Sri Venkateswara College of Engineering

Department of Electrical and Electronics Engineering

VIDYUT

SEPTEMBER 2023

OFFICIAL NEWSLETTER

VOLUME 1 | ISSUE 9 | SEPTEMBER 2023

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

NEWSLETTER

EDITORIAL TEAM

Dr. KR. Santha, Vice Principal & HOD/EEE

Dr. Sudhakar K Bharatan, AHOD/EEE

Dr. R. Karthikeyan, Associate Professor/EEE

Ms. S .Sinthamani, Assistant Professor/EEE

Mr. S. Bharadwaj, Assistant Professor/EEE

Mr. Sabari S IV year/EEE

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SRI VENKATESWARA COLLEGE OF ENGINEERING DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Vision of the Institution

To be a leader in Higher Technical Education and Research by providing the state of the art facilities to transform the learners into global contributors and achievers.

Mission of the Institution

To develop SVCE as a "CENTRE OF EXCELLENCE" offering Engineering Education to men and women at undergraduate and postgraduate degree levels, bringing out their total personality, emphasizing ethical values and preparing them to meet the growing challenges of the industry and diverse societal needs of our nation.

Vision of the Department

The vision of Electrical and Electronics Engineering Department is to provide a high standard of education in Electrical and Electronics Engineering so as to meet the industry standards through domain.

Mission of the Department

M1: To create state of the art facilities such that the students excel in Electrical and Electronics Engineering education.

M2: To equip students with a well defined curriculum to meet the requirements of Industries and society.

M3: To promote a culture of research, innovation and entrepreneurship in the thrust and allied areas of Electrical and Electronics Engineering.
M4: To inculcate soft skills and foster ethical values and shape the total personality of the students.

Program Educational Objectives (PEOs) UG-EEE

PEOI: Graduates of EEE transformed to engineering contributors in the fields of Electrical, Electronics and Computer Engineering.
PEO2: Succeed in becoming entrepreneurs through human centered design thinking and innovation.
PEO3: Become eligible to pursue higher studies in their chosen areas of engineering or management
PEO4: Effective, conscious and ethical team player in the field of green energy management and sustainability

Program Outcomes (POs) for UG-EEE

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and lead.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs) for UG-EEE

PSO1: The ability to build, implement, test and maintain analog and/or digital systems and implement Electronic control of Drives for Industrial automation and Electric Vehicle.

PSO2: The ability to analyze Power System network encompassing stability, control and protection and interconnection of Renewable Energy Sources with Micro and smart grid.

Program Outcomes (POs) for PG-PED

PO1: An ability to independently carry out research/investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

Program Specific Outcomes (PSOs) for PG-PED

PSO1: The ability to design and analyze Power Electronic converters and control of Electric drives for Industrial applications.

PSO2: The ability to apply Power Electronic Circuits in Transmission and distribution network of Power System and interconnection of Renewable Energy.

An Article by Dr. D. Amudhavalli, Assistant Professor, on "Revolutionizing Transportation"

Revolutionizing Transportation:The Autonomous Electric Vehicle

In a world where technology continually blurs the lines between science fiction and reality, autonomous vehicles stand as a testament to human innovation and ingenuity. These self-driving marvels, once confined the realm of futuristic movies, are no longer a distant dream but a tangible reality. Autonomous equipped with fully automated driving systems, have the potential to reshape the way we perceive and with transportation.

Figure 1 Autonomous Vehicle

At the heart of autonomous vehicles lies a symphony of cutting-edge technology. Sensors, actuators, complex algorithms, machine learning systems, and powerful processors come together to orchestrate the intricate dance of these vehicles on our roads. They mimic human decision-making but with a level of precision and consistency that humans can only aspire to achieve. Imagine a future where you can sit back, relax, and let your vehicle navigate the intricate maze of traffic, respond to external conditions, and ensure a safe and efficient journey. It's a future where the stress of daily commuting may become a relic of the past.

Figure.2 Future Autonomous vehicle will provide comfort, safe and efficient journey.

Quality of Life Enhancement: The benefits of autonomous vehicles extend far beyond mere convenience. Consider those who, due to age or physical limitations, cannot operate traditional internal combustion engine (ICE) vehicles. For them, autonomy represents newfound independence, a gateway to mobility that was previously out of reach. Moreover, autonomous vehicles have the potential to revolutionize the quality of our daily commutes. They promise greater efficiency on the road, minimizing the frustration of gridlock and reducing instances of road rage. These improvements translate into a smoother and more pleasant driving experience for all.

Environmental Stewardship: While the quality-of-life enhancements are compelling, the environmental implications are equally profound. Autonomous vehicles, especially when electrified, have the potential to be game-changers in the fight against climate change. They offer a clear path to reducing carbon dioxide (CO2) emissions, a significant contributor to global warming. Step into the realm of the Institute for Transportation & Development Policy (ITDP), envisioning a future that's greener and more efficient. ITDP envisions a scenario where three key trends—vehicle automation, vehicle electrification, and ridesharing—converge to deliver remarkable results. By 2050, this convergence could reduce traffic congestion by 30%, slash transport costs by 40%, and achieve an astonishing 80% reduction in urban CO2 emissions.

The Electric Platform Advantage: As we delve deeper into the inner workings of autonomous vehicles, a critical factor emerges: the choice of an electric platform as their foundation. Klaus Küng, the Senior Director of Transport & Mobility Industry at Dassault Systèmes, provides insights into the multitude of advantages that electric platforms bring to the table. "Let me start with the noise benefits," Küng begins, highlighting one of the most significant advantages of electric vehicles over their ICE counterparts. Electric vehicles operate with a remarkable silence, a stark contrast to the rumble of internal combustion engines. This lower noise profile plays a pivotal role in enhancing the vehicle's sensor capabilities, enabling it to detect surrounding objects with greater precision. In the world of autonomous vehicles, where perception and decision-making hinge on sensor data, this noise reduction is paramount.

But the advantages of electric platforms don't stop at noise reduction. These platforms offer a lower center of gravity, rendering the vehicles more stable and easier to control. With higher torque, they are primed to handle and react to unexpected traffic changes swiftly. Reduced noise, lower emissions, and lower maintenance costs further sweeten the deal. Electric platforms are fully equipped to meet the demands of autonomous vehicles, making them an ideal foundation for this technological revolution.

Overcoming Challenges: Battery Capacity and Complex Architecture: However, as with any technological leap, challenges abound. One significant hurdle is the need for robust battery capacity. Autonomous electric vehicles require powerful batteries to ensure sustained operation. The race for materials, supply chain management, and production capacity in the electric vehicle sector is fierce. Quality assurance in production becomes paramount to meet these demands. Küng emphasizes another critical challenge: managing the complexity of electric vehicle architecture. Coordinating requirements, regulations, and energy management in an efficient manner requires sophisticated design software. In this regard, Dassault Systèmes' 3DEXPERIENCE Platform plays a pivotal role, offering a robust solution to tackle the intricate web of dependencies in electric vehicle design.

"Additionally," Küng adds, "to extract the maximum potential from this complex architecture, rigorous testing and simulation are essential. Beginning with virtual testing and gradually incorporating physical components, this approach not only maximizes performance but also minimizes development timelines and costs. Ultimately, this benefits the end customer and drives the adoption of autonomous electric vehicles."

Data and the Cloud: The Brains of Autonomous Vehicles: As the mathematician Clive Humby aptly puts it, "Data is the new oil." In the world of autonomous vehicles, data is not just valuable; it's indispensable. These vehicles rely on a constant influx of data from sensors, actuators, algorithms, and processors to function effectively. On average, they process a staggering 4TB of data daily, allowing them to see, sense, map, identify parameters, and communicate with other vehicles.

Figure 3. IoT makes Smart cars even more connected

Küng sheds light on the exponential surge in data generation within the automotive industry. This surge, driven by electric vehicles, new software architectures, and evolving business models, is changing the way vehicles are developed and maintained. Feedback-driven prioritization allows manufacturers to offer additional features through over-the-air (OTA) updates, enhancing the functionality of autonomous vehicles continuously.

To navigate this data-driven landscape effectively, autonomous vehicle manufacturers are delving into the world of cloud technology. OTA updates, some as frequent as daily, are becoming the norm, reducing maintenance costs, and extending the lifecycle of vehicles. Cloud technology's scalability and flexibility enable manufacturers to adapt swiftly to new demands and emerging business models.

Autonomous Vehicles: The Numbers Speak: The growth of the autonomous vehicle industry is undeniable. In January 2023, Mercedes-Benz became the first U.S. car manufacturer to receive government approval for a level three driving feature, marking a significant milestone in the industry's evolution. Globally, the sector is expanding at a remarkable rate, with an annual growth rate of 16%. The current market valuation of US$54 billion underscores the immense potential of this industry. Moreover, public perception of autonomous vehicles is evolving rapidly. A significant 55% of Americans believe that most cars will be self-driving by 2029. As technology continues to advance and public awareness grows, we can expect these numbers to rise.

A Glimpse into the Future: As we reflect on the landscape of autonomous electric vehicles, it becomes clear that we stand on the brink of a transportation revolution. The fusion of autonomy and electrification is poised to redefine the way we move, offering efficiency, environmental stewardship, and convenience on an unprecedented scale. Klaus Küng leaves us with an exciting promise: "We will see over the coming years a lot of evolutions and even revolutions; it is going to be an exciting time for the industry." Indeed, the road ahead is paved with innovation and possibility, ushering in an era where the future of transportation is no longer a vision but a reality.

Reference

EV Magazine. (2023, September). Title of the article. *EV Magazine*, 42.

STUDENT ACHIEVEMENTS

- Mr. Infant Vimal, part of the Tennis (Men) team made a wonderful effort to secure Runners up position in the Anna University zonal tournament held at College of Engineering,Guindy on 30th September 2023.

- Mr. Srinivasan V of III year of EEE Department participated in Chess (Women & Men) team gave a good fight and managed the Runners up trophy(W) and Third position(M) in the Anna University zonal tournament organized by Saveetha Engineering College on 23/09/2023.

WOMEN- RUNNERS

MEN-THIRD

- Mr.Sharathkumar V G, Mr.Naveen kumaar K and Mr. Sanjay K attended the symposium "KARUVINGYAN" organized by the department of EIE and ICE in St. Joseph College of engineering on 02/09/2023. They participated and placed 1st in DEBUGON with a cash award of Rs.3000.


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St. JOSEPH'S COLLEGE OF ENGINEERING
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St. Joseph's Group of Institutions
OMR, Chennai - 119
30
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Certificate of Merit 2023 - 2024
Title of the Symposium : KARUVINGYAN'23
Name of the Student : V.G. SHARATHKUMAR
Name of the College : SRI VENKATESWARA COLLEGE OF ENGG
Organising Department : EIE & ICE
Event : DEBUGON
Position : 1st
Date : 02.09.2023
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B. Shashi Sekar, M.Sc.,
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S. Jessie Priya, M.Com.,
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Title of the Symposium : KARUVINGYAN'23V.
Name of the Student : K.SANJAY
Name of the College : SRI VENKATESWARA COLLEGE OF ENGG
Organising Department : EIE & ICE
Event : DEBUGON
Position : 1st
Date : 02.09.2023
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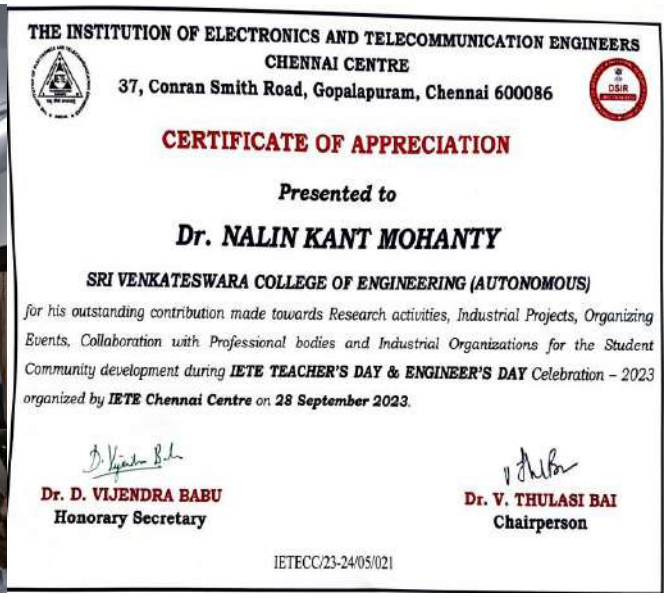
Chairman

- **Students Higher Studies Fair**

'Study Australia higher studies fair' was conducted at hotel Taj Coromandel Chennai on 12th September, 2023, to guide students interested to do higher studies in Australia. Students from various colleges across Chennai attended this event. Ten students from EEE and a total of 160 students from all departments of SVCE attended this event. They were accompanied by Prof. Muraleedharan, chief placement coordinator, Dr. KS Badrinathan, Dean (educational development) and respective department placement coordinators. Dr. Naveen Kumar E, AP/EE, Dept Placement coordinator, accompanied the students of EEE.

FACULTY PARTICIPATIONS

- Dr. NK Mohanty ,professor, Department of EEE, received "**Certificate of Appreciciation"** , from IETE Chennai center, for contribution towards research activities , Industrial projects, collaboration with professional bodies etc in the **Teacher's Day and Engineers Day Celebration on 28th September 2023**



THE INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERS
CHENNAI CENTRE
37, Conran Smith Road, Gopalapuram, Chennai 600086

CERTIFICATE OF APPRECIATION

Presented to

Dr. NALIN KANT MOHANTY

SRI VENKATESWARA COLLEGE OF ENGINEERING (AUTONOMOUS)

*for his outstanding contribution made towards Research activities, Industrial Projects, Organizing Events, Collaboration with Professional bodies and Industrial Organizations for the Student Community development during **IETE TEACHER'S DAY & ENGINEER'S DAY** Celebration – 2023 organized by **IETE Chennai Centre** on **28 September 2023**.*

Dr. D. VIJENDRA BABU
Honorary Secretary

Dr. V. THULASI BAI
Chairperson

IETECC/23-24/05/021

- Dr. NK Mohanty ,professor, Department of EEE, received **"Momento of Gratitude**" , for addressing the freshers **" Yoga and Meditation**" in the induction programme on 20th September 2023

- Dr. NK Mohanty ,professor, Department of EEE, reviewed the research paper of the international Journal Micromachines, MDPI.

REVIEW CONFIRMATION CERTIFICATE

We are pleased to confirm that

Nalin Mohanty

has reviewed 4 papers for the following MDPI journals in 2023:

Micromachines, Sustainability, Applied Sciences

Shu-Kun Lin

Dr. Shu-Kun Lin, Publisher and President
Basel, 13 September 2023

- Dr. VENKATESAN C, have successfully completed the Energy Literacy Training (ELT) organized by AICTE in collaboration with the Energy Swaraj Foundation on 9th September, 2023.

Energy Swaraj Foundation
Energy by Locals for Locals

HONOR CODE: ELT23-9-867c

CERTIFICATE

OF ENERGY LITERACY

THIS CERTIFICATE IS PRESENTED TO

VENKATESAN C

has successfully completed the course spanning over 12 modules. The training helps people in understanding energy, its generation, consumption, wastage, carbon footprint, impact on the environment, means to avoid and minimize energy usage, alternative energy solutions, ways to become carbon neutral, misconceptions on solar energy, and approach to adopt solar energy solutions. This training is a part of the "ENERGY LITERACY TRAINING " of the Energy Swaraj Foundation.

09-09-2023

Date

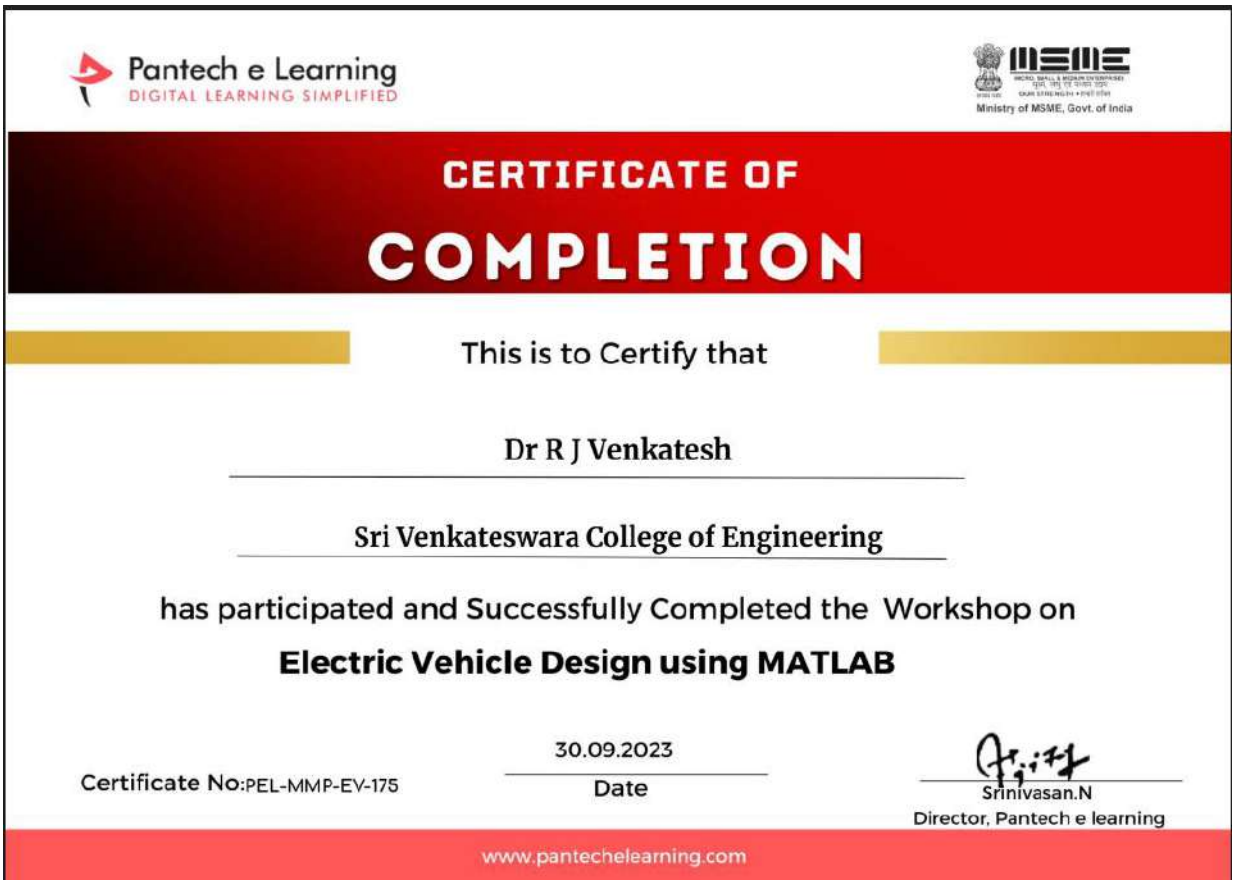
Prof. Chetan Singh Solanki

Funding Partners

Coal India Limited

The authenticity of this certificate can be validated at https://www.es-pal.org/verifyCertificate

- Dr R J Venkatesh, attended a one-day workshop -Electric Vehicle Design using MATLAB on 30.09.2023 at Pantech E Learning, Chennai.



Pantech e Learning
DIGITAL LEARNING SIMPLIFIED

Ministry of MSME, Govt. of India

CERTIFICATE OF
COMPLETION

This is to Certify that

Dr R J Venkatesh

Sri Venkateswara College of Engineering

has participated and Successfully Completed the Workshop on

Electric Vehicle Design using MATLAB

Certificate No:PEL-MMP-EV-175

30.09.2023
Date

Srinivasan.N
Director, Pantech e learning

www.pantechelearning.com

PROPOSAL SUBMITTED

- Submitted Proposal to AICTE Sponsored ATAL FDP on Energy storage - Rs.3,50,000/- Coordinator: Dr.C.Gopinath, Co-Coordinator: Dr.T.Annamalai

- Submitted Proposal to TNSCST Science & Technology - Projects: "Futuristic EV Charging Paradigm: Intelligent Predictive Charging System for Optimal Grid Integration and User Interface" - Rs.4,95,000/- Dr.C.Gopinath (PI), Dr.R.Kannadasan (Co PI)

- Nominated to apply for AICTE National Teachers Award 2023, Dr. N.K. Mohanty, Dr.C.Gopinath and Dr.R.Kannadasan

- Submitted a Proposal: Product for the 'Exhibition of IP Driven Cutting-Edge Technologies and Solutions: KALAM Program of IP Literacy and Awareness (KAPILA), Ministry of Education's Innovation Cell, AICTE, New Delhi.

- Submitted Proposal to DRDO "Design and Development of Avalanche Detection and Alert System using Wireless Sensor Networks" - Rs.14,78,400/- Dr.C.Yaashuwanth (PI), Dr.C. Gopinath(Co PI)

ATAL Schools' Exposure Visit to SVCE

Students from schools in and around Sriperumbudur visited our college for an exposure visit as part of IIC SVCE ATAL school activity program on 1st September, 2023. Dr.K.Sudhakar Bharathan ,Prof/EEE, briefed them about the facilities available in the iNRC(Interdisciplinary Nano Research Centre), SVCE. Several school students participated and benefited from this program.

EVENTS ORGANIZED BY INSTITUTE OF ELECTRICAL AND ELECTRONIC ENGINEERS(IEEE-SB)

- **IEEE-SB Inauguration for academic year 2023-24**

On the 21st of September 2023, the IEEE SVCE Student Branch held its inaugural ceremony to officially introduce the Office Bearers for the academic year 2023-2024. Chief Guest for the day was Wg Cdr P Madhusoodhanan, Vice President of Aerospace and Defence at TIDCO, Chennai. Chief Guest took the stage to deliver an insightful and enlightening talk on "Engineering Trends in the Aerospace and Defense Sector." His expertise and experience in the field provided students with invaluable insights into cutting-edge developments and pivotal aspects of the industry. The office bearers of the IEEE Student Branch of the year 2023-2024 were introduced and were bestowed with the responsibility.

EVENTS ORGANIZED BY INDIAN SOCIETY FOR TRAINING & DEVVELOPMENT ISTD-SVCE

- **One Day Workshop on Goal Setting and Time Management**

On September 21 st , 2023, the ISTD Student Chapter SVCE hosted a one-day workshop on Goal Setting and Time Management. The workshop featured an insightful session led by Arunodaya L A, a renowned Behavioral Coach known for her expertise in personal development and goal achievement. It equipped students with invaluable skills to enhance their academic and personal lives.

Student Induction Program (SIP) for 2023-27 Batch

On the 11th September,2023 Student Induction Program was conducted for the 2023 admitted batch at Software lab first floor EEE, block.

The moments captured during the address by HOD/EEE

The moments captured during Diagnostic test on 12th September 2023

Board of Studies Meeting

The Board of studies meeting for the Academic year 2023-24 for Electrical and Electronics (EE) and Electronic and Communication (EC) Engineering, was held on 19.09.2023 Tuesday at Software lab first floor EEE, block.

INDUSTRIAL VISIT

Students of II year EEE visited NCTPS (North Chennai Thermal Power Station), Athipattu, Chennai. The batch A students went on the industrial visit on 14th sept, 2023. They were accompanied by Assistant Professors, Mr. V. Karthikeyan and Mr. S. Bharadwaj. The batch B students went on the industrial visit on 15th sept, 2023. They were accompanied by Assistant Professors, Mr. Ranjith kumar and Mr. Naveen kumar.

They were welcomed by Mr**.** Chandramohan, Power plant engineer, NCTPS. The students had a brief lecture in the function hall where he explained about the layout of the plant, the function of each and every component in it. He raised some fundamental questions to the students to which students participated enthusiastically. He also discussed the working of generators, boilers, turbines. He then took the students inside the plant and carefully explained the working of each section of the plant. The students observed keenly and clarified their doubts.


2023.09.15 12:43


GPS Map Camera
Puzhuthivakkam, Tamil Nadu, India

PARENT-TEACHER MEET

Parents Teachers Meeting For Senior Students (Academic Year 2023 - 24) was held on 23rd September 2023

HACKATHON

The Ministry of education's innovation cell is conducting the Smart India Hackathon 2023. To nominate teams from SVCE, The Internal Hackathon was conducted by our college from 23rd to 24th September 2023 at multipurpose hall. Several teams from the department of Electrical and electronics engineering participated and presented their innovative ideas and prototypes.

Social Justice Pledge

The Faculty and Supporting staff members of the Dept of EEE administrated the Social Pledge on 15th September, 2023.

ALUMNI FEEDBACK:

Ms.S. Gayathri,
M.E, PED alumnus,
(Batch 2019-21)
Associate Engineer,
Larsen and Toubro Construction(Power transmission & Distribution), Chennai.

Studying at SVCE boosted my self confidence and helped me to develop my individuality. Apart from teaching, the friendly approach from my professors helped me a lot. Whether it can be clearing subject doubts or some guidance for my career growth. Not only that, the way technical people(lab technicians) guided me in lab practicals and explained everything in such a way that I was not able to forget the concepts of the experiment. Even if it's the fundamentals, it is really helpful for my work nature.