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 3 | 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



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NANDYAL, ANDHRA PRADESH

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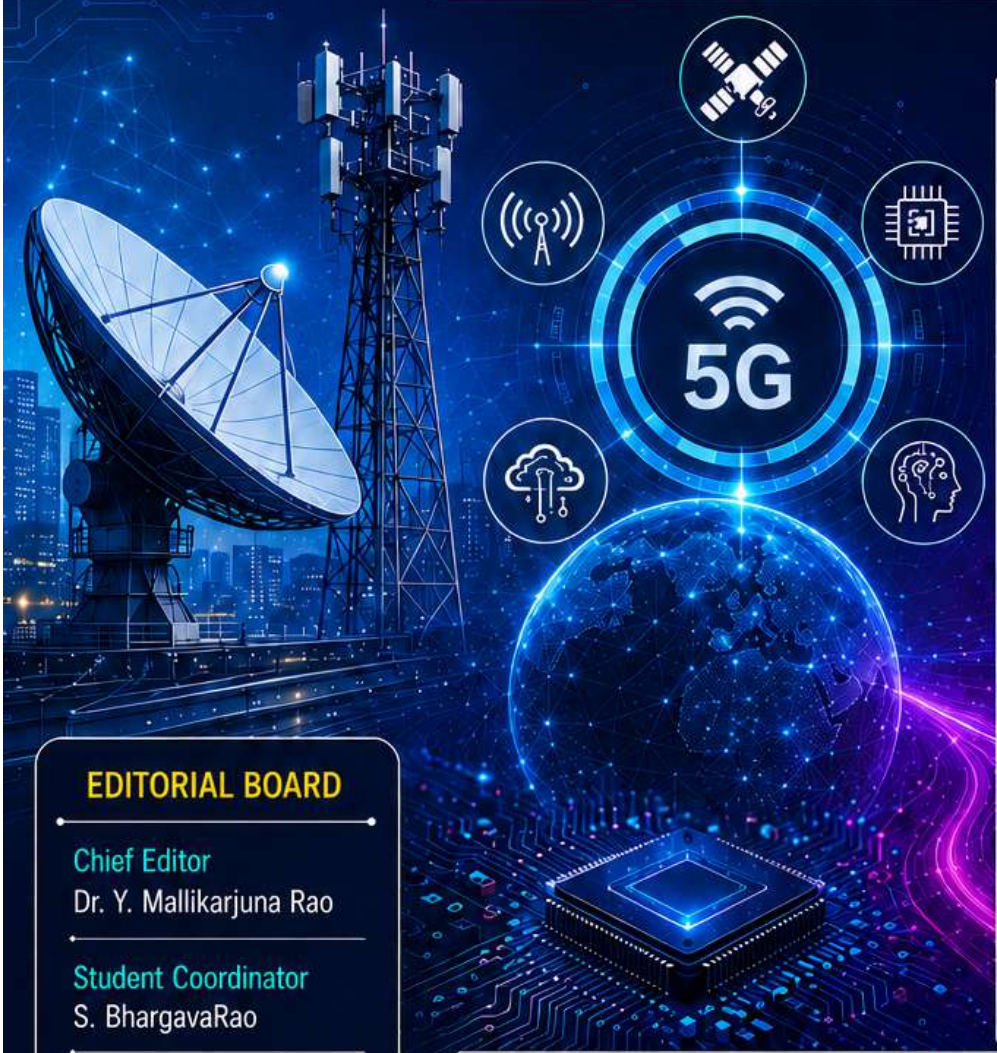

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Santhiram Engineering College (Autonomous), Nandyal
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ABOUT THE COLLEGE



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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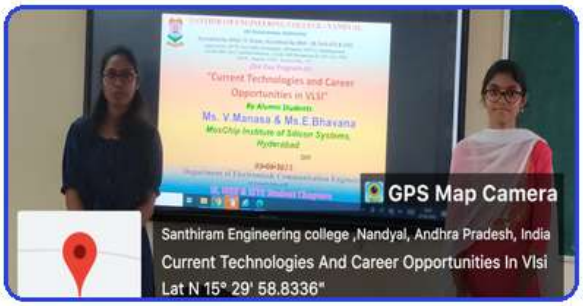
PROGRAMMES ORGANIZED

ALUMNI PROGRAMME



A one-day programme on "Current Technologies and Career Opportunities in VLSI" was conducted by the Department of ECE on 27 September 2023. Ms. V. Manasa and Ms. E. Bhavana from MOS Chip Institute of Silicon Systems, Hyderabad, acted as resource persons. A total of 240 students attended the programme.

TECHNICAL EVENT



Mrs. B. Alekya Himabindu conducted an online coding competition in association with IEEE Signal Processing Society, organised by the Department of ECE on 30 September 2023. A total of 110 students participated in the competition.

FACULTY ATTENDED PROGRAMMES

1. Dr. Sowmya Gali attended the One Week National Level FDP on Cloud Infrastructure, 21–28 August 2023, organised by Brain O Vision.
2. Dr. Sowmya Gali attended the Workshop on VLSI to System Design: Silicon End-to-End Application Approach, 31 July–4 August 2023, organised by AICTE ARM Education and Microelectronics.
3. Dr. Sowmya Gali attended Inculcating Universal Human Values in Technical Education, 3–7 July 2023, organised by AICTE, New Delhi.
4. Ms. Bikkili Alekya Himabindu attended Inculcating Universal Human Values in Technical Education, 3–7 July 2023, organised by AICTE, New Delhi.
5. Ms. Jayamangala Sristi attended the One Week National Level FDP on Cloud Infrastructure, 21–28 August 2023, organised by Brain O Vision.
6. Ms. Nagella Jyosna and Ms. V. Nagamani attended the One Week National Level FDP on Cloud Infrastructure, 21–28 August 2023, organised by Brain O Vision.
7. Dr. Sowmya Gali, Ms. V. Nagamani, Ms. Bikkili Alekya Himabindu, Ms. Jayamangala Sristi, Ms. Nagella Jyosna, Ms. P. Mary Swetha and Mr. N. Sreenivasa Rao attended the Workshop on VLSI to System Design, 31 July–4 August 2023, organised by AICTE ARM Education and Microelectronics.
8. Mr. S. Feroz Shah Ahmed attended the workshop on Python + MATLAB-Based 5G Wireless Technologies: Massive MIMO, mmWave and NOMA, 27–30 July 2023, organised by IIT Kanpur.

FACULTY PATENT

Dr. M. V. Subramanyam was granted the patent "IoT-Based Smart Locker for Vehicles" in September 2023.

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FACULTY PUBLICATIONS

FACULTY PUBLICATIONS

1. Dr. C. Shivnath et al., "ASASA: Automatic Selection and Adaptation in Sensor Array for Intelligent Artificial Olfaction System," Sensor Signal Processing, Vol. 07, No. 09, 2023. DOI: 10.4018/978-1-6684-8696-2.ch005.
2. G. Sowmya et al., "Residual Neural Networks for Human Action Recognition from RGB-D Videos," Journal of Image and Graphics, Vol. 11, 2023. DOI: 10.18178/joig.11.4.343-352.
3. Dr. C. Shivnath et al., "A Machine Learning-Based Disinfectant Type, Concentration, and Usage Monitoring System for Real-World Scenarios," International Conference on IoT, Communication and Automation Technology (ICICAT), Gorakhpur, India.
4. Shivnath Chaudhri et al., "Air Quality Prediction and Monitoring Using Machine Learning-Based Forecasting Approach," ICICAT, Gorakhpur, India. DOI: 10.1109/ICICAT57735.2023.10263594.
5. B. Alekya Himabindu et al., "Image Enhancement for Underwater Photography Using Morphological Filter," ICISCET 2022 (Springer Conference), Gwalior. DOI: 10.1007/978-981-99-1431-9_48.

STUDENT INTERNSHIP ACHIEVEMENTS

1. One student completed a Data Analytics Internship under AICTE–Brain O Vision from May to July 2023.
2. 41 students completed AI–ML Virtual Internship under AICTE–EduSkills from May to July 2023.
3. 29 students completed Cybersecurity Virtual Internship under AICTE–EduSkills from May to July 2023.
4. 5 students completed Data Analytics Virtual Internship under AICTE–EduSkills from May to July 2023.
5. 4 students completed Data Sciences Virtual Internship under AICTE–Brain O Vision from May to July 2023.
6. 25 students completed Embedded Developer Virtual Internship under AICTE–EduSkills from May to July 2023.
7. 4 students completed Java Full Stack Virtual Internship under APSCHE from May to July 2023.

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