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

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AICTE APPROVED | AFFILIATED TO JNTUA, ANANTAPURAMU

SPECTRUM

Signals of Innovation, Waves of Excellence

ECE DEPARTMENT NEWSLETTER | VOL. 2 | ISSUE 2 | AY 2022-23 | OCT-DEC 2022

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 2022-23 | OCT-DEC 2022

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Dr. Y. Mallikarjuna Rao

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B. LASYAPRIYA

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Department of ECE

INNOVATE | CONNECT | TRANSFORM

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
Santhiram Engineering College (Autonomous), Nandyal

www.srecnandyal.edu.in

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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 OF ELECTRONICS & COMMUNICATION ENGINEERING

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FACULTY DEVELOPMENT PROGRAMMES

1 India's 5G Future | Webinar

15 October 2022 — IFERP

Ms. S. Jaya Mangala
Assistant Professor.

2 Robotics | Workshop

26 November 2022 — Pantech, Hyderabad

Dr. G. Sowmya
Associate Professor.

3 Advances in Wireless and Antenna Technology | FDP

07–12 October 2022 — MSSCE, Belagavi

Mr. N. Sreenivasa Rao
Assistant Professor.
Mr. K. Vinod Kumar
Assistant Professor.

4 Machine Learning | One-week Online FDP

07–12 December 2022 — Lonavala, Pune

Dr. G. Sowmya – Associate Professor.
Ms. V. Nagamani – Assistant Professor.
Ms. S. Jaya Mangala – Assistant Professor.
Mr. M. Mahesh Kumar – Assistant Professor.
Mr. S. Munawwar – Assistant Professor.
Mr. N. Sreenivasa Rao – Assistant Professor.

5 Familiarization Sessions on Filing IP in Real-Time | Five-week FDP

03 September – 01 October 2022

Sree Vidyanikethan Engineering College (Autonomous), Mohan Babu University.

Dr. M. V. Subramanyam – Professor.
Ms. B. Alekya Himabindu – Assistant Professor.

6 C-based VLSI | NPTEL–AICTE FDP

July–October 2022

Ms. Nagella Jyothsna
Assistant Professor.

7 Intellectual Property Rights & Competition Law | NPTEL–AICTE FDP

August–October 2022

Ms. B. Alekya Himabindu
Assistant Professor.

8 Digital Image Processing | NPTEL–AICTE FDP

August–October 2022

Ms. B. Alekya Himabindu
Assistant Professor.

9 Introduction to Machine Learning | NPTEL–AICTE FDP

August–October 2022

Ms. B. Alekya Himabindu
Assistant Professor.

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FACULTY ACHIEVEMENTS & RESEARCH

HONOURS & ACADEMIC ACHIEVEMENTS

1. **Dr. M. V. Subramanyam**
   Best Teacher and Principal recognition, Award for Excellence in Education 2022.
2. **Dr. Y. Mallikarjuna Rao**
   Best Teacher recognition, Award for Excellence in Education 2022.
3. **Ms. S. Jaya Mangala**
   Admitted to the Ph.D. programme at KL University.
4. **Ms. Sowmya Galli**
   Awarded the Ph.D. degree by KL University.
5. **AD Scientific Index ranking received by:**
   - Dr. M. V. Subramanyam
   - Dr. Y. Mallikarjuna Rao
   - Dr. G. Sowmya
6. **Dr. Y. Mallikarjuna Rao**
   Qualified NTA UGC NET, December 2021 & June 2022 merged session.

FUNDING & PROJECT SUPPORT

₹10,000 — **IFERP Innovative Project Seed Funding Scheme**
Recipients: Ms. Sowmya Galli and Dr. M. V. Subramanyam.

₹30,000 — **NAAC Financial Assistance Programme**
Recipient: Dr. M. V. Subramanyam, Principal, SREC.

₹34,800 — **KAPILA Scheme**
Support received for six patent titles.

FACULTY JOURNALS / CONFERENCES

1. **Dr. M. V. Subramanyam**
   "Improving QOS in flow controlled CR-ad hoc network with multi criteria routing assisted with cooperative caching and information redundancy"
   Int. J. Ad Hoc and Ubiquitous Computing, Vol. 40; Issue No. 30–37; pp. 774–786; ISSN 1743-8233; 2022. Scopus indexing reported.
2. **Dr. Y. Mallikarjuna Rao**
   "A model predictive Goertzel algorithm based active islanding detection for grid integrated photovoltaic systems"
   Microprocessors & Microsystems, 95 (2022), 104706.
3. **Ms. S. Jaya Mangala**
   "Design and Simulation of High Performance Hybrid Full Adder Using CMOS 45 nm Technology"
   Advances in Signal Processing and Communication Engineering; Lecture Notes in Electrical Engineering 929; Springer; 2022.
4. **Dr. Y. Mallikarjuna Rao**
   "Crosstalk Analysis of On-chip VLSI Interconnects"
   International Journal of Emerging Research in Engineering, Science, and Management; Vol. 1, Issue 04; pp. 06–11; ISSN 2583-4894; 2022.
5. **Dr. Y. Mallikarjuna Rao**
   "Crosstalk Analysis of SLGNR-Based VLSI Interconnects"
   Recent Trends in Analog Design and Digital Devices; Vol. 5, Issue 03; pp. 01–07; 2022.
6. **Dr. Y. Mallikarjuna Rao**
   "Analysis of Crosstalk in GNR-Based Global Interconnects"
   Recent Trends in Analog Design and Digital Devices; Vol. 5, Issue 03; pp. 01–07; 2022.

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STUDENT ACHIEVEMENTS

STUDENT JOURNALS / CONFERENCES

Journal of Pharmaceutical Negative Results
Vol. 13, Issue 5 | ISSN 2229-7723 | November 2022

1. **"VLSI Implementation of Ternary Adder and Multiplier Using Tanner Tool"**
   Authors: Murathoti Sharone, Dr. Sowmya Gali, S. Girish Babu, Vadala Nagamani, S. Jaya Mangala.

2. **"Accuracy Configurable Adder Based on the Conventional CLA"**
   Authors: Road Hemamalini, Dr. Udayabhaskar Pattapu, B. Alekya Himabindu, A. Anuradha.

3. **"Enhanced Fixed Width Booth Multiplier for Improved Accuracy"**
   Authors: Gadikota Chandana, Vadala Nagamani, Jyosna Nagala, S. Munawwar, Dr. Sowmya Gali.

4. **"Design and Implementation of BCD Encoder Based Reversible Priority Encoder Using Toffoli Gate"**
   Authors: Bindu Batta, S. Rambabu, Dr. Y. Mallikarjuna Rao, M. Mahesh Kumar, N. Sreenivas Rao.

STUDENT CERTIFICATE COURSES & INTERNSHIPS

NPTEL — Programming in Java
Certificate completed by Kommadi Balaji, Gurrala Venakata Swathi and P. Murthujavali.

Students	Internship	Provider
27	AI–ML Virtual Internship	APSCHE EDUSKILLS
6	AI–ML Virtual & Salesforce Developer Internships	AICTE EDUSKILLS
3	AWS Cloud Internship	AICTE EDUSKILLS
2	AWS Cloud & Salesforce Internships	AICTE EDUSKILLS
7	Cybersecurity Internship	AICTE EDUSKILLS
3	Cybersecurity & Salesforce Developer Internships	AICTE EDUSKILLS
3	Data Analytics Internship	AICTE EDUSKILLS
2	Robotic Process Automation Internship	AICTE EDUSKILLS
59	Salesforce Developer Internship	APSCHE
3	Salesforce Developer & AI–ML Internships	AICTE EDUSKILLS
1	Salesforce Developer & AWS Cloud Internships	AICTE EDUSKILLS

STUDENT PLACEMENTS

Number of Students	Company
5	Hexaware
5	TCS
2	TCS Digital
1	Gentree Labs

STUDENT ACHIEVEMENT

R. Harshitha, III Year

Selected for the AIU South Zone Inter-University Chess Tournament.

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DEPARTMENT GALLERY













