E-SANCHAR
2022-23

Volume 3
Issue 2
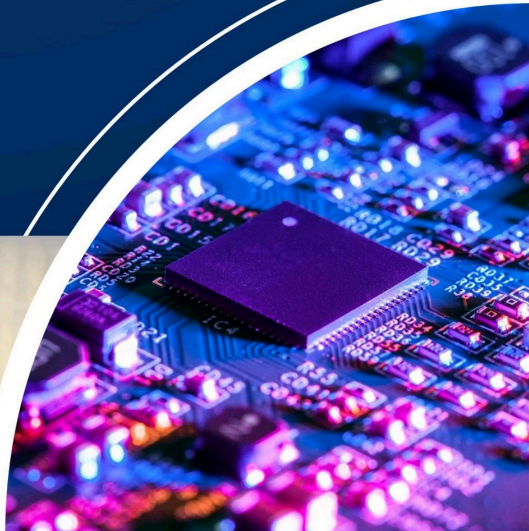
"Electronics and Telecommunication The Spark that Ignites the Future."

SIEM

Sandip Foundation's
SANDIP INSTITUTE OF ENGINEERING AND MANAGEMENT

Approved by AICTE, New Delhi & Govt. of Maharashtra.
Affiliated to Savitribai Phule Pune University, Pune

SANDIP FOUNDATION

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

•About SIEM•

Sandip Institute of Engineering and Management (SIEM) is located in the scenic, eco-friendly and conductive-to-study campus at an elevation off the Trimbak Road (Mahiravani, Nasik) leading to one of the twelve renowned pilgrimages of jyotirlingas known as Trimbakeshwar (abode of Lord Shiva) at the foot hills of Brahmagiri mountain ranges. SIEM is approved by All India Council for Technical Education, New Delhi Government of India and affiliated to Savitribai Phule University of Pune. SIEM is committed to imparting quality education in an atmosphere that will ensure that its students are confident, self motivated and industry-ready. Towards this goal, we are giving importance to qualified and experienced faculty for effective teaching-learning process, equipping our laboratories with best-in- class machines and instrument and developing overall personality of our students (with emphasis on strengthening the fundamentals of subjects, ability to work as a team and good communication skill). There is a well formulated regime with a blend of Theoretical learning and practical experience. This enables the faculty to guide the students to learn tomorrow, today.

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

•About Department•

Electronics & Telecommunication (E&TC) Engineering

The Electronics & Telecommunication (E&TC) Engineering Department at SIEM, affiliated with Savitribai Phule Pune University, Pune, sustains and strengthens its teaching and learning program by adopting a comprehensive student-centric approach. This approach is designed to add significant value to the learner in an integrated manner through conceptual and interactive teaching, active lab sessions, seminars, projects, and independent study. The department features state-of-the-art laboratories equipped with the latest technology and tools, allowing students to gain hands-on experience in various aspects of electronics and telecommunication engineering. Additionally, a strong emphasis is placed on research and development (R&D), encouraging students to explore new ideas, innovations, and technological advancements. Through various projects and research initiatives, students are nurtured to become future leaders in the field. The department also collaborates with leading companies and organizations in the electronics and telecommunication sectors to provide students with opportunities for internships, industrial visits, value added programs and guest lectures from industry experts. These interactions help students gain valuable insights into the industry and stay updated with the latest developments. Recognizing the importance of continuous growth and development, the department encourages its faculty members to attend workshops, seminars, conferences, and training programs for the continual upgrading of their knowledge and skills. The experienced faculty members are dedicated to nurturing the future technocrats of the nation, ensuring that students receive a well-rounded education that prepares them for the dynamic field of electronics and telecommunication engineering.

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• Vision of the Institute •

We at SIEM aspire to be a globally recognized institute that delivers a world class education to outstanding intellectualsby nurturing and. grooming their interests, creative abilities and thrusts to acquire a life- long learning so as to imbibe values of their commitment towards society.

• Mission of the Institute •

We at SIEM shall strive continuously,
• To inculcate and imbibe knowledge of cutting-edge technologies and its implementation for solving real life problems in a conducive environment.
• To collaborate with national and international institutes/industries/ universities of repute for sustainable growth through team work.
• To motivate and retain highly skilled and knowledgeable individuals, whose creativity and interest in teaching upholds to achieve desired goals.
• To provide a dedicated platform to cater the needs of individuals and Inspire them for their intellectual growth and character building.
To enable the students to achieve excellence in the chosen fields and to share the responsibilities of citizenship and service in a disciplined manner

• Vision of the Department •

To excel in the field of Electronics and Telecommunication Engineering so as to create competent professionals focusing on the needs of industry and society with professional ethics.

• Mission of the Department •

M1.: To empower competent graduates for applying knowledge and skill sets to face global challenges and societal needs by achieving excellence in innovation.
M2:. To provide a platform for budding graduates to apply and solve real life problems using cutting edge technologies through their creative abilities aimed at fulfilling the needs of society and industry.
M3: To cultivate ethical values in graduates for their Internationalization.

Hon'ble Chairman's Message

  Sandip Foundation was established in 2005 with a vision of creating an education system from which the leaders of tomorrow emerge. Since our inception we have been aware of our strengths, motives and goals which we have set out to achieve. When we embarked on this journey, all we had was a dream and the tools of foresight and strategy. We combined these forces to pave a path of growth towards excellence and merit. Today it is our endeavor to be the most competitive institution in the country with emphasis on efficiency in everyday operations, reliability for students and thrust on discovery and development of new technologies. We are an organization that combines the latest developments in the field of education with our scientific and operational skills to create an environment which nurtures and encourages the aspirations of students. It is our aim that the combination of these factors along with the state of the art infrastructure and a dedicated teaching staff will provide an impetus to the Indian educational system as a whole. Our first campus is set up at Nashik,

Maharashtra where the college building is spread across a 200 acre area. Keeping pace with the times, the campus is Wi-Fi enabled. To ensure the complete educational experience, laboratories with the latest tools and machinery are provided along with a comprehensive library with RFID technology, a computer centre with complete internet connectivity a wholesome cafeteria, all set up in a green environment to give our students the most healthy and pleasant experience as they embark and pursue their professional goals.

What does an International quality Education system consist of? That is the question we asked ourselves when we set out to build this Foundation. India as a country has no problem with unemployment but there are institutions which churn out a large number of unemployable students. Should we consider ourselves an exception to this? The search for the answer has resulted in the faculty and staff to come up with innovative methods in teaching to construct new knowledge in the classroom. Our motto is to always give our students the best of what is happening in and around so that they are always at the cutting edge of academics the world over

The cultural aspect has always been a strong-point of our College as it has an acknowledged role in molding the personality, teaching soft-skills, developing leadership and management abilities and strengthening the EQ. Extra-curricular activities, participation in sports and other cultural activities has now become universal contributing to all-round formation which is much needed in the world today. Finally we look to create an Alumnus for inspiration and support so that our students have wonderful role models to emulate. Our faculty and students remain focused on a quality of education that is not just a college degree but a way of life.

Dr. Sandipkumar Jha,
Hon'ble Chairman,
Sandip Foundation

Principal Message

Dear Students,

On behalf of the Management, Faculty and Staff of SIEM, it is an honor to welcome you to this prestigious institution. We at SIEM are strongly committed to provide quality technical education to our students. Now what does quality consist of? Is it mere state-of-the-art laboratories and a well-furnished classroom? Or does it also involve the proactive participation of teachers and students alike? These are some of the questions we asked ourselves before embarking on this journey. In the ensuing years, our Faculty took up this task seriously, of trying to understand what international quality means and of taking the effort to make this a reality. Of course, we laid emphasis on educational infrastructure with laboratories, libraries and other resources for teaching. Nevertheless, the core of our efforts centered on applying innovative methods to our teaching-learning and evaluation, in spite of the large numbers we deal with. If our students do not pick up the skills of analysis and critical thinking, all the memorization and reproduction they may achieve in this Institution will be in vain in the global culture and

economy. It is our belief that every student has an unending storehouse of talent and when nurtured properly, we can help bring out the best in that individual.

The approach of the Institution is holistic. It has called for learning methods that are more demanding on both the professor and the student. It has led to a renewed emphasis on research for faculty and on initiating a taste for research among students. The monitoring of this process by the Heads of the Departments and by the Academic Administrators, in order to encourage good practices and to evaluate their effectiveness, gives hope of a renewal of academic culture on campus. I want to congratulate you and wish you the best on this journey. It is our assurance that at SIEM you will emerge as tomorrow's leader, today

Dr. D. P. Patil,
Principal,
Sandip Institute of Engineering and Management

HOD Message
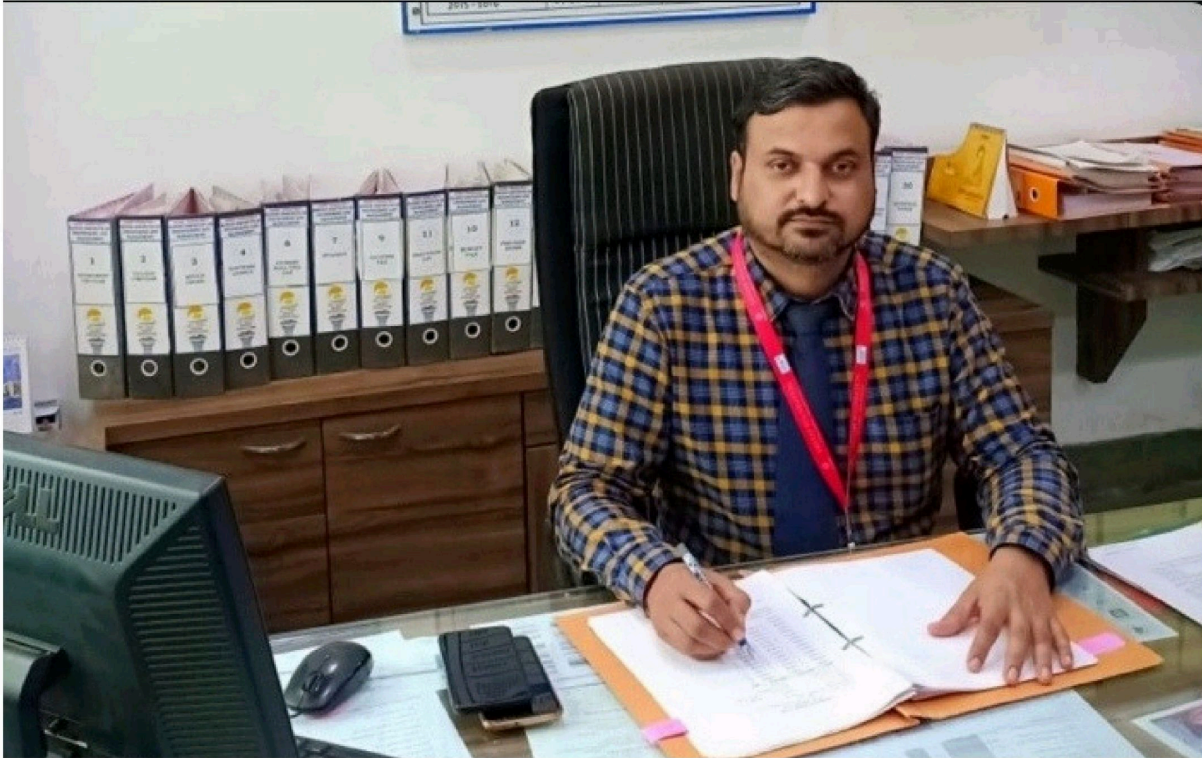
Electronics aims at making the life of human beings comfortable.Communication connects people and brings them together. The vast application of electronics and the rapid advancements in the field of communications makes the study of this branch a covered option. The department's teaching areas include network, microprocessor, communications, signal and image processing, pattern recognition, electronic circuits, system and control, electronics, VLSI, CAD, parallel and distributed processing and wireless communication. Keeping in line with fast changing technological developments, the department has well designed, laboratories with modern equipment like Spectrum Analyzer, Logic Analyzer, DSO and advanced software like Proteus, Cadence, to incorporate all advancements in existing and emerging technologies with state-of-the-art laboratories complement the high standards set by the competitive syllabus and nurture the inclination of the students towards research and development.

(Prof. Yogesh R. Risodkar)
Head (E&TC)

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

TABLE CONTENT

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DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

Topic : **Mechatronics**

~**Kaushal Lahamage (BE E & TC)**
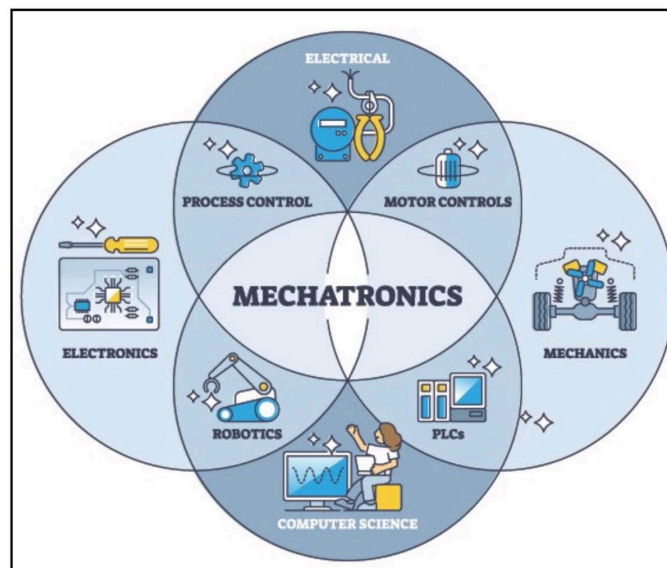
Mechatronics is an interdisciplinary field of engineering that combines principles from mechanics, electronics, computer science, and control systems to design, develop, and optimize intelligent systems with enhanced functionality. Mechatronics involves the integration of mechanical, electrical, and software engineering to create smart products, systems, and processes that can sense, think, and act. Mechatronic systems are used in a wide range of applications, including robotics, automotive systems, medical devices, aerospace, and industrial automation. The field of mechatronics has led to the development of innovative technologies such as artificial intelligence, machine learning, and the Internet of Things (IoT). Mechatronic engineers use a combination of theoretical and practical knowledge to design and develop systems that are efficient, reliable, and adaptable. The benefits of mechatronics include improved performance, increased efficiency, and enhanced safety, making it a vital field in modern engineering.

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Topic : **The Future of smart home Technology**

~Animesh Nath (BE & TC)

The future of smart home technology promises an interconnected, efficient, and personalized living experience. Emerging advancements in artificial intelligence, IoT (Internet of Things), and edge computing are set to revolutionize how devices interact with each other and with their users. Smart homes are evolving to become more predictive rather than just reactive. For example, AI-powered systems will learn daily routines to automate tasks like adjusting lighting, temperature, or even suggesting meal options. Additionally, security systems will integrate advanced facial recognition and real-time threat analysis, providing unparalleled safety. Sustainable energy management will also become central, with homes dynamically optimizing energy use based on real-time data. Voice and gesture control will become even more seamless, while compatibility across various brands will improve through universal standards. Ultimately, smart homes of the future will be more intuitive, eco-friendly, and geared towards enhancing convenience, comfort, and energy efficiency.

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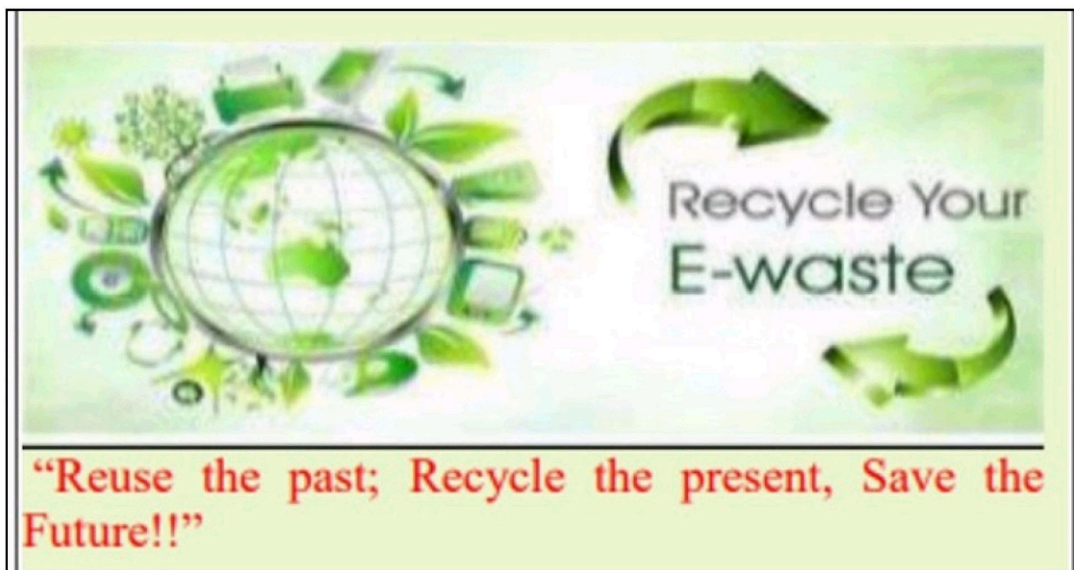
Topic : Cybersecurity

~Mrs. Nikhil Jamdhade (TE E & TC)

Cybersecurity is the practice of protecting electronic information, networks, and systems from unauthorized access, use, disclosure, disruption, modification, or destruction. This includes protecting against malware, viruses, Trojan horses, spyware, adware, ransomware, and other types of cyber threats. Effective cybersecurity measures involve a combination of technologies, processes, and practices designed to safeguard digital information and prevent cyber attacks. This includes firewalls, intrusion detection and prevention systems, encryption, secure passwords, two-factor authentication, regular software updates, and employee education and awareness. Cybersecurity is essential for individuals, businesses, and governments to protect sensitive information, prevent financial loss, and maintain trust and confidence in digital systems. As technology advances and cyber threats evolve, cybersecurity must also adapt to stay ahead of potential threats and ensure the confidentiality, integrity, and availability of digital information.

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Topic : E-Waste Management

~Prashant Avhad (TE E & TC)

"Reuse the past; Recycle the present, Save the Future!!"

"Say No to E-Waste!" The calamitous sequel for health and the ecology of exposure to waste products from human consumption have long been perceived. A relatively recently recognized hazardous waste product comes from discarded electrical and electronic equipment (EEE). In India, the quantity of ―E-waste‖ or electronic waste has now become a major problem. According to ―STEP‖ (Solving the E-waste Problem Initiative), the 2012 global generation of e-waste totalled 45.6 million metric tons. Disposal of e-waste is an emerging global environmental and public health issue, as this waste has become the most rapidly growing segment of the formal municipal waste stream in the world. E-waste or Waste Electrical and Electronic Equipment (WEEE) are loosely discarded, surplus, obsolete, broken, electrical or electronic devices. E-waste is a global, interregional, and domestic problem around 20 million to 50 million tons generated yearly, it is appraise that 75% to 80% is shipped to countries in Asia and Africa for ―recycling‖ and disposal. Loopholes in current e-waste canon allow for the export of e-waste from developed to developing countries under the guise of ―donation‖ and ―recycling‖ purposes. The Parties to the Basel Convention on the Control of Trans boundary Movements of Hazardous Wastes and Their Disposal (The Basel Convention), launched The Partnership for Action on Computing Equipment (PACE) to facilitate environmentally sound management of used and end-oflife computing equipment.

Technophilia 2023

Event Title: 2 Days Technical Event- Technophilia 2023

Event Date: 27th & 28th April 2023

Event Conduction Duration: Whole Day

Event Venue: - E&TC Department, SIEM, Sandip Foundation, Nashik

Participants – Students from engineering, diploma, pharmacy & graduation college all over district

Objectives: Objective of the event was to get awareness about how to organize different events in department to improve their technical skills, team leader spirit, communication skills etc. Also, to provide platform to students to show cast their skills & talent. In these 2 days department has organized different technical as well as non-technical events for students like Project Competition, Poster Presentation, Quiz, Carrom, Shutter Role, One Minute Game & Friends forever etc. The winners of every event has been awarded by good amount of prizes, trophy, & medal.

Outcome:

They help the students in gaining knowledge: - The students will need to thoroughly research the issues if they are presenting a technical paper since the judges will quiz them on them. Additionally, even though the students are not Wikipedia, they can still learn by encountering a variety of questions from various fields in any quiz competition.

The students realize where they stand: - Each pupil thinks of something original or innovative. A student can compare his thoughts with those of others and determine where he stands in the world of technology after participating in technical activities where other students share his viewpoint on their separate concepts.

Increasing contacts: - If they have similar interests, some students may want to exchange phone numbers. They can thus support one another in the future in one way or another.

Helpful for placements: - The technical quiz & project competition helps the students for the technical & interview rounds during placements respectively. If the students are provided with a certificate of participation or winning, then it will be a cherry on the cake.They help the students in gaining knowledge: - The students will need to thoroughly research the issues if they are presenting a technical paper since the judges will quiz them on them. Additionally, even though the students are not Wikipedia, they can still learn by encountering a variety of questions from various fields in any quiz competition.

They help the students to develop their personalities individually: - For instance, in the paper presentation, students must once again discuss their themes in front of the assessors and audience. Therefore, handling such a situation will be challenging at first, but over time, the students will grow accustomed to it and their personalities will develop as a result.

Students get experiences: - The pupils are up against a large group of peers here, both known and unknown. Additionally, during inter-college technical competitions, students have the chance to visit colleges they otherwise would not have had the chance to visit. Going there and competing against known and unknown individuals thus provides a unique

Event Title: Celebration of Women's Day.
Event Date: 8th March 2023
Event Conduction Duration: 2 hrs (3.00 PM - 5.00 PM)
Event Venue: E&TC Department, SIEM, Sandip Foundation, Nashik.
Participants: All lady faculties from SIEM, SE & TE Students from E&TC dept., SIEM, Nashik
Objectives:
UNESCO states, "International Women's Day is an occasion to celebrate the progress made towards achieving gender equality and women's empowerment but also to critically reflect on those accomplishments and strive for a greater momentum towards gender equality worldwide. It is a day to recognize the extraordinary acts of women and to stand together, as a united force, to advance gender equality around the world."
8th March, considered as International Women's Day. This day brings many things for women – a cause for celebration, a reason to pause and re-evaluate a remembrance, an inspiration, and a time to honour, loved and admired. To honour womanhood, E&TC Department of Sandip Institute of Engineering & management Nashik has celebrated the International Women's Day on 8th March, 2023 in the Sandip Institute of Engineering & management Nashik.

Event Title: Parent Meet
Event Date: 4th March 2023
Event Conduction Duration: 3 hrs
Event Venue: - SE E&TC Classroom, E&TC Dept., SIEM, Sandip Foundation, Nashik
Participants – Parents of SE, TE & BE students of E&TC SIEM
Objectives: We, the department of E&TC Engg, organized Parent meet on 4th March 2023. The objectives of this meeting is:
To discuss the academic, behavioral, and social well-being of their ward and clarify ant related queries or concern about his/her grades.
The professors of the department would like to discuss about all academic's progress of their ward in person.
Awareness about institutional/departmental activities for the benefits of their ward.

One Week FDP on Recent Trends in Antennas for Multifield Application.

Event Title: One Week FDP on Recent Trends in Antennas for Multifield Application.
 Event Date: 28th Feb to 4th March 2023
 Event Conduction Duration: 10.00 am – 3.00 pm daily
 Event Venue: - Online
 Participants: - Students & faculty all over Maharashtra
 Objectives: The objective of this FDP is to introduce the fundamental principles of antenna and to apply them to the design and analysis of antenna systems
Outcome: The main objective of this workshop is to give exposure to students and researcher faculties on various types of Antennas and Antenna design software HFSS. It is conducted by the department of E&TC from 28 Feb to 4 March. Around 30 students and 25 faculty members have been participated in this workshop. The workshop has given a good insight about basic parameters of antenna, types of antennas and software tool HFSS. All the resource persons explain theory about antennas and demonstrated "how to design a microstrip antenna using HFSS" and hands-on session was conducted in the Ansys Software. Students learned to design and simulate a micro strip antenna model and observe results. This workshop also triggered students to do projects in this domain. It is helpful for the faculty who are pursuing research in anttena

Event Title: Science Day Celebration
 Event Date: 28th Feb 2023
 Event Conduction Duration: 2 hrs (3.00 PM - 5.00 PM)
 Event Venue: - TE (E&TC) Classroom, SIEM, Sandip Foundation, Nashik
 Participants – SE, TE & BE students of E & TC Department SIEM
 Objectives: Objective of the event was to get awareness about Science Day.
 Outcome:
  National Science Day is celebrated to spread a message about the importance of science used in the daily life of the people.
  To recognize and appreciate all scientific activities, efforts, and achievements

DEPARTMENT OF ELECTRONICS & TELECOMMUNICATION

• Team Newsletter •

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