

DEPARTMENT OF PHYSICS (SELF- FINANCING)

Contents

Introduction 3

UG Programmes 4

BSc-(2021-2024 Batch) 4

BSc- (2022-2025 Batch) 20

BSc-(2023-2026 Batch) 26

MSc -(2023-2025 Batch) 32

MSc-(2022-2024 Batch) 36

Introduction

To improve the quality and overall development of students, the Department of Physics (Self Financing) has conducted various programs. As a part of effective learning strategy, the entire class was divided into 4 groups consisting of 5-6 members and was assigned with a mentor to monitor the activities. The Chief mentor, along with other mentors actively involved in all the activities. The Chief mentor for third year is Jose Sunny, for second year, it is Simmy Jose and for first year it is Megha P.S. The division was based on the marks obtained in the screening test conducted in the beginning of the academic year. The groups were formed in such a way that each group consists of slow, medium and fast learners. The class teacher was assigned the role of the Chief Mentor.

UG Programmes

BSc Physics(2021-2024 Batch)

OBJECTIVES

- To help students identify and pursue opportunities for employment related to their degrees.
- To shape students into confident graduates with excellent leadership, communication, critical thinking, professionalism and other skills important to the transition to the world of work.
- To enhance student leadership skills
- To monitor academic performance
- To foster a growth mind set

PLG ACTIVITIES

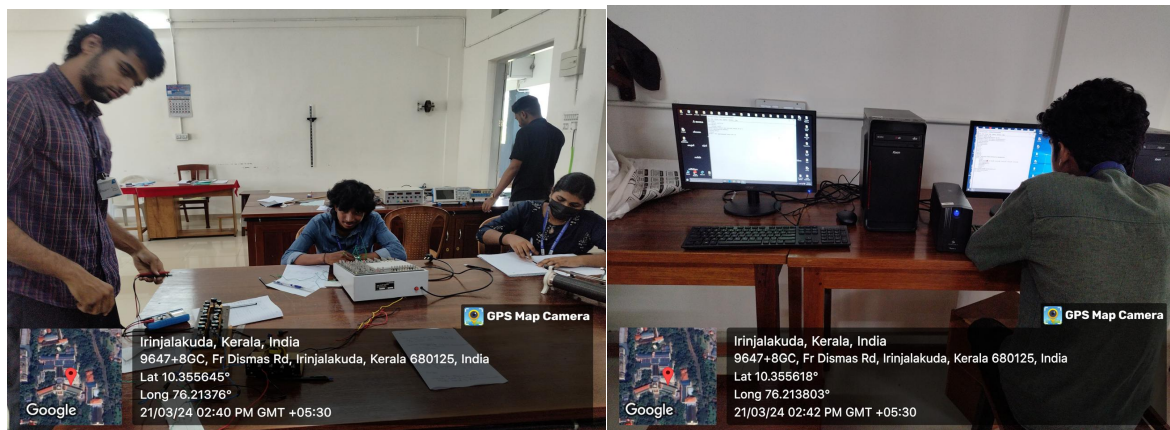
The following programmes were implemented as a part of the same.

- Each mentor has formed WhatsApp groups so as to interact with the students and to assign various activities..
- Project was implemented on the basis of peer groups, where students get time to

interact with each other as well as with their mentor.

- Practical Labs based on Peer Groups have helped them to get a better understanding of the experiments and have motivated them to do the same independently.

1. Lab Sessions



Practicals of the 3rd year BSc Physics students general experiments and Electronics conducted successfully and all the students submitted the practical record. At the end of the semester practical examinations were conducted.

OUTCOME

Practical Labs based on Peer Groups have helped them to get a better understanding of the experiments and have motivated them to do the same.

2. Seminar/ Project Presentation



- The subject-based seminars / Project in physics provide a platform for postgraduate students to delve deeper into various topics within the syllabus, engage in independent research, and enhance their presentation skills. Through

these seminars, students have the opportunity to explore diverse areas of physics, share their knowledge with peers, and receive constructive feedback to enrich their learning experience.

3.PRATHEEKSHONAM 2.0



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.

OUTCOME

Inclusion and Integration: Such events promote social inclusion, breaking barriers between specially-abled students and others. It creates a space where they can participate in cultural traditions, enhancing a sense of belonging.

It raises awareness about the abilities of specially-abled students and encourages a more compassionate outlook.



BSc- (2022-2025 Batch)

OBJECTIVES:

- To help students identify and pursue opportunities for employment related to their degrees.
- To shape students into confident graduates with excellent leadership, communication, critical thinking, professionalism and other skills important to the transition to the world of work.
- To enhance student leadership skills
- To monitor academic performance
- To foster a growth mind set
-

PLG Activities

- 1. Institutional visit to ISRO, Bagaluru

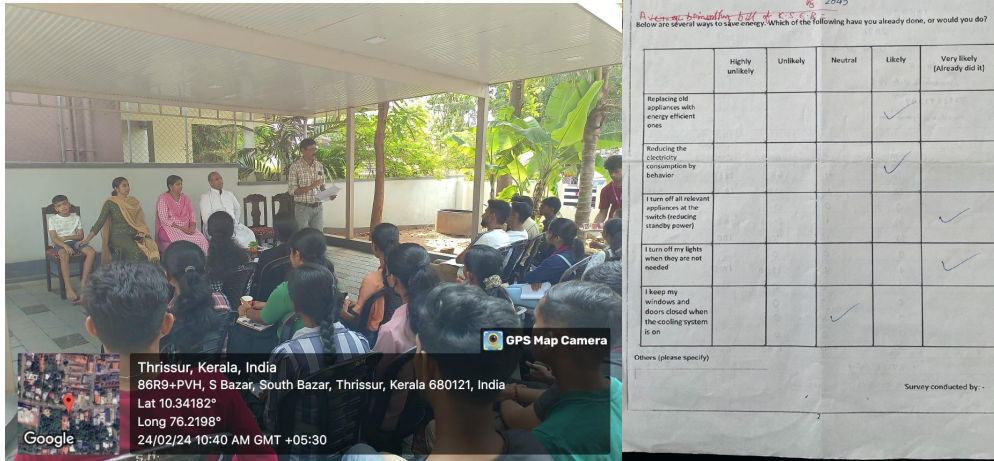


OUTCOME

- Give an orientation to the students about The ISRO - its history, achievements, etc
- Make them familiar with the infrastructural -facilities, innovative practices, R&D

facilities in the institution

2.ENERGY SURVEY



- 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 (Councillor 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

3.PRATHEEKSHONAM 2.0



Pradheekshonam was conducted by 2nd and 3rd year students of physics self on 22nd August. Fr. Jolly Andrews (Principal, Christ college Irinjalakuda) 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.

OUTCOME

Inclusion and Integration: Such events promote social inclusion, breaking barriers between specially-abled students and others. It creates a space where they can participate in cultural traditions, enhancing a sense of belonging.

It raises awareness about the abilities of specially-abled students and encourages a more compassionate outlook.

4. Physics Laboratory sessions



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

6. Mentor Mentee sessions



Mentor mentee meetings are conducted periodically. During the sessions, challenges or obstacles encountered during the pursuit of goals of the mentee, results and progress and future career planning etc were the major topics of discussion.

Outcome

Mentor-mentee meetings provide mentees with personalized guidance, support, and advice from experienced mentors. Mentors can offer insights, perspective, and wisdom gained from their own professional and personal experiences.

B Sc-(2023-2026 Batch)

OBJECTIVES

To help students identify and pursue opportunities for employment related to their degrees.

To shape students into confident graduates with excellent leadership, communication, critical thinking, professionalism and other skills important to the transition to the world of work.

To enhance student leadership skills

To monitor academic performance

To foster a growth mind set

PLG Activities

Mentoring meeting

Mentor mentee meetings are conducted periodically. During the sessions, challenges or obstacles encountered during the pursuit of goals of the mentee, results and progress and

future career planning etc were the major topics of discussion.



2. Physics Laboratory sessions



OUTCOME

Practicals of the First year BSc Physics students general experiments conducted successfully and all the students submitted the practical record.

MSc -(2023-2025 Batch)

The batch consisted of 10 students mentored by chief mentor Ms.Anjali Joby.

OBJECTIVES:

1.Skill Development: Mentoring can help mentees develop specific skills relevant to their field or personal growth, such as leadership, communication, problem-solving, or technical expertise.

2.Career Advancement: Mentoring often provides mentees with guidance on career development, including setting goals, navigating career paths, and making strategic decisions to advance in their careers.

3. Increased Confidence: Through regular feedback and support from their mentors, mentees can gain confidence in their abilities, leading to improved performance and a stronger sense of self-assurance.

PLG Activities

1. Subject related seminar presentations:

OUTCOMES:

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.

Presentation Skills: Students gain experience in public speaking and presenting information in a clear, organized, and engaging manner.

Communication Skills: Presenting seminars allows students to improve their verbal communication skills, including articulating ideas, responding to questions, and engaging with an audience.

Critical Thinking: Students learn to critically evaluate information, arguments, and evidence, both in their own research and in the presentations of their peers.

Confidence: Presenting in front of an audience can boost students' confidence and self-esteem, especially as they receive feedback and validation for their efforts.

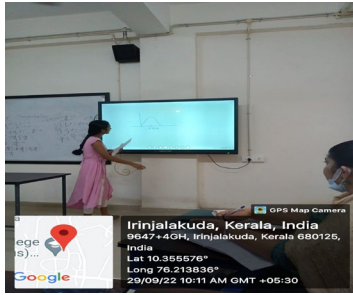
Time Management: Planning and preparing for a seminar presentation require students to manage their time effectively, setting deadlines for research, content creation, and practice sessions.

Collaboration: In some cases, students may work in teams to prepare and deliver seminar presentations.

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.

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.



2.VARIOUS NATIONAL AND INTERNATIONAL INTERNSHIPS:

All the 10 students of the batch attended internships at various institutions like NAL Bangalore, CUSAT,Central University Kasargode,Sharjah University and Christ University,Bangalore during the months of April,May and June,2024.

OUTCOMES

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.

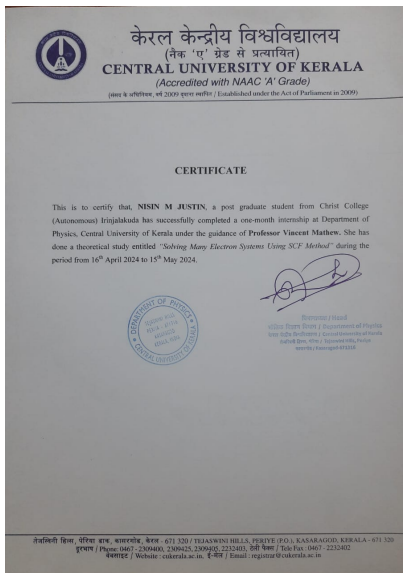
Industry Exposure: Internships offer exposure to the professional environment and industry practices. Interns gain insight into the day-to-day operations of organizations, industry trends, and best practices, helping them understand the broader context of their field.

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

Overall, internships offer a range of advantages for students and recent graduates, helping them develop professionally, build their networks, explore career paths, and enhance their employability in the competitive job market.



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. Shiyu 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

3. MENTOR-MENTEE MEETINGS:

Mentor mentee meetings are conducted periodically. During the sessions, challenges or obstacles encountered during the pursuit of goals of the mentee, results and progress and future career planning etc were the major topics of discussion.

OUTCOMES:

Mentor-mentee meetings offer numerous advantages for both parties involved in the mentoring relationship. Here are some key advantages:

Guidance and Support: Mentor-mentee meetings provide mentees with personalized guidance, support, and advice from experienced mentors.

Career Development: Mentors can help mentees navigate their career paths, set goals, and develop strategies for professional growth.

Skill Enhancement: Mentor-mentee meetings offer opportunities for mentees to develop and enhance their skills, knowledge, and competencies.

Networking Opportunities: Mentors can introduce mentees to their professional networks, helping them expand their connections and build relationships with industry professionals.

Personal Development: Mentor-mentee meetings can contribute to mentees' personal development by providing guidance on interpersonal skills, communication, leadership, and emotional intelligence.

Overall, mentor-mentee meetings offer a range of advantages for mentees, including guidance, support, skill development, networking opportunities, personal growth, confidence building, problem-solving, feedback, accountability, empowerment, and long-term relationships.



4.CHANDRAYAN SEMINAR:

OUTCOMES:

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.

Presentation Skills: Students gain experience in public speaking and presenting information in a clear, organized, and engaging manner.

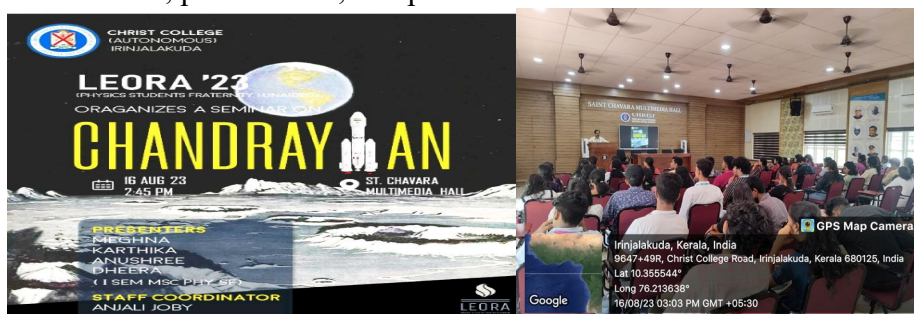
Communication Skills: Presenting seminars allows students to improve their verbal communication skills, including articulating ideas, responding to questions, and engaging with an audience.

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.

1. Professional Development: Seminar presentations help students develop skills that are highly valued in professional settings, such as critical thinking, communication, and presentation abilities. Program Report:

PROGRAM OUTCOME:

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



MSc-(2022-2024 Batch)

The batch consisted of 11 students mentored by chief mentor Ms.Anju Sebastian.

OBJECTIVES:

Personal Growth: Mentoring isn't just about professional development; it can also support mentees in personal growth, including enhancing self-awareness, resilience, and work-life balance.

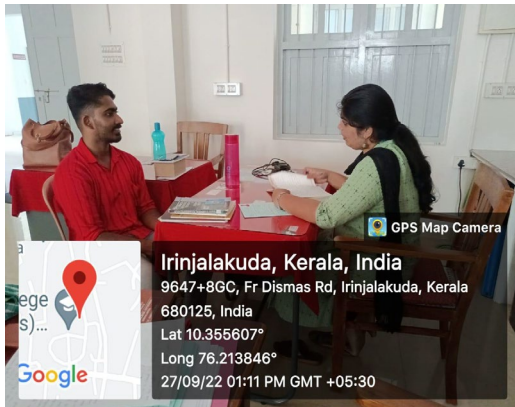
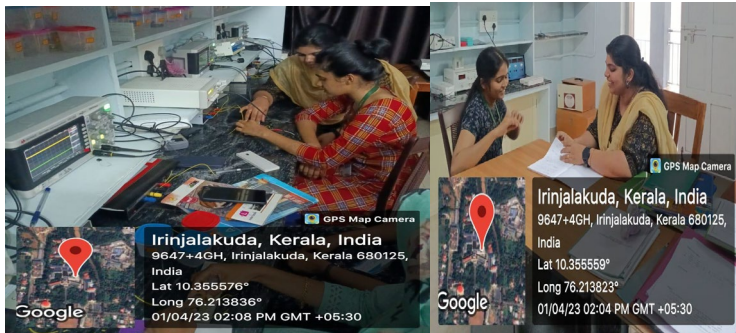
Leadership Development: For mentors, engaging in a mentoring relationship can enhance their leadership skills, such as coaching, mentoring, and providing constructive feedback, which are valuable in both professional and personal contexts.

These objectives aim to enhance both the academic and personal development of students, preparing them for successful careers in research and beyond.

PLG Activities

Mentor Mentee Meetings

Mentor mentee meetings are conducted periodically. During the sessions, challenges or obstacles encountered during the pursuit of goals of the mentee, results and progress and future career planning etc were the major topics of discussion.



Seminar Presentation contest

Open House Visit Report at CUSAT: Exploring Laboratories and Research Facilities

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





Outcome: The visit created enthusiasm and interest in research. Opened

Laboratory Experiments Demonstration for Juniors and Certificate Course Students

The demonstration of laboratory experiments to juniors and open course students serves as a valuable educational opportunity to engage participants in hands-on learning, reinforce theoretical concepts, and cultivate a deeper understanding of physics principles. Through interactive demonstrations, participants have the opportunity to explore scientific phenomena, conduct experiments, and apply theoretical knowledge in practical settings. Working of DSO and other equipments were demonstrated

LEARNING OUTCOMES:

The demonstration of laboratory experiments offers numerous learning outcomes for participants, including:

Reinforcing theoretical concepts by applying them in practical settings.

Developing practical skills in experimental design, data collection, and analysis.

Cultivating a deeper understanding of scientific principles through hands-on exploration.



1. Attendance of Talks on Recent Advances in Physics

As part of our peer learning initiative, our group of postgraduate physics students actively participated in attending talks and seminars on recent advances in physics. These talks provided us with invaluable opportunities to stay updated with the latest developments in various subfields of physics, broaden our knowledge base, and engage in discussions with experts in the field. Each talk covered a specific topic within the realm of physics, ranging from theoretical advancements to experimental discoveries. After attending each talk, members of our group collaborated to compile comprehensive summaries highlighting the key points, methodologies, and implications discussed by the speaker. These summaries served as valuable reference materials for further reflection and discussion.



Learning Outcomes:

Through our participation in the talks on recent advances in physics, we achieved several learning outcomes, including:

Staying updated with the latest developments and trends in various subfields of physics, including quantum mechanics, cosmology, condensed matter physics, and more.

Enhancing our understanding of complex theoretical concepts and experimental techniques through exposure to cutting-edge research.

Developing critical thinking skills by analyzing and evaluating the implications of new discoveries and theories in physics.

2. Subject based Seminar Presentations

The subject-based seminars in physics provide a platform for postgraduate students to delve deeper into various topics within the syllabus, engage in independent research, and enhance their presentation skills. Through these seminars, students have the opportunity to explore diverse areas of physics, share their knowledge with peers, and receive constructive feedback to enrich their learning experience.

