



ERODE SENGUNTHAR ENGINEERING COLLEGE



(An Autonomous Institution)

(Approved by AICTE, New Delhi Permanently Affiliated to Anna University - Chennai)

Accredited by NAAC & National Board of Accreditation (NBA), New Delhi.)

PERUNDURAI, ERODE – 638 057

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Vision

- ✦ To provide competent and ethical electrical engineers finding solution to problem related to society, environment and industry using innovative technologies.

Mission

- ✦ To make a positive difference among electrical and electronics engineering students through innovative teaching learning methods
- ✦ To provide electrical and electronics engineering knowledge base at large for the upliftment of different background people
- ✦ To instill research oriented mindset and to develop well-furnished electrical and electronics engineering research labs
- ✦ To inculcate the moral and ethical values among students in order to make them competent and quality electrical and electronics engineers

Program Educational Objectives (PEOs)

- ✦ **CORE COMPETENCE:** To impart fundamental electrical and electronics engineering knowledge through collaborative and case study methods of teaching learning process
- ✦ **BREADTH:** To produce quality electrical and electronics engineering graduates with in-depth technical knowledge including current issues and challenges in this field
- ✦ **LEARNING ENVIRONMENT:** To develop and enhance research based facilities so as to address the industrial issues and challenges
- ✦ **PROFESSIONALISM:** To imbibe effective communication, interpersonal and other managerial skills for the holistic development of EEE students

Program Outcomes (POs)

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 or 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 leader in a team, to manage projects and in multidisciplinary environments.
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)

PSO1: Real World Knowledge- Apply the knowledge in solving the real time problems and solutions to issues and challenges in Electrical and Electronics Engineering technologies.

PSO2: Interdisciplinary Skill- Design and develop interdisciplinary and innovative system.

PSO3: Personality Development – Imparting effective communication, team work and leadership skills for a successful career in industry and R&D.

ASSOCIATION ACTIVITIES



The inauguration of EEE association (DYNAFEST 2024-25), IE(I) Student Chapter and IEEE student branch activities for the academic year 2024-25 was held on 12.09.2024. Mr. T. RaviSankar, Planning Engineer, Nuclear Power Corporation of India Ltd, KKNPP (UNIT 1-6) inaugurated EEE association, IE (I) Student Chapter and IEEE student branch activities. Also delivered a Guest lecture on the topic "Scope of after GATE Exam in Engineering". More than 150 students were participated in this function.



Seminar on the topic "Embedded system and Artificial Intelligence For Real time Applications" was conducted on 23.09.2024. Mr. K. S. Kavin, Managing Director, AB Technologies, Chennai was the resource person. More than 200 students were participated in this function.



Awareness Program on the topic "CYBER CRIME AND POCSO" was conducted on 19.09.2024. Tmt. B. chithra, Advocate, Perundurai. Tmt. S. Priya, Advocate, Perundurai. Mr. S. Nesamani, Advocate, Perundurai. Tmt. V. Sri Devi, Social Activist and legal work Volunteer was the resource person. More than 200 students were participated in this function.



Guest lecture on the topic “LT Billing software in TNPDC” was conducted on 04.10.2024. Mrs.T. Vijayalakshmi, BE., M.E., MSc(IT). Assistant Executive Engineer (TNEB), Erode was the resource person. More than 200 students were participated in this function.

CAREER GUIDANCE ACTIVITIES



Global Pathway Program on “Global Pathways: Pursuing Higher Education in India and Abroad” was conducted on 04.10.2024. Ms.Hemavathy, Branch Manager, Bluestone Overseas Consultants, Coimbatore was the resource person. More than 200 students were participated in this function.

STUDENTS PARTICIPATIONS IN INTER-INSTITUTE EVENTS

S. No.	Name Of The Student / Year / Semester	Name of the Event	Title of the Paper	Name of the Institution organized	Prize	Date
1	Tamilselvan , II/III T	Pick and Win	-	KSR College of Technology, Tiruchengode	III Prize	28.09.2024
2	Arinseyan A, III/V	Project Presentation	Organic Air Coolant	KSR College of Technology, Tiruchengode	II Prize	28.09.2024
3	Nithees Kumar M G, III/V	Project Presentation	Organic Air Coolant	KSR College of Technology, Tiruchengode	II Prize	28.09.2024

4	Deepak K, II/III	Innovation Fair	-	Sasurie College of Engineering, Vijayamangala m	II Prize	26.10.2024
5	Gokul G, II/III	Workshop	Data Analytics Using Statistical Tools	Karpagam College of Engineering, Coimbatore.	National	17.10.2024
6	Puvanesan R M Deepa V Keerthana S Santhosh M Rohith P III/V	Workshop	Embedded Systems Architecture and ARM Processor	Vellore Institute of Technology, Vellore	National	30.08.2024
7	PujaSri N II / III	Training Programme	Gen-AI with Cloud	Kongu Engineering College, Perundurai	National	05.10.2024
8	Vetri Selvan V	Workshop	Data Analytics Using Statistical Tools	Karpagam College of Engineering, Coimbatore	National	17.10.2024
	Umanath S II / III					
9	Kannan A Logesh R Kavin C Harish Kumar U Kanimozhi M II / III	Workshop	RMSUER- 2024	Erode Sengunthar Engineering College, Perundurai	National	02.09.2024 - 06.09.2024
10	Kishore M Gokul G II / III	Workshop	Integration of AI and IIoT for Design of Solar Powered electric Vehicle Charging	Erode Sengunthar Engineering College, Perundurai.	National	23.09.2024 - 28.09.2024

			Infrastructure for Green Future			
11	Gokul G	Workshop	Advanced 3D Printing	Kongu Engineering College, Perundurai	National	09.10.2024
12	Gokul G VetriSelvan V Umanath S II / III	Workshop	Data Analytics Using Statistical Tools	Karpagam College of Engineering, Coimbatore	National	17.10.2024
13	Gokul G II / III	Workshop	Open AI and Prompt Crafting	Kongu Engineering College, Perundurai	National	19.10.2024
14	Umanath S Vetriselvan V Gokul G II / III	Workshop	IoT and Embedded System	Government College of Engineering Erode	National	21.10.2024

Paper / Project Presentation Details

S. No.	Name Of The Student	Year / Semester	Name of the Event	Title of the Paper/Project	Name of the Institution organized	National / International Level	Date
1	Nithees kumar M G	III/V	Renewable Energy Day Project Presentation	Solar Power Bank	SSM College of Engineering Komarapalayam	National	20.09.2024
2	Arinseyan A						
3	Thomas Raj A						
4	Dharsan M						
5	Naveen Bairavan B	III/V	Renewable Energy Day Project	Solar Tree	SSM College of Engineering Komarapala	National	20.09.2024
6	SaranRaj M						

7	Sriram T		Presentati on		yam		
8	Anish P	III/V	Renewable Energy Day Project Presentati on	Solar Automatic Dustbin	SSM College of Engineering Komarapala yam	National	20.09.2024
9	Athisayaraj M	III/V	Renewable Energy Day Project Presentati on	Solar Automatic Dustbin	SSM College of Engineering Komarapala yam	National	20.09.2024
10	Mahaprabhu R						
11	Nishanth V						
12	PujaSri N	II/III	SPRING FEST- 2K24 Project Presentati on	Motion Sensor	KSR College of Engineering, Thiruchengo de.	National	28.09.2024
13	Tamilselvan T	II/III		Solar Refrigerator			
14	Dharsan M	II/III		Lineman Safety			
15	Arinseyan A	III/V		Organic Air Coolant			
16	Nithees kumar M G	III/V					
17	Gokul G	II/III	MXCEL- 2K24 Paper Presentati on	-	Kongu Engineering College, Perundurai	National	09.10.2024
18	Narmatha M	II/III	TECHF NIX 24 Paper Presentati on	-	Paavai Engineering College Namakkal	National	08.11.2024 & 09.11.2024
19	Kanimozhi M						
20	Santhosh V						
21	Kishore M						
22	Suryaprakash M						

Technical and Non-Technical Events Details					
S. No.	Name of The Student	Year / Semester	Name of the Technical Event attended	Name of the Institution organized	Date
1	Thomasraj A	III/V	Mobile Photography	KSR College of Technology, Tiruchengode	26.09.2024
2	Tamilselvan T	II/III	Pick and Win	KSR College of Technology, Tiruchengode	28.09.2024
3	Gokul G	II/III	Lets Vibe	Kongu Engineering College, Perundurai.	09.10.2024
4	Tamilselvan T	II/III	Tech Interrogate & E-Games	Sasurie College of Engineering, Vijayamangalam	26.10.2024
5	Monish S	II/III	Innovation Fair & E-Games	Sasurie College of Engineering, Vijayamangalam	26.10.2024
6	Deepak K	II/III	Innoyation Fair	Sasurie College of Engineering, Vijayamangalam	26.10.2024

FACULTY PUBLICATIONS

S.No.	Name of the Faculty	Title of the Paper	Journal Name	Publication Details
Academic Year 2024-25				
1	Dr.P. Selvan	Convolutional Neural Network based Attack Detection for Secure Data Transmission in the Internet of Things	Journal of Environmental Protection and Ecology	Vol.25, Issue No.5, pp. 1371-1383, 2024.

2	Dr.P. Selvan	Cybersecurity and Artificial Intelligence for Predicting Crime Rates	Journal of Environmental Protection and Ecology	Vol.25, Issue No.5, pp.1395-1404, 2024.
3	Dr. R. Muthukumar	Machine Learning applications for predicting system production in renewable Energy	International journal of power electronics and drive systems	Vol.15, Issue No.3, Sep 2024, Doi:10.11591/ijpeds.v15.i3.
4	Dr. R. Muthukumar	Design and Development of Dual Band Millimeter Wave Substrate Integrated Waveguide Antenna Array	Measurement Science Review	Vol. 24, (2024), Issue No. 3, 100-104. DOI: 10.2478/msr-2024-0014.
5	Dr. R. Muthukumar	Leveraging Fuel Cell Technology With AI and ML Integration for Next-Generation Vehicles: Empowering Electric Mobility	A Sustainable Future with E-Mobility: Concepts, Challenges, and Implementations	DOI: 10.4018/979-8-3693-5247-2.ch016
6	Dr.R. Muthukumar	AQU-FRC Net: Automated Soil Prediction Based on Faster RCNN with Aquila Optimization	Journal of Intelligent & Fuzzy Systems	DOI: 10.3233/JIFS-230408 vol. 46, no. 1, pp. 167-180, 2024
7	Dr.R. Muthukumar	Development of Millimeter Wave Communication Using Dielectric Resonator Antennas Using Substrate Technology,"	2nd World Conference on Communication & Computing (WCONF), RAIPUR, India	DOI: 10.1109/WCO NF61366.2024 .10692144. pp. 1-6, 2024.

		2024		
8	Dr.R. Muthukumar	Development of an IoT-Enabled Smart Drainage and Health Monitoring System for Enhancing Safety and Efficiency of Manual Scavengers	7th International Conference on Circuit Power and Computing Technologies (ICCPCT), Kollam, India, 2024	pp. 1835-1840, doi: 10.1109/ICCPCT61902.2024.10672899.
9	Dr.R. Muthukumar	Enhancing sustainability and energy efficiency in wireless communication systems through integrated renewable-powered antenna design	Journal of Environmental Protection and Ecology	Vol. <u>25(6)</u> (2024) Pages: 1956 – 1968. https://scibulcom.net/en/article/d1vmwxi2wLly6t9pRIB
10	Dr.L.Anbarasu	Use of Block chain for IoT Applications Platforms, Systems, and Frameworks	Journal of Environmental Protection and Ecology	Vol.25, No. Issue 5, pp.1361-1370,2024.
11	Dr. L. Anbarasu & Dr.M. Shyamalagowri	Evolving Power Factor Correction in Solar Water Pumping Systems through Zeta Converter-Based BLDC Motor Drives	Journal of Electrical Systems	<u>Vol. 20 No. 6s (2024)</u> https://journal.esrgroups.org/jes/article/view/3286
12		Synergizing Battery-Powered Permanent Magnet Synchronous Motor Control	Journal of Electrical Systems	<u>Vol. 20 No. 6s (2024)</u> https://journal.esrgroups.org/jes/article/view/3285

		with Integrated Modular Multilevel Converter Systems		
13	Dr. A. Johnny Renoald	Enhancing energy efficiency in power looms: utilizing regression machine learning for electro-kinetic energy assessment	The Journal of The Textile Institute	Published online: 24 Jun 2024. https://doi.org/10.1080/00405000.2024.2365753
14	Mr.E. Immanuel Bright	An Efficient Grid Integrated Hybrid Renewable Energy System with Battery Storage Using SEPIC Converter	International Journal of Electrical and Electronics Engineering	Vol. 11(9), 2024. DOI:10.14445/23488379/IJE-EE-V11I9P130.
15	Ms.N. Jothipriya	FOPID controlled indirect matrix converter for wind energy conversion system	7th international IEEE conference (ICCPCT)	Doi:10.1109/ICCPCT61902.2024.1067268
16	Ms.K.Preetha	Improved binary quantum-based Elk Herd optimizer for optimal location and sizing of hybrid system in micro grid with electric vehicle charging station	Journal of Renewable Sustainable Energy	Vol. 16, 064101 (2024) https://doi.org/10.1063/5.0220051 .
17	Mr. E. Immanuel Bright & Dr. R. Muthukumar	Performance improvement of grid-connected	Electrical Engineering	https://doi.org/10.1007/s00202-024-02884-w

		PV systems using modified Cuk-Landsman converter and hybrid PI controller strategy.		
18	Dr. P. Karuppusamy	Microcontroller-Based Switching for Cost-Effective Load Management and Industrial Automation	Journal of Electrical Engineering and Automation	Vol. 6, no. 3 (2024): 270-279. DOI: 10.36548/jeea.2024.3.007

FACULTY PRESENTATION IN NATIONAL / INTERNATIONAL CONFERENCE

S. No.	Name of the faculty	Name of the Conference	Paper presented on (Topic)	Venue	Date
Academic Year 2024 - 25					
1	Dr.P. Selvan	2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024)	AI-based control system for wireless EV charging With real-time battery monitoring and management.	Dayananda Sagar College of Engineering, Bengaluru.	13.12.2024 – 14.12.2024
2	Dr.L.Anbarasu	2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024)	AI based system for real time electric theft Identification	Dayananda Sagar College of Engineering, Bengaluru.	13.12.2024 – 14.12.2024

3	Dr. A. Johnny Renoald	2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024).	Real-Time Monitoring And Alert System For Earthing Integrity In Electrical Installations	Dayananda Sagar College of Engineering, Bengaluru	13.12.2024 – 14.12.2024
4	Dr. A. Johnny Renoald	International conference on recent advances in science and engineering Technology	An intelligent power management control scheme for a 9 bus grid.	Adichunchanagiri University, Organized IEEE conference Bangalore section.	21.11.2024 - 22.11.2024
5	Ms.K.Preetha	2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024)	Soft Switching Converter based EV Fast Charging Station Deploying Sustainable Energy.	Dayananda Sagar College of Engineering, Bengaluru .	13.12.2024 – 14.12.2024
6	Mr.P.Karthikeyan	2nd International Conference on Intelligent and Sustainable Power and Energy Systems (ICISPES-2024)	Battery management system for electric vehicle using AI.	Dayananda Sagar College of Engineering, Bengaluru	13.12.2024 – 14.12.2024
7	Ms.S.Tamilselvi	International Conference on Power Electronics and Renewable Energy Systems ICPERES - 2024	Intelligent Transformer monitoring system	Rajalakshmi Engineering College, Chennai	20.12.2024 – 21.12.2024

8	Mr.E.Immanu vel Bright	International Conference on Power Electronics and Renewable Energy Systems ICPERES - 2024	Current Protection based high gain DC – DC converter for EV charging application	Rajalaksh mi Engineeri ng College, Chennai	20.12.20 24 – 21.12.20 24
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FACULTY PUBLICATIONS IN BOOK / BOOK CHAPTER

S.No.	Name of the faculty	Name of the Book / Book Chapter	Publication Details
Academic Year 2024-25			
1	Dr. M.Shyamalagowri	Nano coating for energy generation and conservation	Recent Trends in Multidisciplinary Research 978-1-304-61718-7
2	Dr. M.Shyamalagowri	Advancements in sustainable food packaging: Biodegradable Nano coating for enhanced preservation and protective functions	Recent Trends in Multidisciplinary Research 978-1-304-61718-8
3	E.Immanuvel Bright	Design of PMBLDC Motor For High-Speed Electrical Application	Futuristic Trends in Electrical Engineering e- ISBN: 978-93- 6252-001-2 IIP Series, Volume 3, Book 1, Part2, Chapter 2

Dr P Selvan and Dr L Anbarasu

Chief Editors

ESEC EEE Newsletter

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