attendees learn practical skills that can be applied in real-world scenarios, enhancing their employability in technical fields.



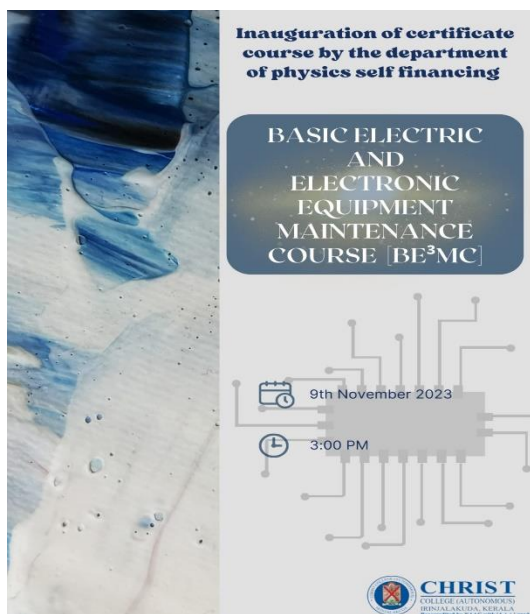


CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

3. Networking Opportunities: Participants meet instructors and fellow learners, fostering connections that can support their professional development.

4. Resource Awareness: Introduction to materials, tools, and resources available for the course, enabling better preparation for upcoming sessions.

5. Motivation and Engagement: An engaging opening can inspire participants, setting a positive tone for the duration of the course.





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

II DC BSc.Physics( SF)



SL.NO	STUDENT NAME	FN
1	ADITHYAN K.R	
2	AKASH PIMY	
3	AKSHAYA P ANIL	<i>AK</i>
4	AKSHITH K S	
5	ALFRED SONVIN	
6	ALIYA DENNY	<i>AD</i>
7	ALTHAFUDHEEN M S	
8	ANAND B	<i>AN</i>
9	ANASWARA DAS M J	
10	ANJANA A B	<i>AN</i>
11	ANN MARY GLEESON	
12	ARUNDHATHY DEVIM	
13	ARYA ANIL A.	<i>AA</i>
14	ATHIRA V M	<i>AV</i>
15	ATHUL P S	<i>AP</i>
16	AVINASH K.A	
17	DEVIMOL M S	
18	DINU DENNY	<i>DD</i>
19	DIYA NOURIN M A	
20	FATHIMATHUL HAAIFA V S	<i>FH</i>
21	GLADIYA DIXON	<i>GD</i>
22	JANEETA ELIZABATH K J	
23	JESSE RAJUMON	<i>JR</i>
24	JOLSNA PRAKASH	
25	KRISHNA SUDHEER	
26	KRISHNAPRASAD K B	<i>KP</i>
27	MARIYA ROSE K J	<i>MR</i>
28	NANDHANA P S	
29	NIBIL V B	<i>NV</i>
30	RIYA SHAJU	<i>RS</i>
31	RIZWAN RAFEEQUE	<i>RR</i>
32	SACHITHANAND C S	
33	SAFA P S	
34	SAM CHIRIYANKANDATH	<i>SC</i>
35	SURYAPRIYA C S	
36	TINTO SHAJU	
37	VAISHNAVI V G	



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 8. Interactive session on “Research Opportunities in Atmospheric Physics”

### Program Objectives:

- Participants got an insight about various opportunities in the field of atmospheric physics
- Students got a chance to interact with a resourceful person

### Program Report:

Department of Physics(unaided), Christ College(Autonomous), Irinjalakuda organized an interactive session on the topic “Research Opportunities in Atmospheric Physics”. The resource person was Ms. Fathima Farheen, Research Scholar, Michigan Technological University, USA. The convenor of the program, Prof. V. P Anto introduced the resource person. MSc students of batch 2022 and 2023 attended the interactive session.

During the interactive session, the resource person shared her experiences and journey in the field of Atmospheric sciences. She shared insights into her educational journey, particularly highlighting her trajectory leading to Michigan University, and discussed various internship opportunities available in this domain. Ms. Fathima provided a comprehensive overview of atmospheric physics during the session, emphasizing its significance and the diverse career paths within the field. she shared invaluable personal experiences, highlighting the practical applications and opportunities within atmospheric physics. The session witnessed the presence of Miss Anjali and Miss Anju, contributing to



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

the atmosphere of knowledge sharing and collaborative learning. Their participation added depth to the discussions and encouraged active engagement among the attendees.

In conclusion, Ms. Fathima's interactive session provided valuable insights into the realm of atmospheric physics. This session not only broadened the participants' horizons but also emphasized the significance of experiential learning and collaborative efforts in the field of atmospheric physics.

Student Co-ordinator Ms. Megna gave feedback of the session after the interaction. She emphasized that these types of open discussions help them to pursue their passion. Research is always a fascinating field and students get more acquainted with various research fields through these kinds of sessions. Staff co-ordinator, Ms. Anju Sebastian delivered the vote of thanks. A group photo was taken after the session.

**Program Outcomes:**

- Participants got an insight about various opportunities in the field of atmospheric physics
- Students got a chance to interact with a resourceful person



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Department of Physics (Unaided) Organizes an Interactive session on



**CHRIST**  
COLLEGE (AUTONOMOUS)  
IRINJALAKUDA, KERALA  
Reaccredited by NAAC with 'A++' grade

## Research Opportunities in Atmospheric Physics



Resource Person

**Ms. Fathima Farheen**  
Research Scholar,  
Michigan Technological University, USA

On **January 4, 2024**  
from **1.00 PM to 2.00 PM**  
at **Room No. SC 09**

Rev. Dr. Jolly Andrews CMI  
Principal

Rev. Dr. Wilson Tharayil CMI  
Director

Prof. V. P. Anto  
HOD & Convenor

Ms. Anju Sebastian  
Ms. Anjali Joby  
Staff Coordinators

Ms. Meghna  
Student Coordinator



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Sl.no	Name of the student	Attendance
1	Lakshmi V S	
2	Afnan	
3	Jerin	
4	Farhan	Farhan
5	Arjun	Arjun
6	Alan	Alan
7	Abhijith	Abhijith
8	Aparna	Aparna
9	Arya	
10	Shreya	Shreya
11	Roshini	

1st M.Sc Physics

Sl.no	Name of the student	Attendance
	Adithya	Adithya
	Vyshnia	Vyshnia
	Nisin	Nisin
	Anjana	Anjana
	Dheera	Dheera
	Nura	Nura
	Karthika	Karthika
	Anushree	Anushree
	Krisha	Krisha
	Sanvya	Sanvya
	Lakshmi Priya	Lakshmi Priya
	Weghna	Weghna





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 9.Program Name: Physics Junction

1. Inauguration of Certificate Course on Electromagnetic Metamaterials and their applications" and Invited Talk

### Program Objectives:

To enlighten the knowledge and expand the interest of students in the field of metamaterials, the Self-financing Department of Physics, Christ College Irinjalakuda(Autonomous), introduced a certificate course on Electromagnetic Metamaterials and their applications for the first year PG students.

### Program Report:

The inaugural ceremony was held on 11th March 2024, 11.00 Am at Room No.SC 06. The inaugural lecture was on the topic “Introduction to Metamaterials” by Dr. Fr. Jolly Andrews, Principal and Research guide in the field of Metamaterials, Christ College (autonomous), Irinjalakuda. The Program started with the blessing of God. Prof. V.P. Anto , Head of the Department Physics(Unaided), delivered the welcome speech. Prof. V.P. Joseph, course co-ordinator gave an outline of the course. The Program was inaugurated by Dr. Jolly Andrews CMI (Principal, Christ college). Fr.Dr. Wilson Tharayil CMI( Director ,Self financing Programs), Dr. T. Vivekanandan (Coordinator, Self financing Programs) delivered the felicitations. Syllabus of the certificate course was handed over by course in charge Ms. Anju Sebastian. Ms. Adithya , student representative delivered the vote of thanks.



<b>CRITERION</b>	<b>II</b>	<b>Teaching-Learning and Evaluation</b>
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

### **Program Outcome**

Participants got an insight into the exciting field of metamaterials





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Certificate course on  
**Electromagnetic Metamaterials  
and Their Applications**

Offered by  
DEPARTMENT OF PHYSICS  
(UNAIDED)  
CHRIST COLLEGE  
(AUTONOMOUS) IRINJALAKUDA

Come...  
*Let's Learn something META...*

**INAUGURATION**  
On  
11 March 2024  
10 AM  
Room No. SC 08



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**Course Highlights :**

- Introduction to Metamaterials
- Physics of Metamaterials
- Electromagnetic Metamaterials
- Metamaterials design, Fabrication & measurement techniques
- Metamaterials Applications
- Current research and future trends
- Hands - on training

Covers fundamental concepts of electromagnetic metamaterials and their applications in various fields.

Contact Us      Course Duration      Course Co-ordinators

physicsself@christcollegeijk.edu.in,  
emmetchrist@gmail.com

30 Hours

Dr. V. P Joseph  
Ms. Anju Sebastian  
Ms. Aswathi P V



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

1st M.Sc Physics

Sl.no	Name of the student	Attendance
	Adithya	<i>[Signature]</i>
	Vyshna	<i>[Signature]</i>
	Nisin	<i>[Signature]</i>
	Anjana	<i>[Signature]</i>
	Dheera	<i>[Signature]</i>
	Nuna	<i>[Signature]</i>
	Karthika	<i>[Signature]</i>
	Anushree	<i>[Signature]</i>
	Krishna	<i>[Signature]</i>
10	Saridya	<i>[Signature]</i>
11	Lakshmi Priya	<i>[Signature]</i>
12	Waguna	<i>[Signature]</i>



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



## Experiential Learning

### 1.Program Name: Inauguration of Leora

#### Program Objectives/Expected outcomes:

- Students gained the ability to work as a team and organize events
- It helped students to build the confidence and courage to deliver ideas to the public.
- Helped to strengthen the relationship between students.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

### Program Report:

The fraternity of physics self students named 'LEORA' was inaugurated on August 3, 2023 by Dr. Nijo Varghese, Asst. Professor, Sacred Heart College, Chalakudy. The programme was held at St. Chavara Multimedia Hall from 1 pm - 4 pm. The program began with a prayer song, followed by the official ceremony. Prof V.P Anto presided over the function. Dr. Fr. Jolly Andrews, our principal delivered the inaugural address. After that, we had the prize distribution for the top scorers of the B.Sc and M.Sc Physics course. The winners of the interzone and dzone competitions from our department were also congratulated during the ceremony. Dr Vivekanandhan T and Dr Sudheer Sebastian felicitated the gathering. It was followed by the official inauguration of the fraternity by revealing the frame. Dr. Nijo Varghese delivered an invited talk on the topic – “Comology- The past, the present and the future”. It was followed by cultural programs and games organized by the students of our department. The ceremony came to a close by 4 pm with the national anthem.

### Program attained Outcome:

- Students gained the ability to demonstrate the skills necessary to develop and present a PowerPoint presentation in a professional manner.
- It helped students to build the confidence and courage to deliver ideas to the public.
- Helped to strengthen the relationship between students.



**CHRIST**  
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IRINJALAKUDA, KERALA

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CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Sl. No.	Name of the participant	Department	Designation	Course/Batch	Signature
1	Godwin vs	Bvoc-IT	Student	Bvoc-IT 2nd year self financing	<i>[Signature]</i>
2	Catherine Darily Varghese	Bvoc IT	Student	Bvoc IT, 2nd year	<i>[Signature]</i>
3	Jolina prakash	Physics unaided	Student	1 Bsc physics self financing	<i>[Signature]</i>
4	Sanath K.D	Bvoc IT	Student	2nd semester Bvoc IT	<i>[Signature]</i>
5	Ashik shibu	BVoc. IT	Student	Bvoc IT (self financing)	<i>[Signature]</i>
6	ARUNDHATHY DEVI M	PHYSICS	Student	BSc Physics (self financing)	<i>[Signature]</i>
7	Lakshmi V S	Physics (self finance)	Student	1 MSc Physics (self financing)	<i>[Signature]</i>
8	Fathimathul Haafa V S	Bsc physics unaided	Student	1 BSc physics self financing	<i>[Signature]</i>
9	Paulmon T Jaison	Physics	Student	II Msc Physics(Aided)	<i>[Signature]</i>
10	Arya sunil	Physics	Student	1 Msc physics self financing	<i>[Signature]</i>

42	Dinu Denny	Physics self	Student	Self financing	<i>[Signature]</i>
43	Aleena A S	Physics (aided)	Student	1 MSc Physics Aided	<i>[Signature]</i>
44	Akhila Raphael	Physics	Student	1 Msc Physics	<i>[Signature]</i>
45	Avinash k A	Physics	Student	Bsc Physics self financing	<i>[Signature]</i>
46	JESSE RAJUMON	BSc physics	Student	1 BSc physics (Self financing)	<i>[Signature]</i>
47	Gladiya Dixon	Bsc physics (self)	Student	Bsc physics self financing	<i>[Signature]</i>
48	Milan Roy	IT	Student	2 Bvoc. IT	<i>[Signature]</i>
49	Alfred Somvin	Physics Unaided	Student	1 Bsc Physics Unaided	<i>[Signature]</i>
50	ATHIRA V M	Bsc physics(self)	Student	1 BSc physics self financing	<i>[Signature]</i>
51	Arya Anil A.	Bsc physics self	Student	Bsc physics self financing	<i>[Signature]</i>
52	Riya Shaju	Bsc physics self	Student	1 bsc physics self	<i>[Signature]</i>
53	Suryapriya Cs	Physics	Student	Bsc physics self financing	<i>[Signature]</i>
54	Nandhana ps	Bcs physics self	Student	1 year BCS physics self financing	<i>[Signature]</i>
55	Alan Antony K. J	Msc. Physics	Student	1 Msc Physics (self)	<i>[Signature]</i>
56	SIYA SANTHOSH	BSC PHYSICS	Student	2 BSC PHYSICS (SELF FINANCING)	<i>[Signature]</i>
57	Chackochan Joji	Physics (unaided)	Student	2 Bsc. Physics (self financing)	<i>[Signature]</i>





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



**2.Program Name: Energy Survey-Think.Act.Save**

**Program Objectives:**



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

1. Identifying Energy Usage: Determine how energy is being used within a system or building, including electricity, heating, cooling, and other energy sources.
2. Energy Efficiency Assessment: Evaluate the efficiency of energy-consuming systems and equipment to identify areas for improvement.
3. Cost Savings: Identify opportunities to reduce energy consumption and costs through energy efficiency measures.
4. Environmental Impact: Assess the environmental impact of energy usage, including greenhouse gas emissions and other pollutants.
5. Renewable Energy Potential: Identify opportunities for integrating renewable energy sources to reduce reliance on fossil fuels.

**Program Report:**

An energy survey was organized by the department of physics self in association with ward 19. which was conducted among the residents of South Bazar, Ward19 Irinjalakuda municipality. The aim of our survey was to raise awareness about energy conservation in daily life among the people as well as the students.

The official inauguration of the Program was done by Ms.Feni Ebin (Councilor of ward 19) on 24th January 2024. Our second-year students actively participated in the survey. They split into 6 small groups and collected data from South Bazar. It provided an experiential learning for the students.

**Program attained Outcome:**



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

1. Energy Savings: Implementation of energy efficiency measures identified during the survey can lead to reduced energy consumption and cost savings over time.
2. Improved Energy Performance: By identifying and addressing inefficiencies, the energy survey can lead to improved overall energy performance of the system, building, or organization.
3. Environmental Impact Reduction: Reduced energy consumption and increased use of renewable energy sources can lead to a reduction in greenhouse gas emissions and other environmental impacts.
4. Compliance with Regulations: Ensure compliance with energy efficiency standards and regulations, avoiding penalties and improving overall operational compliance.
5. Risk Mitigation: Identify and mitigate risks related to energy supply and consumption, such as supply disruptions or price volatility.
6. Enhanced Sustainability: Contribute to organizational or regional sustainability goals by reducing energy consumption and environmental impact.
7. Improved Operational Efficiency: Energy surveys can lead to improved operational efficiency, as energy-efficient systems often require less maintenance and operate more reliably.
8. Employee and Stakeholder Engagement: Increase awareness and engagement among employees and stakeholders regarding energy conservation practices and the importance of energy efficiency.
9. Data-driven Decision Making: Provide data and insights for informed decision-making regarding energy planning, management, and investment



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CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:


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Affiliated to the University of Calicut and Re-accredited by NAAC (Grade A++) & SAAC (Grade A+)  
[www.christcollegeijk.edu.in](http://www.christcollegeijk.edu.in)

2nd year students of BSc Physics (Self finance) batch  
2022 - 2025 of Christ College Irinjalakuda  
Presents

# Think. Act. Save.

Energy conservation survey in association with  
ward 19 of Irinjalakuda Municipality.



**TIME** : 9.30 AM  
**DATE** : 24 February 2024, Saturday.  
**VENUE** : South bazaar, Irinjalakuda



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CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## II DC BSc.Physics( SF)

SL NO	STUDENT NAME	FN
1	ADITHYAN K R	
2	AKASH PIMY	
3	AKSHAYA P ANIL	
4	AKSHITH K S	
5	ALFRED SONVIN	
6	ALIYA DENNY	
7	ALTHAFUDHEEN M S	
8	ANAND B	
9	ANASWARA DAS M J	
10	ANJANA A B	
11	ANN MARY GLEESON	
12	ARUNDHATHY DEVI M	
13	ARYA ANIL A.	
14	ATHIRA V M	
15	ATHUL P S	
16	AVINASH K A	
17	DEVIMOL M S	
18	DINU DENNY	
19	DIYA NOURIN M A	
20	FATHIMATHUL HAAIFA V S	
21	GLADIYA DIXON	
22	JANEETA ELIZABATH K J	
23	JESSE RAJUMON	
24	JOLSNA PRAKASH	
25	KRISHNA SUDHEER	
26	KRISHNAPRASAD K B	
27	MARIYA ROSE K J	
28	NANDHANA P S	
29	NIBIL V B	
30	RIYA SHAJU	
31	RIZWAN RAFEEQUE	
32	SACHITHANAND C S	
33	SAFA P S	
34	SAM CHIRIYANKANDATH	
35	SURYAPRIYA C S	
36	TINTO SHAJU	
37	VAISHNAVI V G	



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



### 3.Program Name: Physics Laboratory sessions

#### Program Objectives:

- Apply and illustrate the concepts of properties of matter through experiments



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Apply and illustrate the concepts of electricity and magnetism through experiments
- Apply and illustrate the concepts of optics through experiments
- Apply and illustrate the concepts of spectroscopy through experiments
- Design and construct electronic circuits using diodes and transistors
- Design and construct electronic circuits using OPAMP
- Design and construct electronic circuits using IC -555
- Design and construct digital electronics circuits

#### **Program Report:**

Practicals of third year BSc Physics students, both electronics and general experiments conducted successfully and all the students submitted the practical record. At the end of the semester practical examinations were conducted.

#### **Program attained Outcome:**

- Understanding of Concepts: Through hands-on experiments, students gain a deeper understanding of physics concepts such as electricity, magnetism, optics, and mechanics.
- Experimental Skills: Students develop skills in setting up experiments, using various instruments like oscilloscopes, multimeters, and optical benches, and analyzing data.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Problem-Solving: Practical work often involves troubleshooting and solving problems that arise during experiments, improving students' problem-solving abilities.
- Critical Thinking: Students learn to critically evaluate experimental results, identify sources of error, and improve experimental techniques.
- Teamwork: Many experiments require students to work in teams, enhancing their teamwork and communication skills.
- Laboratory Safety: Students become familiar with laboratory safety protocols and practices, ensuring they can conduct experiments safely.
- Report Writing: Students learn to write scientific reports, including stating objectives, describing methods, presenting data, and drawing conclusions, improving their scientific communication skills.
- Application of Theory: Practical work helps students see the application of theoretical concepts in real-world situations, reinforcing their understanding of physics principles.





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KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**CHRIST COLLEGE**

Department:PHYSICS SF Batch:BSC PHY SF 2022 Semester:S4  
Subject Wise Attendance Percentage Report: 01-11-2023 to 13-07-2024

SI No.	Reg No	Name of student	CC20UPHY4B05(P) (Physics Practical I)		Aggregate
			ATT(TOT)	%	
1	CCAWSPH054	ADITHYAN K. R.	22(23)	95.65	95.65%
2	CCAWSPH051	AKASH PIMY	19(23)	82.61	82.61%
3	CCAWSPH049	AKSHAYA P ANIL	23(23)	100	100%
4	CCAWSPH045	AKSHITH K S	22(23)	95.65	95.65%
5	CCAWSPH053	ALFRED SONVIN	21(23)	91.3	91.3%
6	CCAWSPH058	ALIYA DENNY	22(23)	95.65	95.65%
7	CCAWSPH070	ALTHAFUDHEEN M S	23(23)	100	100%
8	CCAWSPH072	ANAND . B	21(23)	91.3	91.3%
9	CCAWSPH067	ANASWARA DAS M J	21(23)	91.3	91.3%
10	CCAWSPH042	ANJANA A B	21(23)	91.3	91.3%
11	CCAWSPH047	ANN MARY GLEESON	21(23)	91.3	91.3%
12	CCAWSPH050	ARUNDHATHY DEVI M	22(23)	95.65	95.65%
13	CCAWSPH063	ARYA ANIL A.	19(23)	82.61	82.61%
14	CCAWSPH069	ATHIRA V M	22(23)	95.65	95.65%
15	CCAWSPH048	ATHUL P S	23(23)	100	100%
16	CCAWSPH064	AVINASH K A	21(23)	91.3	91.3%
17	CCAWSPH060	DEVIMOL M S	21(23)	91.3	91.3%
18	CCAWSPH052	DINU DENNY	20(23)	86.96	86.96%
19	CCAWSPH074	DIYA NOURIN M A	22(23)	95.65	95.65%
20	CCAWSPH065	FATHIMATHUL HAAIFA V S	23(23)	100	100%
21	CCAWSPH059	GLADIYA DIXON	23(23)	100	100%
22	CCAWSPH066	JANEETA ELIZABATH K J	21(23)	91.3	91.3%
23	CCAWSPH040	JESSE RAJUMON	22(23)	95.65	95.65%
24	CCAWSPH043	JOLSNA PRAKASH	21(23)	91.3	91.3%
25	CCAWSPH039	KRISHNA SUDHEER	23(23)	100	100%
26	CCAWSPH073	KRISHNAPRASAD K B	21(23)	91.3	91.3%
27	CCAWSPH071	MARIYA ROSE K J	22(23)	95.65	95.65%
28	CCAWSPH057	NANDHANA P S	22(23)	95.65	95.65%
29	CCAWSPH076	NIBIL V B	23(23)	100	100%
30	CCAWSPH041	RIYA SHAJU	23(23)	100	100%
31	CCAWSPH044	RIZWAN RAFEEQUE	20(23)	86.96	86.96%



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**CHRIST COLLEGE**

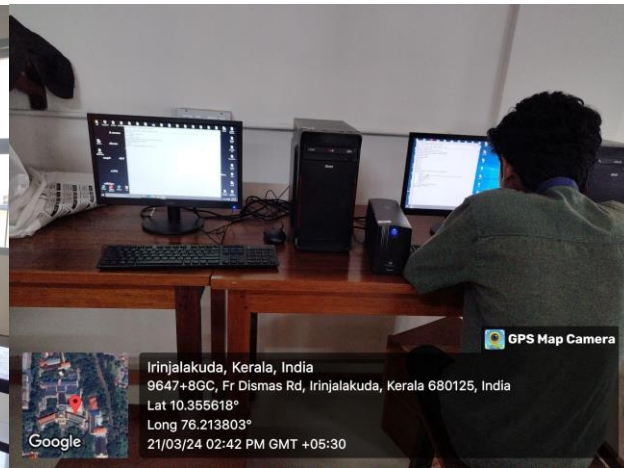
Department:PHYSICS SF Batch:BSC PHY SF 2022 Semester:S4  
Subject Wise Attendance Percentage Report: 01-11-2023 to 13-07-2024

Sl No.	Reg No	Name of student	CC20UPHY4B05(P) (Physics Practical I)		Aggregate
			AIT(TOT)	%	
32	CAWSPH068	SACHITHANAND C S	21(23)	91.3	91.3%
33	CAWSPH046	SAFA P S	23(23)	100	100%
34	CAWSPH056	SAM CHIRIYANKANDATH	18(23)	78.26	78.26%
35	CAWSPH062	SURYAPRIYA C S	22(23)	95.65	95.65%
36	CAWSPH055	TINTO SHAJU	17(23)	73.91	73.91%
37	CAWSPH061	VAISHNAVIV G	22(23)	95.65	95.65%



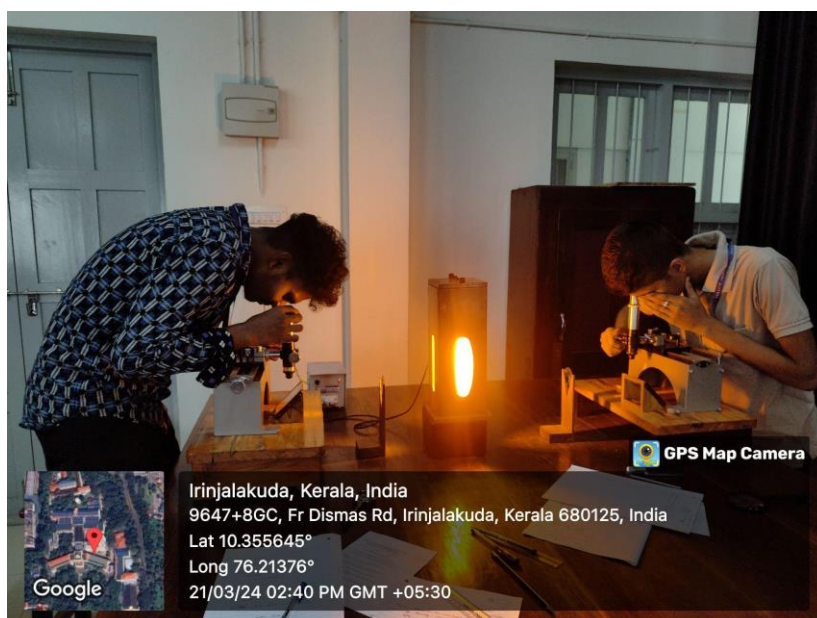


CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



#### 4.Program Name:Chandrayan Seminar

##### Program Objectives:

Students can acquire a variety of valuable skills and knowledge through seminar presentations. Here are some of the key benefits:



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

1. Research Skills: Seminar presentations often require students to conduct research on a specific topic, helping them develop skills in information gathering, critical analysis, and synthesis of information.
2. Presentation Skills: Students gain experience in public speaking and presenting information in a clear, organized, and engaging manner. This includes skills such as structuring a presentation, creating visual aids, and effectively delivering content to an audience.
3. Communication Skills: Presenting seminars allows students to improve their verbal communication skills, including articulating ideas, responding to questions, and engaging with an audience. It also helps them develop written communication skills through the preparation of presentation materials.
4. Critical Thinking: Students learn to critically evaluate information, arguments, and evidence, both in their own research and in the presentations of their peers. This fosters a deeper understanding of complex issues and encourages independent thinking.
5. Confidence: Presenting in front of an audience can boost students' confidence and self-esteem, especially as they receive feedback and validation for their efforts. Over time, they become more comfortable speaking in public and expressing their ideas.
6. Time Management: Planning and preparing for a seminar presentation require students to manage their time effectively, setting deadlines for research, content creation, and practice sessions.
7. Collaboration: In some cases, students may work in teams to prepare and deliver seminar presentations. This promotes collaboration skills, including the ability to delegate tasks, communicate effectively within a group, and resolve conflicts.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

8. Feedback and Adaptation: Presenting seminars offers students the opportunity to receive feedback from peers and instructors, allowing them to identify areas for improvement and make adjustments to their presentation style or content.
9. Subject Knowledge: Through researching and presenting on a specific topic, students deepen their understanding of the subject matter and become more knowledgeable in their chosen field of study.
10. Professional Development: Seminar presentations help students develop skills that are highly valued in professional settings, such as critical thinking, communication, and presentation abilities. These skills are transferable to various careers and academic pursuits.

### Program Report

The first programme under Leora, the students fraternity of physics unaided, took place in the Saint. Chavara Multimedia Hall on August 16, 2023, at 3.00. It was a seminar based on the topic 'CHANDRAYAN' conducted by the 1st DC Msc Physics (self-financing) crew. It was organised under the leadership of Ms. Anjali Joby. The programme started with the welcome speech given by 1st year MSC student Ms. Anjana A, followed by the presidential address. It was addressed by the head of the department of physics, Prof. V. P. Anto.

Space exploration has contributed to many diverse aspects of everyday life. Achieving ambitious future exploration goals will further expand the economic relevance of space. It was explained that space exploration will continue to be an essential driver for opening up new domains in science



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

and technology, triggering other sectors to partner with the space sector for joint research and development. The session was later felicitated by Ms. Anjali Joby, in which she talked about the upcoming goals of Leora.

The seminar began at almost 3.10 p.m. by Ms. Karthika and was later taken over by Ms. Megna Mariya, Ms. Anushree, and Ms. Dheera. The whole seminar included a talk about Chandrayan 1, Chandrayan 2, Chandrayan 3, and also about the future goals. In the vast space of our universe, where mythology and science come together so often, Chandrayaan-3 shines brightly as a symbol of India's astral hope and exploration. It shows India's strong determination to uncover the moon's mysteries. With careful planning and robust designs, Chandrayaan-3 gets us closer to landing on the moon and discovering its hidden secrets.

Later, an interesting quiz competition was held for the students, in which all students had excellent participation. Arjun Hari and Farhan AF from 2nd DC MSc Physics secured first place, Jithukrishna M and Sujitha V from 3rd DC Bsc Physics secured second place, and Abhijith C Preej and Aparna K S from 2nd DC MSc Physics secured third place. There was tight competition among the students in the final round. The first-place winners were awarded Rs. 301, and the second-place winners were awarded Rs. 201 by the HOD, Prof. V. P. Anto. The session was ended by a vote of thanks addressed by Ms. Adithya M J., 1st DC Msc Physics student, and Ms. Simmy Jose, assistant professor of the physics department. The seminar was very informative and provided the participants with enormous knowledge on various aspects of space exploration, the recent advancements in space, and related technology. They loved the event as a whole.

### Program Outcome:



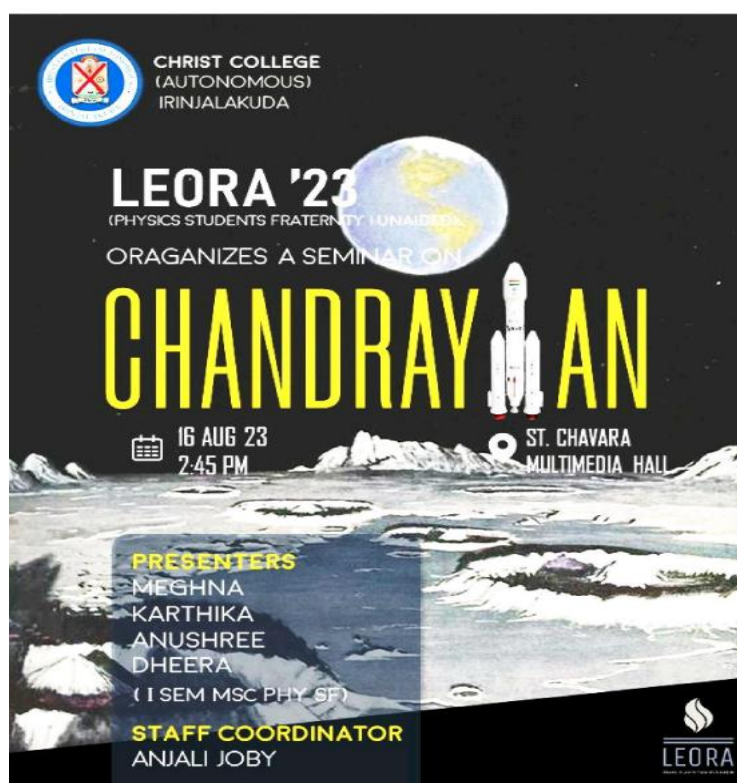


<b>CRITERION</b>	<b>II</b>	<b>Teaching-Learning and Evaluation</b>
KEY INDICATOR	2.3	<b>Teaching - Learning Process</b>
METRIC	2.3.1	<b>Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:</b>

Overall, seminar presentations serve as a valuable learning experience that prepares students for academic, professional, and personal success.



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METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

I DC BSc PHYSICS (SF)

II DC BSc.Physics( SF)

SL.NO	STUDENT NAME	FN
1	ADITHYAN K R	
2	AKASH PIMY	
3	AKSHAYA P ANIL	
4	AKSHITH K S	
5	ALFRED SONVIN	
6	ALIYA DENNY	
7	ALTHAFUDHEEN M S	
8	ANAND B	
9	ANASWARA DAS M J	
10	ANJANA A B	
11	ANN MARY GLEESON	
12	ARUNDHATHY DEVI M	
13	ARYA ANIL A.	
14	ATHIRA V M	
15	ATHUL P S	
16	AVINASH K A	
17	DEVIMOL M S	
18	DINU DENNY	
19	DIYA NOURIN M A	
20	FATHIMATHUL HAAIFA V S	
21	GLADIYA DIXON	
22	JANEETA ELIZABATH K J	
23	JESSE RAJUMON	
24	JOLSNA PRAKASH	
25	KRISHNA SUDHEER	
26	KRISHNAPRASAD K B	
27	MARIYA ROSE K J	
28	NANDHANA P S	
29	NIBIL V B	
30	RIYA SHAJU	
31	RIZWAN RAFEEQUE	
32	SACHITHANAND C S	
33	SAFA P S	
34	SAM CHIRIYANKANDATH	
35	SURYAPRIYA C S	
36	TINTO SHAJU	
37	VAISHNAVI V G	

Sl. No.	Name of the Student	FN	AN
1	ABSAL K A		
2	AISWARYA BALU		
3	ALEN C P		
4	ALEX ANTONY K A		
5	ANJANA P J		
6	ANJANA V S		
7	ANUGRAHA RAJITH		
8	ASHVIN P S		
9	ASWATHY KRISHNA P R		
10	ASWIN KRISHNA V U		
11	BHAVYA P V		
12	HAYA THAJ		
13	JAMES ANTONY		
14	KRISHNA DEVI RAJU		
15	MEGHANATH C S		
16	MILAN S		
17	NANDHAKRISHNAN P S		
18	NAVANEETH V S		
19	PRANAV KRISHNAN M P		
20	PRITHVI SREE MENON P		
21	SABARINATH K B		
22	THEERTHA K R		
23	VAISHNAVI RAJESH		



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Sl.no	Name of the student	Attendance
1	Lakshmi V S	
2	Afnan	
3	Jerin	
4	Farhan	<i>Farhan</i>
5	Arjun	<i>Arjun</i>
6	Alan	<i>Alan</i>
7	Abhijith	<i>Abhijith</i>
8	Aparna	<i>Aparna</i>
9	Arya	
10	Shreya	<i>Shreya</i>
11	Roshini	

1st M.Sc Physics		
Sl.no	Name of the student	Attendance
	Adithya	<i>Adithya</i>
	Vyshna	<i>Vyshna</i>
	Nisin	<i>Nisin</i>
	Anjana	<i>Anjana</i>
	Dheera	<i>Dheera</i>
	Nuna	<i>Nuna</i>
	Karthika	<i>Karthika</i>
	Anushree	<i>Anushree</i>
	Krishna	<i>Krishna</i>
	Sanidya	<i>Sanidya</i>
	Lakshmi Priya	<i>Lakshmi Priya</i>
	Waghrna	<i>Waghrna</i>



**CHRIST**  
COLLEGE (AUTONOMOUS)  
IRINJALAKUDA, KERALA

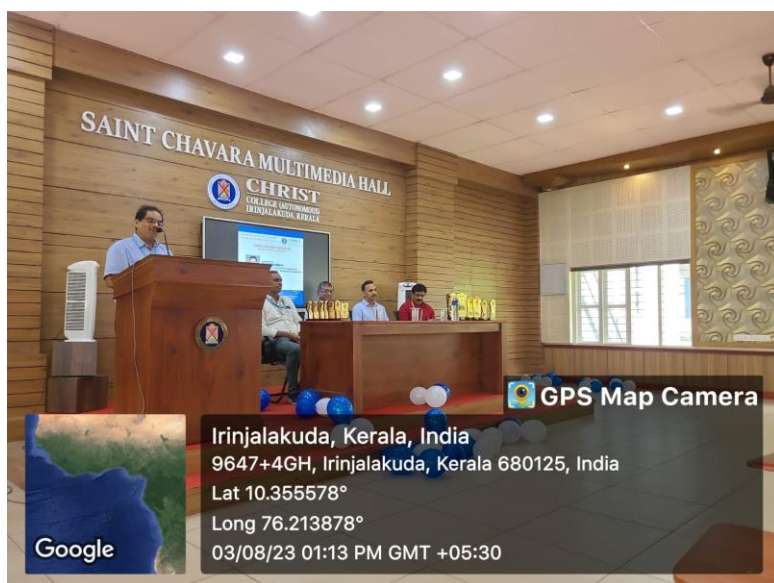
P.O. Irinjalakuda North, 680125

Office : 0480 2825258

Email : [office@christcollegeijk.edu.in](mailto:office@christcollegeijk.edu.in)

<http://christcollegeijk.edu.in>

CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



## 5. General Seminar presentations:

### Program Objectives:

Students can acquire a variety of valuable skills and knowledge through seminar presentations. Here are some of the key benefits:

- **Research Skills:** Seminar presentations often require students to conduct research on a specific topic, helping them develop skills in information gathering, critical analysis, and synthesis of information.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Presentation Skills: Students gain experience in public speaking and presenting information in a clear, organized, and engaging manner. This includes skills such as structuring a presentation, creating visual aids, and effectively delivering content to an audience.
- Communication Skills: Presenting seminars allows students to improve their verbal communication skills, including articulating ideas, responding to questions, and engaging with an audience. It also helps them develop written communication skills through the preparation of presentation materials.
- Critical Thinking: Students learn to critically evaluate information, arguments, and evidence, both in their own research and in the presentations of their peers. This fosters a deeper understanding of complex issues and encourages independent thinking.
- Confidence: Presenting in front of an audience can boost students' confidence and self-esteem, especially as they receive feedback and validation for their efforts. Over time, they become more comfortable speaking in public and expressing their ideas.
- Time Management: Planning and preparing for a seminar presentation require students to manage their time effectively, setting deadlines for research, content creation, and practice sessions.
- Collaboration: In some cases, students may work in teams to prepare and deliver seminar presentations. This promotes collaboration skills, including the ability to delegate tasks, communicate effectively within a group, and resolve conflicts.
- Feedback and Adaptation: Presenting seminars offers students the opportunity to receive feedback from peers and instructors, allowing them to identify areas for improvement and make adjustments to their presentation style or content.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Subject Knowledge: Through researching and presenting on a specific topic, students deepen their understanding of the subject matter and become more knowledgeable in their chosen field of study.
- Professional Development: Seminar presentations help students develop skills that are highly valued in professional settings, such as critical thinking, communication, and presentation abilities. These skills are transferable to various careers and academic pursuits.

### Program Report:

A general seminar presentation competition was organized on September 13, 2022 at 9:30 am at M.Sc. Physics computational lab. Each student presented a seminar on various relevant and novel topics in physics. The time duration allotted for each student was 20 minutes. An interaction with the audience followed the presentation.

### Program Outcome:

Overall, seminar presentations serve as a valuable learning experience that prepares students for academic, professional, and personal success.





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

# SEMINAR PRESENTATION CONTEST

MSc Physics (unaided)  
2022-24 Batch

 **MONDAY**  
11 September 2023

 **TIME**  
9.00 Am - 1.00 Pm



Organized by  
**Physics Department(unaided)**  
**Christ College(Autonomous), Irinjalakuda**  
Staff Co-ordinator: Ms. Anju Sebastian



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



1st M.Sc Physics

Sl. no	Name of the student	Attendance
1	Adithya	<i>[Signature]</i>
2	Vishnu	<i>[Signature]</i>
3	Nisim	<i>[Signature]</i>
4	Anjana	<i>[Signature]</i>
5	Dheera	<i>[Signature]</i>
6	Nuha	<i>[Signature]</i>
7	Karthika	<i>[Signature]</i>
8	Anushree	<i>[Signature]</i>
9	Krishna	<i>[Signature]</i>
10	Sarvija	<i>[Signature]</i>
11	Lakshmi Phya	<i>[Signature]</i>
12	Wegma	<i>[Signature]</i>

## 6.Program Name:Pratheekshonam 2.0

### Program Objectives:

#### Cultural Enrichment:

To provide an opportunity for students to immerse themselves in and celebrate the rich cultural traditions of Kerala, particularly focusing on the Onam festival.

#### Community Engagement:



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

To strengthen ties between college students and the local community, specifically Pradeeksha Bhavan School, fostering a spirit of collaboration and mutual respect.

**Skill Development:**

To allow students to develop and showcase their organizational, creative, and leadership skills through the planning and execution of the event.

**Educational Experience:**

To offer a practical experience in event management and cultural organization for the BSc Physics students, complementing their academic learning with real-world application.

**Program Report:**

Pradheekshonam was conducted by 2nd and 3rd year students of physics self on 22nd August. Fr. Jolly Andrews (Principal Christ college) inaugurated the function. Pradheekshonam 2.0 achieved its objectives by successfully celebrating Onam while fostering community engagement and student development. The event highlighted the significance of cultural festivals and provided valuable experiences for all involved. The collaboration between Christ College students and Pradeeksha Bhavan School exemplifies a successful integration of educational and cultural activities.

**Program Outcome:**

**Development of Skills:**

The organizing students honed their skills in event management, teamwork, and Enhanced Cultural



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**Understanding:**

The event successfully introduced and deepened the understanding of Onam traditions among students and the Pradeeksha Bhavan School community. The rich cultural experience.

**Community Building:**

leadership. Tasks such as coordinating performances, managing decorations, and organizing traditional games provided valuable hands-on experience.

**Successful Event Execution:**

The event was executed smoothly, with all planned activities successfully carried out. The cultural performances, traditional Onam Sadhya, and various games were well-received, contributing to a festive and enjoyable atmosphere.

**Positive Feedback:**

The feedback from participants and attendees was overwhelmingly positive, highlighting the effectiveness of the students' efforts in creating an engaging and educational celebration. The appreciation from the Pradeeksha Bhavan School community underscored the event's success.

**Cultural Exchange:**

The event served as a platform for cultural exchange, allowing students to share and experience Onam traditions in a school setting, thereby enriching their cultural perspective.



# CHRIST

COLLEGE (AUTONOMOUS)  
IRINJALAKUDA, KERALA

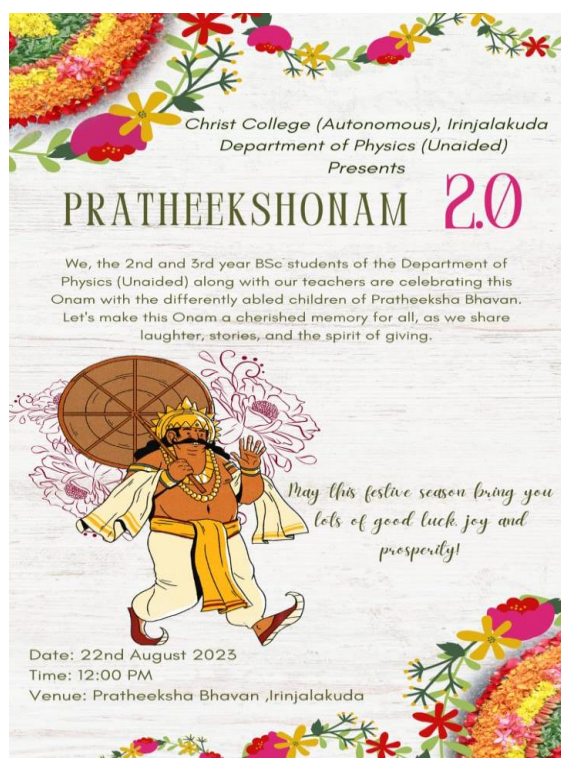
P.O. Irinjalakuda North, 680125

Office : 0480 2825258

Email : [office@christcollegeijk.edu.in](mailto:office@christcollegeijk.edu.in)

<http://christcollegeijk.edu.in>

CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



## 7.Program Name: OPEN HOUSE VISIT TO CUSAT

### Program Objectives:

- Exposure to Advanced Lab Equipment: Provide students with exposure to advanced laboratory equipment and facilities available at CUSAT, enhancing their practical knowledge and skills.
- Hands-on Experience: Enable students to gain hands-on experience with experiments and procedures relevant to their physics curriculum, deepening their understanding of theoretical concepts.
- Interaction with Faculty and Researchers: Facilitate interaction between students and faculty members or researchers at CUSAT, allowing students to gain insights into ongoing research and career opportunities in physics.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Application of Physics Concepts: Demonstrate the application of physics concepts in real-world scenarios through experiments and demonstrations conducted at CUSAT labs.
- Promotion of Scientific Temper: Encourage students to develop a scientific temper by observing and analyzing experimental outcomes and drawing conclusions based on evidence.
- Inspiration for Research and Innovation: Inspire students to pursue research and innovation in the field of physics by showcasing cutting-edge research and projects at CUSAT.
- Networking Opportunities: Provide students with networking opportunities with peers and professionals in the field of physics, fostering a sense of community and collaboration.
- Career Guidance: Offer guidance on potential career paths in physics and related fields, including higher studies and job opportunities.
- Skill Development: Develop students' practical skills, such as data analysis, experimental design, and scientific communication, through participation in lab activities at CUSAT.
- Enhancement of Academic Performance: Support students in enhancing their academic performance by reinforcing theoretical concepts through practical application in a laboratory setting.

### Program Report

The open house visit at Cochin University of Science and Technology (CUSAT) on 24th January 2023 provided an exceptional opportunity for students to explore the diverse range of laboratories and research facilities available at the university. This immersive experience showcased the





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

cutting-edge research, state-of-the-art equipment, and innovative projects undertaken by faculty and students across various disciplines.

### Program Outcome:

Visiting laboratories can yield various outcomes depending on the purpose and context of the visit. Here are some potential outcomes:

- Learning Experience: Visitors can gain valuable insights into scientific processes, techniques, and equipment used in the laboratory. This firsthand experience can deepen understanding and knowledge in specific fields of study.
- Networking Opportunities: Visiting laboratories provides opportunities to meet and interact with researchers, scientists, and professionals in the field. Networking can lead to collaborations, partnerships, and mentorship opportunities.
- Inspiration and Innovation: Observing cutting-edge research and technology in action can inspire new ideas and innovations. Visitors may come away with fresh perspectives or solutions to their own research challenges.
- Skill Development: Hands-on experiences or demonstrations in laboratories can help visitors develop practical skills and techniques applicable to their own work or studies.
- Validation and Verification: For stakeholders such as investors, policymakers, or regulators, visiting laboratories can provide assurance about the quality and integrity of research being conducted.
- Educational Outreach: Laboratory visits can serve as educational outreach activities, engaging students, educators, and the public in science and research. They can help



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

demystify complex scientific concepts and inspire interest in STEM (Science, Technology, Engineering, and Mathematics) fields.

- Quality Assurance and Compliance: Visits by regulatory bodies or accreditation agencies can ensure that laboratories adhere to relevant standards, protocols, and safety measures.
- Collaboration Opportunities: Laboratories may use visits as opportunities to explore potential collaborations with other research institutions, industry partners, or government agencies.
- Problem Solving: Visitors may have specific challenges or questions that they hope to address during their laboratory visit. Interaction with experts in the field can facilitate problem-solving and provide valuable insights.
- Feedback and Improvement: Laboratories can gather feedback from visitors to identify areas for improvement or enhancement in their research, operations, or facilities.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



Open - House Visit - CUSAT

1.	ANAN	<i>[Signature]</i>	Msc Physics SF
2.	LAKSHMI V.S	<i>[Signature]</i>	"
3.	APARNA K.S	<i>[Signature]</i>	"
4.	ROSHINI JAYARAJ	<i>[Signature]</i>	"
5.	AARYA SUNIL	<i>[Signature]</i>	"
6.	SHEEVA JAYAPRAKASH	<i>[Signature]</i>	"
7.	ABHIJITH C.PREGJ	<i>[Signature]</i>	"
8.	ALAN K. ANTONY K.J	<i>[Signature]</i>	"
9.	ARJUN HARI .C	<i>[Signature]</i>	"
10.	FARHAN	<i>[Signature]</i>	"
11.	JERIN P.J	<i>[Signature]</i>	"
12.	Anja Sebastian	<i>[Signature]</i>	(Team - in - charge ).



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 8. Program Name: INTERNSHIP AT CALICUT INTERNATIONAL AIRPORT:

### Program Objectives

- Understanding Airport Operations: Gain a comprehensive understanding of the various operations and departments at an international airport, including airside and landside operations, terminal management, and security protocols.
- Learning Airport Management Practices: Learn about airport management practices, including airport planning, scheduling, and resource management, to understand how airports function efficiently.
- Observing Aviation Safety and Security Procedures: Observe and learn about aviation safety and security procedures followed at an international airport to ensure the safety of passengers and aircraft.
- Hands-on Experience in Airport Services: Gain hands-on experience in providing airport services such as passenger handling, baggage handling, and aircraft ground handling, to understand the operational aspects of airport services.
- Exposure to Airport Technology: Gain exposure to the latest technologies used in airport operations, such as airport management software, security systems, and passenger information systems.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Developing Communication and Interpersonal Skills: Improve communication and interpersonal skills by interacting with airport staff, passengers, and other stakeholders in a professional environment.
- Understanding Airport Regulations and Compliance: Learn about airport regulations and compliance requirements, including international aviation standards, to ensure smooth and legal airport operations.
- Networking Opportunities: Build professional relationships and network with industry professionals in the aviation sector, which may lead to future career opportunities.
- Enhancing Problem-solving Skills: Develop problem-solving skills by addressing real-world challenges and issues faced in airport operations, such as flight delays, passenger emergencies, and security threats.
- Gaining Industry Insights: Gain insights into the aviation industry, including trends, challenges, and opportunities, to understand the broader context of airport operations.

### Program Report

Four students from the batch, namely Ms, Sahasra S, Aparna K, Angel Mariya L and Havva Hyrath K underwent internship at calicut international airport in the month of June 2023. They were interns at the ATC and CNS departments of the institution.

### Program Outcome:



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Internships offer numerous advantages for students and recent graduates, providing valuable opportunities for personal, academic, and professional development. Some key advantages include:

**Hands-on Experience:** Internships offer practical, real-world experience that complements academic learning. They allow interns to apply theoretical knowledge to actual work situations, gaining valuable hands-on experience in their chosen field.

**Skill Development:** Internships provide opportunities to develop and enhance a wide range of skills, including technical skills specific to the industry or job role, as well as transferable skills such as communication, teamwork, problem-solving, and time management.

**Industry Exposure:** Internships offer exposure to the professional environment and industry practices. Interns gain insight into the day-to-day operations of organizations, industry trends, and best practices, helping them understand the broader context of their field.

**Networking Opportunities:** Internships provide opportunities to network with professionals in the field, including supervisors, colleagues, and industry contacts. Building relationships during an internship can lead to mentorship, future job opportunities, and valuable connections within the industry.

**Resume Enhancement:** Internships enhance resumes by providing relevant work experience, demonstrating initiative, and showcasing skills and accomplishments. Employers value internship experience when considering candidates for entry-level positions, making interns more competitive in the job market.

**Career Exploration:** Internships allow students to explore different career paths and industries, helping them clarify their interests, strengths, and career goals. Interns can gain



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

insight into various roles and organizational cultures, informing their career decisions and professional trajectory.

**Professional Development:** Internships provide opportunities for professional growth and personal development. Interns receive feedback, guidance, and mentorship from experienced professionals, helping them develop professionally and build confidence in their abilities.

**Increased Job Opportunities:** Internships can lead to job offers or referrals for full-time employment upon graduation. Many employers use internships as a recruitment pipeline, hiring interns who have demonstrated their skills, work ethic, and fit within the organization.

**Financial Benefits:** Some internships offer financial compensation, stipends, or benefits such as housing assistance or transportation reimbursement. These financial incentives can help offset educational expenses and living costs during the internship period.

**Personal Fulfillment:** Internships provide opportunities for personal growth, self-discovery, and fulfillment. Engaging in meaningful work, contributing to projects, and overcoming challenges can boost confidence, satisfaction, and a sense of accomplishment.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



## 9. Internships- I MSc and II Bsc students

### Program Objectives:

- Practical Application of Theory:** To provide students with opportunities to apply theoretical concepts learned in the classroom to real-world situations and problems.
- Hands-On Experience:** To gain hands-on experience with advanced scientific instruments and techniques used in research and industry.
- Research Skills Development:** To develop research skills, including data collection, analysis, and interpretation, and to learn how to conduct experiments and simulations effectively.





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

4. **Professional Networking:** To build professional relationships with scientists, researchers, and industry professionals, which can be valuable for future career opportunities.
5. **Career Exploration:** To explore various career paths and industries where physics knowledge is applicable, helping students make informed decisions about their future careers.
6. **Problem-Solving and Critical Thinking:** To enhance problem-solving and critical thinking skills by working on complex projects and real-world challenges.
7. **Technical Skills Improvement:** To improve technical skills, such as programming, computational modeling, and the use of specialized software and equipment.
8. **Soft Skills Development:** To develop essential soft skills, including communication, teamwork, project management, and time management.
9. **Exposure to Research and Development (R&D):** To provide exposure to R&D environments, helping students understand the processes involved in scientific innovation and product development.
10. **Preparation for Higher Studies:** To prepare students for higher studies, such as PhD programs, by giving them a taste of research work and the academic environment.
11. **Contribution to Projects:** To contribute to ongoing research projects or industrial processes, allowing students to make meaningful contributions and see the impact of their work.

By achieving these objectives, MSc Physics students can enhance their academic knowledge, gain practical skills, and better prepare themselves for their future careers in academia, research, or industry.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

### Program Report

Our students from 1st year MSc and 2nd year Bsc complete their internships at various institutions like NAL, Central University, Christ University Bangalore, VSSC, Cusat.

#### Program Outcome:

**Enhanced Understanding of Physics Concepts:** Internships allow students to see the practical applications of their academic studies, deepening their understanding of complex physics concepts.

**Technical Skill Development:** Students gain hands-on experience with advanced scientific instruments, experimental techniques, and software used in physics research and industry.

**Research Experience:** Internships often involve conducting experiments, analyzing data, and contributing to research projects, providing valuable research experience that is beneficial for future academic pursuits or careers in research.

**Problem-Solving Abilities:** Internships challenge students to apply their knowledge to solve real-world problems, enhancing their critical thinking and problem-solving skills.

**Professional Networking:** Interns have the opportunity to build professional relationships with mentors, researchers, and industry professionals, which can be valuable for future career opportunities and references.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

**Exposure to Different Career Paths:** Internships provide insight into various career options within the field of physics, helping students make informed decisions about their future career paths.

**Improved Soft Skills:** Internships help develop important soft skills such as communication, teamwork, project management, and time management, which are crucial for success in any career.

**Increased Employability:** Having internship experience on their resume makes students more attractive to potential employers, as it demonstrates practical experience and a proactive approach to career development.

**Confidence Building:** Successfully completing an internship can boost students' confidence in their abilities and knowledge, preparing them for future academic and professional challenges.

**Academic Advancement:** Internship experiences can enhance a student's application for graduate programs or scholarships by demonstrating practical experience and commitment to the field.

**Contribution to Real Projects:** Interns often work on actual projects that can have a meaningful impact on their field of study or industry, giving them a sense of accomplishment and contribution.

Certificates:



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CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

INTERNSHIP REPORT

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**SOLVING MANY ELECTRON SYSTEM USING SCF METHOD**

---

Submitted by: SANIDYA E D  
Christ College (Autonomous), Irinjalakuda

Supervised By : Professor Vincent Mathew  
Department of Physics  
Central University of Kerala , Kasargod  
13 May , 2024



INTERNSHIP REPORT

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**SOLVING MANY ELECTRON SYSTEM USING SCF METHOD**

---

Submitted By: NISIN M JUSTIN  
Christ College(Autonomous),Irinjalakuda

Supervised By - Professor Vincent Mathew  
Department of Physics  
Central University of Kerala,Kasargod



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

Council of Scientific & Industrial Research  
(CSIR-NAL), Bangalore

Internship Report on

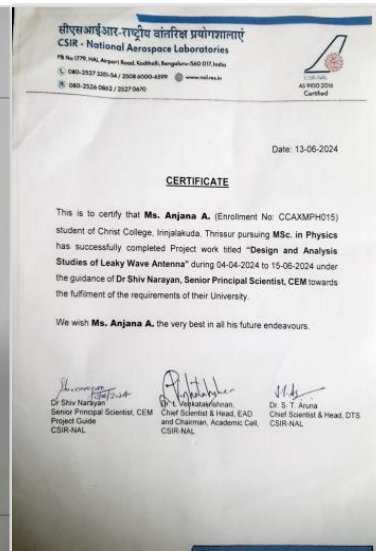
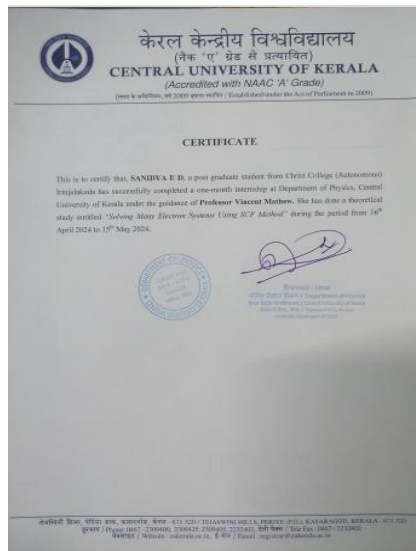
**"DESIGN STUDIES ON ENHANCEMENT OF EM PERFORMANCE OF RADOME USING FSS/METASURFACE"**

Under guidance of

Dr. Shiv Narayan  
Senior Principal Scientist  
Centre for Electromagnetics (CEM)  
CSIR-National Aerospace Laboratories (CSIR-NAL),  
Bangalore-560017

DHEERA K S  
CHRIST COLLEGE IRINJALAKUDA  
THRISSUR, KERALA

MAY, 2024





CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:



## Problem Solving Methodologies



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

## 1. Program Name: Problem solving

1. JAM and Other Competitive exams Coaching
2. Problem solving and discussion after Lectures

### Program Objectives

1. Comprehensive Coverage: Provide a comprehensive coverage of the syllabus for JAM and other competitive exams, focusing on key topics in Physics.
2. Concept Clarity: Ensure that students have a clear understanding of fundamental concepts in Physics through detailed explanations and examples.
3. Problem Solving Skills: Develop students' problem-solving skills by providing them with ample practice problems and guidance on effective problem-solving strategies.
4. Exam-oriented Preparation: Tailor the coaching program to align with the exam pattern and format of JAM and other competitive exams, ensuring that students are well-prepared for the specific requirements of these exams.
5. Regular Assessments: Conduct regular assessments, including quizzes, tests, and mock exams, to evaluate students' understanding and track their progress.
6. Discussion Sessions: Organize regular discussion sessions after lectures to clarify doubts, discuss challenging concepts, and reinforce learning through peer interaction.



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

7. Individual Attention: Provide individual attention to students, addressing their specific learning needs and helping them overcome any difficulties they may face in understanding the material.
8. Feedback and Improvement: Provide feedback to students on their performance and areas for improvement, and work with them to develop strategies for improvement.
9. Motivation and Confidence Building: Motivate students and build their confidence by highlighting their strengths and encouraging them to overcome challenges.
10. Resource Material: Provide students with access to relevant study material, books, and online resources to supplement their learning and preparation.

### Program Report:

1. JAM and Other Competitive exams Coaching

Our department offers comprehensive online coaching for Joint Admission Test for M.Sc, Integrated M.Sc-Phd, M.Sc.-Ph.D Dual Degree at the IITs, integrated Ph.D at IISc and other M.Sc. Entrance, like TIFR, JEST, HCU, BHU, DU, JNU, CUCET, SAU etc. Besides this, we also provide Study Materials like previous years solved question papers and Online Tests for IIT

JAM as well as other M.Sc. Entrance Exams. We also encourage students to solve the previous years question papers in groups as well as individually. Currently 10 students ( 3DC ) are benefitted from the same. The classes are conducted via Moodle platform. All the materials including the syllabus is uploaded in the same platform. As a part of our teaching methodology, we stress on vital areas in respect to the Syllabus and also organize





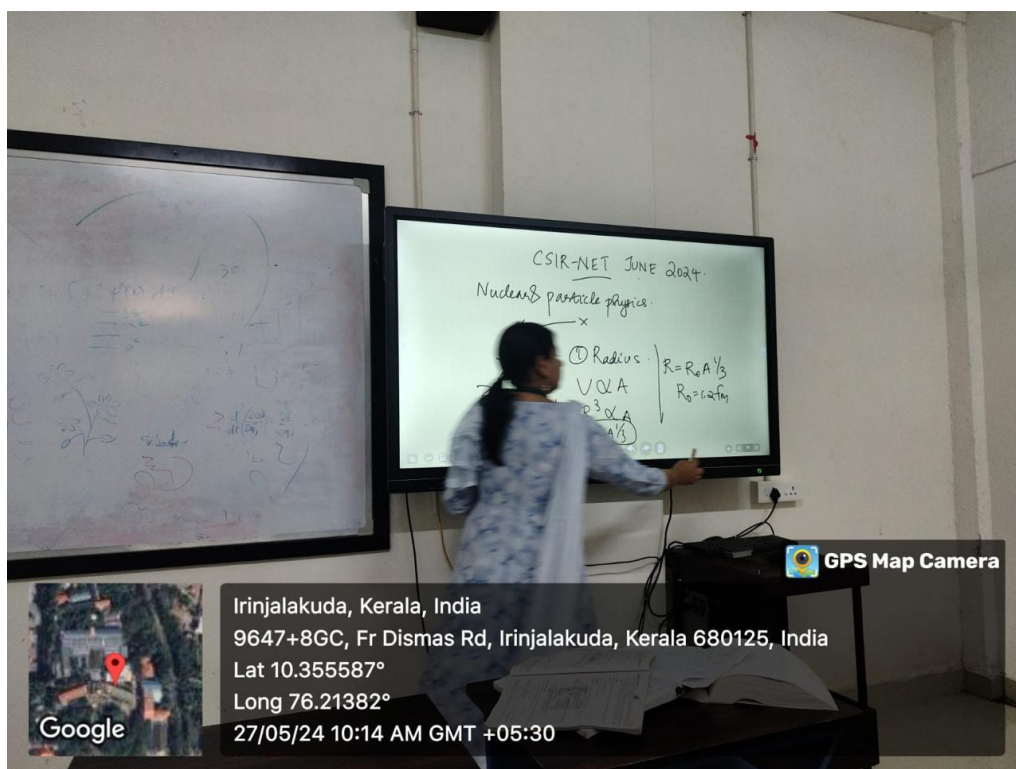
CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

well-planned Online Tests. Department also helps in career counselling to opt for a suitable career path and provides necessary and useful information for various competitive examinations for various streams.

**Program Attained Outcome:** The outcome of coaching for JAM (Joint Admission Test for M.Sc.) can be measured in various ways, depending on the goals of the candidates and the effectiveness of the coaching programs. Coaching programs typically help students better understand the exam pattern, essential topics, and problem-solving strategies, leading to improved performance in competitive exams like JAM, GATE, and others. Intensive preparation through coaching can boost scores significantly, increasing the likelihood of qualifying for top institutes like IITs, IISc, and other prestigious universities.

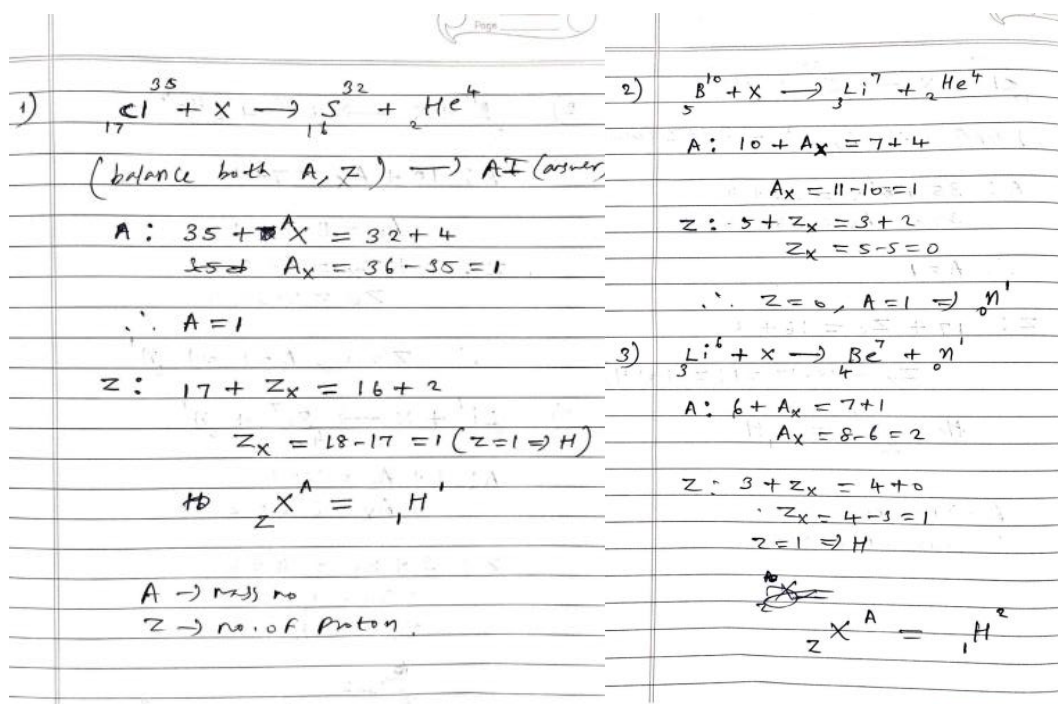


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4  ${}_{13}^{27}\text{Al} + {}_0^1\text{n} \rightarrow {}_{12}^{27}\text{Mg} + \text{X}$

A:  $27 + 1 = 27 + A_x$   
 $28 = 27 + A_x$   
 $A_x = 1$

Z:  $13 + 0 = 12 + Z_x$   
 $Z_x = 1$

${}_{12}^1\text{X} \Rightarrow {}_1^1\text{H} \quad Z=1 \Rightarrow \text{H}$

5)  ${}_{4}^9\text{Be} + {}_2^4\text{He} \rightarrow \text{X} + {}_0^1\text{n}$

A:  $9 + 4 = A_x + 1$   
 ~~$13 + A$~~   $13 = A_x + 1$   
 $A_x = 12$

Z:  $4 + 2 = Z_x + 0$   
 $6 = Z_x \quad Z=6 \Rightarrow \text{C (Carbon)}$

${}_{6}^{12}\text{X} \Rightarrow {}_6^{12}\text{C}$

TEST PAPER  
NUCLEAR PHYSICS  
Time: 45 minutes Marks: 50 (10 x 5)

1. According to the shell model the spin and parity of the two nuclei  ${}_{10}^{20}\text{Ne}$  and  ${}_{14}^{30}\text{Si}$  are, respectively,

(a)  $(\frac{3}{2}^+)$  and  $(\frac{3}{2}^+)$  (b)  $(\frac{5}{2}^+)$  and  $(\frac{7}{2}^+)$   
(c)  $(\frac{7}{2}^+)$  and  $(\frac{5}{2}^+)$  (d)  $(\frac{7}{2}^+)$  and  $(\frac{7}{2}^+)$

2. The dominant interactions underlying the following processes  
A.  $K^- + p \rightarrow \Sigma^- + \pi^+$ , B.  $\mu^- + \mu^+ \rightarrow K^- + K^+$ , C.  $\Sigma^- \rightarrow p + \pi^-$  are  
(a) A: strong, B: electromagnetic and, C: weak  
(b) A: strong, B: weak and, C: weak  
(c) A: weak, B: electromagnetic and, C: strong  
(d) A: weak, B: electromagnetic and, C: weak

3. The binding energy of a light nucleus (Z, A) in MeV is given by the approximate formula  

$$B(A, Z) = 16A - 20A^{-1} - \frac{3}{4}Z^2A^{-1/3} + 30\frac{(N-Z)^2}{A}$$
where  $N = A - Z$  is the neutron number. The value of Z of the most stable isobar for a given A is  
(a)  $\frac{A}{2} \left(1 - \frac{A^{2/3}}{160}\right)^{-1}$  (b)  $\frac{A}{2}$  (c)  $\frac{A}{2} \left(1 - \frac{A^{2/3}}{120}\right)^{-1}$  (d)  $\frac{A}{2} \left(1 + \frac{A^{2/3}}{64}\right)^{-1}$

**2.Program Name: Project**

**Program Objectives:**



CRITERION	II	Teaching-Learning and Evaluation
KEY INDICATOR	2.3	Teaching - Learning Process
METRIC	2.3.1	Student-centric methods such as experiential learning, participative learning and problem-solving methodologies are used for enhancing learning experiences:

- Research the methodology of the project
- Formulate a research project
- Design and implement a research project
- Assess the result of the project
- Compile the scope and limitations of a research project

**Program Report:**

Final BSc Physics students were divided into different groups consisting of 3 or 4 members under the guidance of our faculty members. They successfully completed their works on time and submitted the same to the external evaluation.

**Program Attained Outcome**

**Research Findings**

Empirical Results: Data collected through experiments, surveys, case studies, or simulations that provide insights into the research question.

Analysis and Interpretation: The ways in which the data were analyzed (statistical, qualitative, computational, etc.) and the interpretation of these findings.

Discovery of New Information: New knowledge or insights that contribute to the field, whether it's identifying patterns, formulating new theories, or challenging existing beliefs.



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**“Familiarization of Seebeck Effect and Characteristic Study of Peltier Module”**

A project report submitted to

**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA**

*In partial fulfilment of the requirement for the award of the degree of*


**BACHELOR OF PHYSICS**

Submitted by

**SHAUN SHOBY**  
(CCA VSPH069)

Under the supervision of

**Aswathi P V**



Department of Physics  
**CHRIST COLLEGE AUTONOMOUS IRINJALAKUDA**  
**UNIVERSITY OF CALICUT**

1

**“STUDY ON P3HT:PCBM ORGANIC SOLAR CELL”**

Project Report submitted to

**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA**

In partial fulfilment of the requirement for the award of the degree of


**BACHELOR OF PHYSICS**

Submitted by

**SIYA SANTHOSH**  
(CCA VSPH049)

Under the supervision of

**Asst.Prof JOSE SUNNY**



**DEPARTMENT OF PHYSICS**  
**CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA**  
**UNIVERSITY OF CALICUT**  
**MARCH 2024**


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**“SELF BALENCING PLATFORM”**

Project Report submitted to  
**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA**  
In partial fulfilment of the requirement for the award of the degree of  
**BACHELOR OF PHYSICS**  
Submitted by  
**SHOBITH JAIRAJ**  
**(CCAVSPH058)**  
Under the supervision of  
**Asst.Prof.Simmy Nixon**




**DEPARTMENT OF PHYSICS**  
**CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA**  
**UNIVERSITY OF CALICUT**

**MARCH 2024**

**“Smart IoT Irrigation System”**

Project Report submitted to  
**CHRIST COLLEGE (AUTONOMOUS) IRINJALAKUDA**  
*In partial fulfilment of the requirement for the award of the degree of*  
**BACHELOR OF PHYSICS**  
Submitted by  
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**(CCAVSPH045)**  
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**Asst.Prof.Megha P S**



**DEPARTMENT OF PHYSICS**  
**CHRIST COLLEGE (AUTONOMOUS), IRINJALAKUDA**  
**UNIVERSITY OF CALICUT**

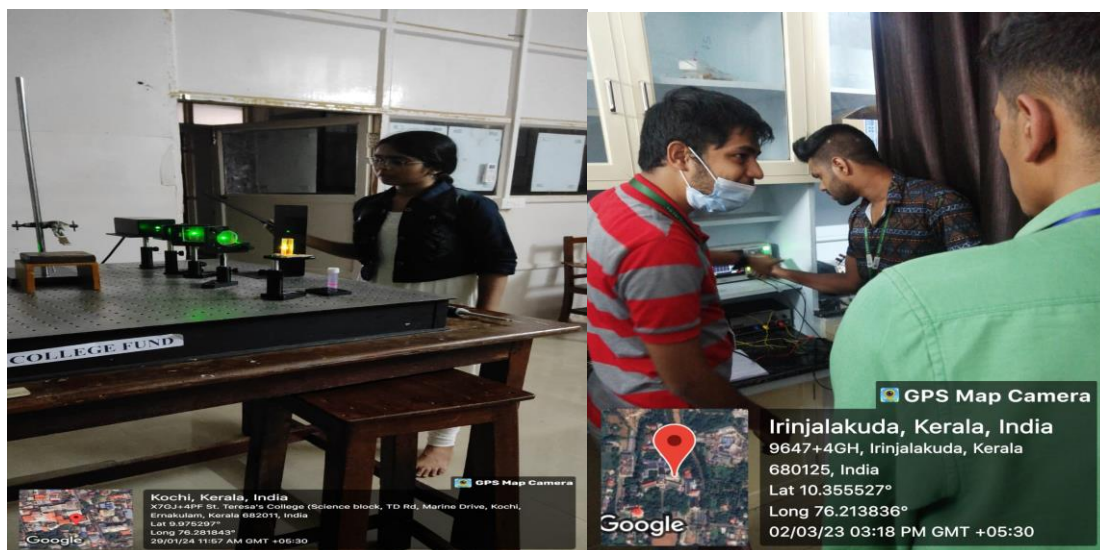
**MARCH 2024**





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## Project internships at various institutes





**CHRIST**  
COLLEGE (AUTONOMOUS)  
IRINJALAKUDA, KERALA

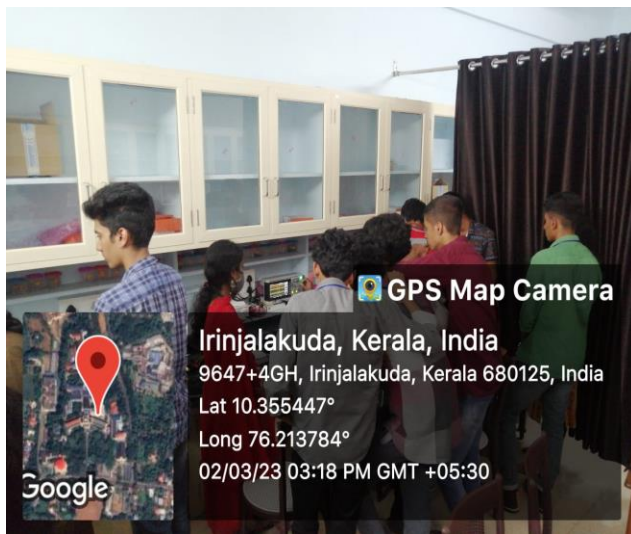
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<http://christcollegeijk.edu.in>

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PRINCIPAL

**Fr. Dr. Jolly Andrews**  
Associate Professor -  
In-Charge of Principal  
Christ College (Autonomous)  
Irinjalakuda