SANTHIRAM ENGINEERING COLLEGE
(AUTONOMOUS)
Nandyal - 518501, Nandyal Dist., Andhra Pradesh
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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SPECTRUM

Signals of Innovation, Waves of Excellence

ECE DEPARTMENT NEWSLETTER | VOLUME 4 | ISSUE 1 | ACADEMIC YEAR 2023-24

IGNITING IDEAS, EMPOWERING FUTURES.

Driving innovation in Electronics & Communication Engineering for a smarter, connected tomorrow.



TECHNOLOGY
Emerging Technologies

COMMUNICATION
Wireless & Networks

INNOVATION
Research & Projects

ACHIEVEMENT
Student Success

ECE DEPARTMENT NEWSLETTER

TECHNOLOGY • COMMUNICATION • INNOVATION • ACHIEVEMENT

IGNITING IDEAS, EMPOWERING FUTURES



SANTHIRAM ENGINEERING COLLEGE
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NANDYAL, ANDHRA PRADESH
AY 2023-24 | JAN - MAR 2024

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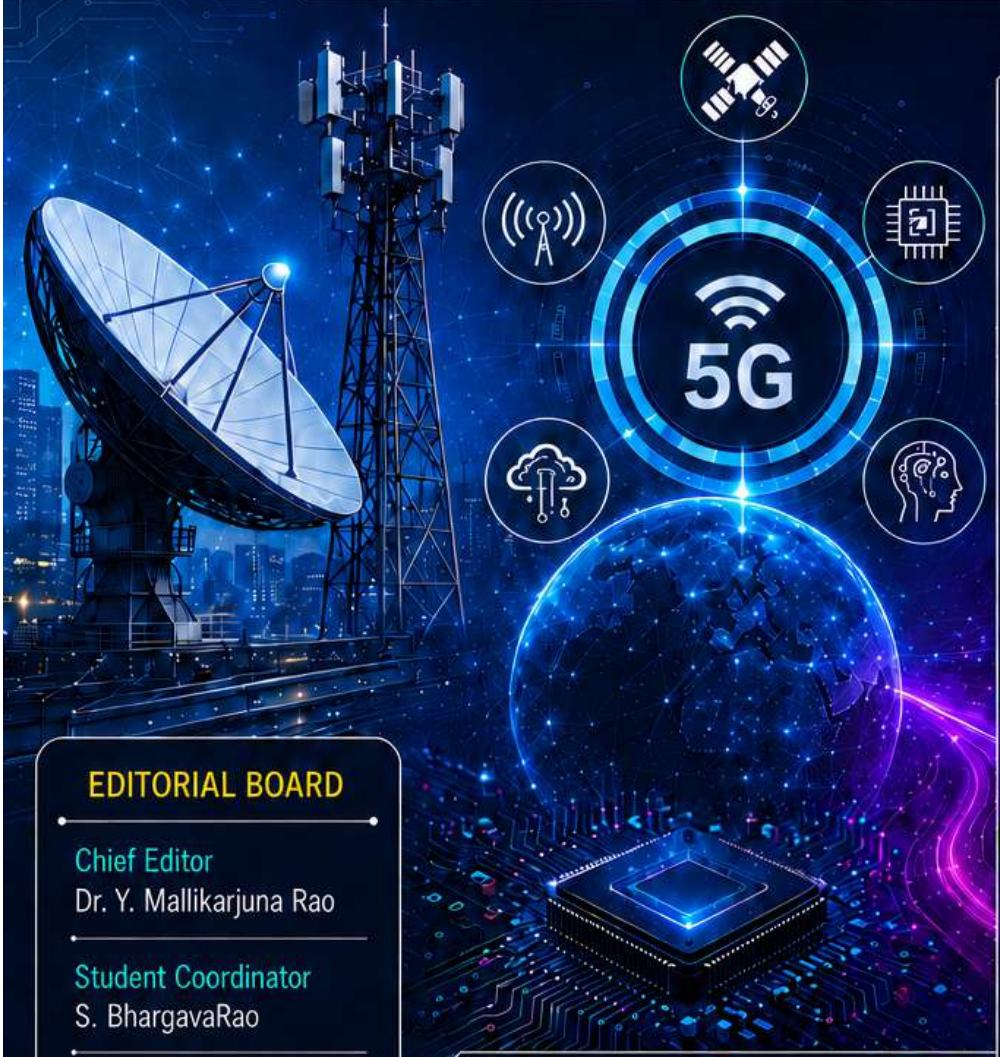

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ABOUT THE COLLEGE



Santhiram Engineering College (SREC), Nandyal, sponsored by M/s Sri Shirdi Sai Educational Academy, was established in 2007 under the able guidance of Dr. M. Santhiramudu, Chairman, with the noble motto "Education for Peace and Progress." The institution is autonomous from the academic year 2023–24 and is accredited by NAAC with Grade A (3.2/4.0) and by NBA for its B.Tech. programmes in ECE and CSE. Approved by AICTE, New Delhi, recognised by UGC under Sections 2(f) and 12(B), and permanently affiliated to JNTUA, Ananthapuramu, SREC is also a recognised research centre and spot evaluation centre of JNTUA. Spread across a serene 10.5-acre green campus, the college offers digitally equipped classrooms, state-of-the-art laboratories, quality research, publications, patents, funded projects, excellent placement opportunities, and secure hostel facilities for both boys and girls. With 19 years of academic excellence, University Gold Medals, State Prathibha Awards, and a wide range of undergraduate, postgraduate, MBA, and MCA programmes, SREC continues to nurture competent, innovative, and socially responsible professionals.



VISION

To become a nucleus for pursuing technical education and pool industrial research and developmental activities with social-conscious and global standards.



MISSION

To provide Advanced Educational Programs and prepare students to achieve success and take leading roles in their chosen fields of specialization by arising a self-sustained University.

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ABOUT DEPARTMENT



Anticipating the growing importance of electronics and wireless communication in modern society, the Department of Electronics and Communication Engineering was established in 2007 with a vision to impart quality technical education and nurture innovation among young minds. The department began with an initial intake of 60 students, which was increased to 90 in 2008 and further to 120 in 2009, reflecting the rising demand for skilled electronics and communication engineers. To meet the expanding needs of the industry and academia, the department introduced a Master of Technology (M.Tech) program in VLSI System Design in 2011 with an intake of 18 students, recognizing the immense potential in the area of Very-Large-Scale Integration (VLSI) design. In tune with the advancements in embedded technology and its applications, a new postgraduate program. The department's B.Tech-ECE program has been accredited by the National Board of Accreditation (NBA) for a period of three years, from the academic year 2023–24 to 2025–26, in recognition of its robust academic framework, quality teaching, and outcome-based education.

VISION

Emerge as a centre for quality education in Electronics & Communication Engineering to create competent professionals

MISSION

1. Offer quality programs in Electronics & Communication Engineering aimed at fulfilling the needs of society and industry.
2. Impart skills and develop scientific temper to solve complex technological problems of current times.
3. Nurture ethics, talent, and entrepreneurship to inculcate professional development of students.

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PROGRAMME OUTCOMES (POs) & PSOs

1. **PO1: Engineering Knowledge:** Apply knowledge of mathematics, science, engineering fundamentals, and ECE specialisation to solve complex engineering problems.
2. **PO2: Problem Analysis:** Identify, formulate, review research literature, and analyse complex engineering problems to reach appropriate conclusions.
3. **PO3: Design and Development of Solutions:** Design solutions for complex engineering problems and develop system components or processes that meet specified needs, considering public health, safety, culture, society, and the environment.
4. **PO4: Conduct Investigations:** Use research-based knowledge and methods, including experimentation, analysis, and interpretation of data, to obtain valid conclusions.
5. **PO5: Modern Tool Usage:** Create, select, and apply suitable techniques, resources, and modern engineering and IT tools for modelling, analysis, and solution of complex engineering problems.
6. **PO6: Engineer and Society:** Apply contextual knowledge to assess societal, health, safety, legal, and cultural issues related to professional engineering practice.
7. **PO7: Environment and Sustainability:** Understand the impact of engineering solutions in societal and environmental contexts and demonstrate awareness of sustainable development.
8. **PO8: Ethics:** Apply ethical principles and commit to professional ethics, responsibilities, and norms of engineering practice.
9. **PO9: Individual and Team Work:** Function effectively as an individual and as a member or leader in diverse and multidisciplinary teams.
10. **PO10: Communication:** Communicate effectively with the engineering community and society through reports, documentation, presentations, and clear technical communication.
11. **PO11: Project Management and Finance:** Demonstrate knowledge of engineering and management principles and apply them in individual and team work to manage projects effectively.
12. **PO12: Life-Long Learning:** Recognise the need for and engage in independent and life-long learning to adapt to technological changes.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

- **PSO1:** Apply the principles of electronic devices, circuits, embedded systems, VLSI, and communication engineering to design, analyse, and implement electronic systems.
- **PSO2:** Design and develop solutions in analogue and digital communication, wireless networks, signal processing, and related applications using modern tools.
- **PSO3:** *Develop innovative, sustainable, and industry-oriented solutions through research, teamwork, ethical practice, and continuous learning in emerging areas of Electronics and Communication Engineering.*

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MESSAGES

CHAIRMAN'S MESSAGE



It gives me immense pleasure to present SPECTRUM, the newsletter of the Department of Electronics and Communication Engineering. It reflects the academic achievements, innovative activities, research contributions, and creative spirit of our students and faculty members.

I appreciate the efforts of the Department of ECE in nurturing competent professionals through quality education, innovation, and value-based learning. I extend my best wishes to the editorial team, faculty members, and students for the continued success of SPECTRUM.

Chairman

MANAGING DIRECTOR'S MESSAGE



I am delighted to share my message for SPECTRUM, the newsletter of the Department of Electronics and Communication Engineering. This publication is a proud reflection of the department's commitment to academic excellence, innovation, research, and student development.

I encourage students to make the best use of the opportunities provided by the institution, strengthen their technical knowledge, and develop the skills needed to serve society with responsibility and confidence. I convey my best wishes to the faculty, students, and editorial team.

Managing Director

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MESSAGES

PRINCIPAL'S MESSAGE



It gives me immense pleasure to present SPECTRUM, the newsletter of the Department of Electronics and Communication Engineering. The newsletter reflects the academic achievements, innovative activities, research contributions, and creative spirit of our students and faculty members. I encourage students to pursue knowledge with curiosity, discipline, integrity, and a commitment to excellence. I appreciate the Department of ECE for nurturing competent professionals through quality education, innovation, and value-based learning. My best wishes to the editorial team, faculty members, and students for the continued success of SPECTRUM.

Principal

HoD'S MESSAGE



I am delighted to share my message for SPECTRUM, the newsletter of the Department of Electronics and Communication Engineering. This publication reflects our department's commitment to academic excellence, innovation, research, and student development. We aim to provide a strong learning environment that enables students to build sound technical knowledge, problem-solving ability, professional ethics, and confidence. I encourage every student to participate actively in academic, research, and co-curricular activities. My best wishes to all faculty members, students, and the editorial team.

Head of Department

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DEPARTMENT PROGRAMS AND ACHIEVEMENTS

PROGRAMS ORGANISED

1. One-Week Add-on Certificate Programme on "Introduction to Deep Learning" was conducted from 05–10 February 2024. Dr. Shivnath, Assistant Professor, Santhiram Engineering College, Nandyal, was the resource person.



2. One-Day Programme on "Entrepreneurship Awareness Programme on Drone Technology" was held on 09 February 2024. Mr. K. Vamsi Krishna, Director, India Drone Academy, Hyderabad, was the resource person.



3. One-Day Industrial Visit to "Ultra Mega Solar Park, Kurnool" was organised on 03 February 2024 for II-II students.



4. One-Day Online Workshop on "Intellectual Property Rights" was conducted on 28 March 2024. Dr. Bharat N. Suryawanshi, Assistant Controller of Patents & Designs, was the resource person.

DEPARTMENT & FACULTY ACHIEVEMENTS

- MoUs signed for a five-year period: India Drone Academy and IPAGE UMS.
- Dr. M. V. Subramanyam received the Lifetime Achievement Award from the Artificial Intelligence Medical and Engineering Researchers Society on 02 March 2024, Hyderabad.
- Dr. Y. Mallikarjuna Rao received the Student Mentorship and Development Award from the Artificial Intelligence Medical and Engineering Researchers Society on 02 March 2024, Hyderabad; and the Jyestha Acharya Award, Bharat Education Excellence Awards 2023–24.
- Dr. G. Sowmya and Ms. B. Alekya Hima Bindu received the Student Mentorship and Development Award on 02 March 2024, Hyderabad.
- Dr. C. Shivnath qualified GATE-2024 in ECE and DS&AI.
- APRCET-2023–24 qualified:
  Mr. N. Sreenivasa Rao,
  Mr. M. Mahesh Kumar and Mr. S. Rambabu.
- Dr. G. Sowmya secured 100% results in Smart Sensors, IV-I ECE.
  Ms. V. Nagamani secured 100% results in Introduction to Internet of Things, IV-I ECE.

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FACULTY DEVELOPMENT PROGRAMMES

FACULTY DEVELOPMENT PROGRAMMES

- **One-Week FDP on Design & Innovation in Wireless Communication with Advanced Technology,** 17–22 January 2024, organised by GATES Institute of Technology, Gooty. Participants: Dr. S. N. Chaudhri; Mr. S. Javid Basha; Mr. S. Mohammad Eliyas; Mrs. B. Alekya Himabindu; Mr. K. Vinod Kumar; Mrs. V. Nagamani.
- **FDP on Applied Cloud Computing for Full Stack Web Development,** 08–12 January 2024, organised by TechSaksham – Mrs. V. Nagamani.
- **FDP on Business Analytics,** 05–09 February 2024, organised by AISSMS College of Engineering, Pune — Mr. K. Vinod Kumar.
- **FDP on Deep Learning and Artificial Intelligence,** 26 February–01 March 2024, organised by Andhra Pradesh State Skill Development Corporation — Mr. K. Vinod Kumar.
- **FDP on Research Methodology and Project Work Guidance,** 12–13 March 2024, organised by Government Degree College, Korutla, Telangana — Ms. B. Alekya Himabindu.

WORKSHOPS ATTENDED

- **Five-Day Online Workshop on SPSS in Research,** 26–30 January 2024, organised by Star International Foundation, Chennai: Dr. G. Sowmya Gali; Ms. V. Nagamani; Ms. B. Alekya Himabindu; Ms. P. Mary Swetha; Mr. S. Mohammad Eliyas; Mr. M. Mahesh Kumar.
- **Two-Day Online Workshop on Face Detection Using OpenCV and AI,** 04–05 January 2024, organised by Tech Solution Patunallau; Dr. G. Sowmya Gali; Ms. N. Jyothsna; Mr. P. Surendra Babu.

FDPS THROUGH NPTEL

- **Introduction to Internet of Things,** Jan–Apr 2024: Mr. N. Sreenivasa Rao; Mr. Shaik Javid Basha; Mr. V. Shankarnath; Mr. S. Girish Babu; Mr. S. Ram Babu; Mr. Syed Munawwar; Mr. Shaik Mohammad Eliyas; Mr. P. Surendra Babu; Ms. B. Alekya Hima Bindu; Ms. S. Jaya Mangala; Ms. P. Merry Swetha; Mr. K. Pedda Obuleshu.
- **Deep Learning, IIT Ropar,** Jan–Apr 2024: Dr. Y. Mallikarjuna Rao; Dr. Shivanath Chaudhari.
- **Machine Learning for Engineering and Science Applications,** Jan–Apr 2024: Dr. Shivanath Chaudhari; Dr. Y. Mallikarjuna Rao.
- **Introduction to Embedded System Design,** Jan–Apr 2024: Dr. Shivanath Chaudhari.

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RESEARCH & PUBLICATIONS

FACULTY PUBLICATIONS

- Dr. M. V. Subranyam et al., 'Mobility Target Tracking with Meta-Heuristic-Aided Target Movement Prediction Scheme in WSN Using Adaptive Distributed Extended Kalman Filtering", International Journal of Communication Systems, Vol. 37, No. 11, March 2024. (SCIE)
- Dr. M. V. Subranyam et al., 'Hybrid Chameleon Search and Remora Optimization Algorithm-Based Dynamic Heterogeneous Load-Balancing Clustering Protocol for Extending the Lifetime of Wireless Sensor Networks', International Journal of Communication Systems, Vol. 37, No. 11, March 2024. (SCIE)
- Mr. S. Javid Basha et al., 'CNTFET-Based Digital Arithmetic Circuit Designs in Ternary Logic with Improved Performance', *Advances in Electrical Engineering, Electronics and Energy, Vol. 7*, pp. 1–10, January 2024. (Scopus)
- Dr. C. Shivnath et al., 'A Discriminatory Groups-Based Supervised Band Selection Technique for *Hyperspectral Image Classification", Remote Sensing Letters, Vol. 15, No. 02, pp. 111–120, January 2024. (ESCI)*
- Dr. Y. Mallikarjuna Rao et al., 'A Novel NASNet Model with LIME Explainability for Lung Disease *Classification', Biomedical Signal Processing and Control, Vol. 93, February 2024. (SCIE)*

FACULTY CONFERENCE PUBLICATIONS

- Dr. C. Shivnath et al. presented 'Enhancing Security with Microwave and LiDAR Sensor Integration' at the 4th International Conference on Emerging Systems and Intelligent Computing, Bhubaneswar.
- Mr. N. Sreenivasa Rao et al. presented 'An Investigation of Matching Circuits for Radio Frequency Energy Harvesting Applications' at the 5th International Conference on Systems, Computation, Automation and Networking, MVIT, Puducherry.
- Mr. Shaik Javid Basha et al. presented 'GNRFET and RRAM Based Digital Gates in Ternary Logic' at the 3rd International Conference on Mobile Networks and Wireless Communications (ICMNWC), Sri Siddhartha Institute of Technology, Tumkur, 2023.
- Ms. S. Jaya Mangala et al. presented 'Evolution and Potential Applications of 6G Wireless Communication in Smart Cities' at the 10th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering, Amity University, Noida, 2023. (Scopus)
- Mr. Shaik Javid Basha et al. presented *'An Effective Method to Develop Pseudo N-Type GNRFETs Based Digital Circuits in Ternary Logic' at the 15th International IEEE Conference on Computing, Communication and Networking Technologies, Himachal Pradesh.*

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STUDENT ACHIEVEMENTS

STUDENT JOURNALS & ACHIEVEMENTS

STUDENT JOURNALS

- 125 students published 31 papers in reputable journals indexed by Google Scholar.
- 8 students published 8 papers in The International Journal of Interdisciplinary Organizational Studies, Vol. 19, Issue No. 1, ISSN 2324-7657, indexed by Scopus.

STUDENT ACHIEVEMENTS

- Sai Vyshnavi and S. Naziya won Second Prize for paper presentation at KITES-2024, Kurnool.
- Panyam Ramya won Second Prize for paper presentation at RIPPLE 2K24, RGM College, Nandyal.
- Dudekula Uday Simha and Kottam Sameer won Second Prize in the project contest at Ashoka Women's Engineering College, Kurnool.
- Kottam Sameer and Dudekula Uday Simha won First Prize in the circuit debugging contest at Ashoka Women's Engineering College, Kurnool.
- Participation: 12 students in KITES-2024 paper presentation; 38 students in RIPPLE-2024 paper presentation at RGM College; 2 students in the project contest; 3 students in circuit debugging; 6 students in paper presentation at Ashoka Women's Engineering College; and 4 students in paper presentation at SVR College, Nandyal.
- 8 students were selected for the next level of IEEE YESIST-12, organised by Ravindra College of Engineering for Women, Kurnool.
- The ECE team won the SMS-2K24 Kabaddi (Men) event. The II-ECE team were runners-up in the SMS-2K24 Women's Cricket and Women's Throwball tournaments.

MOOCS THROUGH NPTEL

- 75 students successfully completed NPTEL: Data Analytics with Python, Jan–Apr 2024.
- 51 students successfully completed NPTEL: Introduction to Embedded System Design, Jan–Apr 2024.

VIRTUAL INTERNSHIPS

- 386 students completed AICTE–EduSkills Internship.
- 113 students completed KodNest Internship.

DEPARTMENTAL GLIMPSES

A Journey of Learning, Achievement and Celebration



Academic Engagement



Student Participation



Sports & Team Spirit



Student Recognition



Celebrations