

ELECTRONICS & COMMUNICATION ENGINEERING DEPARTMENT



**VNR VIGNANA JYOTHI
INSTITUTE OF
ENGINEERING AND
TECHNOLOGY**

<http://www.vnrvjiet.ac.in>



- ✓ UGC Autonomous
- ✓ Accredited by NAAC with "A" grade
- ✓ Accredited by NBA
- ✓ Awarded as "College with potential for excellence" by UGC
- ✓ Ranked in 101-150 band by NIRF

Message from the Head of the Department

The Department of Electronics and Communication Engineering (ECE) established in the year 1995, endeavours in imparting quality education and training to the students in distinct areas of Electronics and Communication Engineering. The Department has been at the forefront of Research and Innovation, whilst leading on the innovation curve.

The Department attracts best students for its under graduate and post graduate programs. The faculty members in the department are having expertise in their specialized areas and take extreme care to shape the young talents. Apart from training they receive in the Department, the students get exposure at the National and International level platforms through internship, university exchange programs and participation in conferences and competitive events. Over the years, our graduates and post graduates got hired in leading National and International organizations and many of our students have made us proud through the achievements in their professional career.

Dr. Y. Padma Sai
Professor & Head of the Department

Faculty

ECE Department has well qualified and experienced teaching faculty and supporting technical staff. Our Department has 63 eminent Faculty members, with 14 faculty members as doctorates (from IITs, NITs, State and National Universities) and 29 faculty members are pursuing Ph.D.

The Department has Research and Consultancy Cell which comprises of RFID and Wireless Sensor Networks Lab, Virtual Reality Lab and Intel Intelligence systems lab. Department has four collaborative ITRA projects in association with University of Hyderabad and Indian Institute of Information Technology, Hyderabad (IIIT-H).

ECE Department got recognition as "Research Centre" by JNTUH, Hyderabad. Department got a sanction amount of Rs.2.6 Crore grants from various funding agencies such as DST, DRDO, AICTE, UGC, DIT, Ananth Technologies, X-Design Ventures etc.

The research work in the department is vibrant with the support of eminent professors like Dr.C.D. Naidu, Principal, VNRVJIET, Dr. Y Padma Sai, Dr.V. Padmaja, Dr.L Padma Sree, Dr.P. Srihari and Dr. S.Rajendra Prasad.

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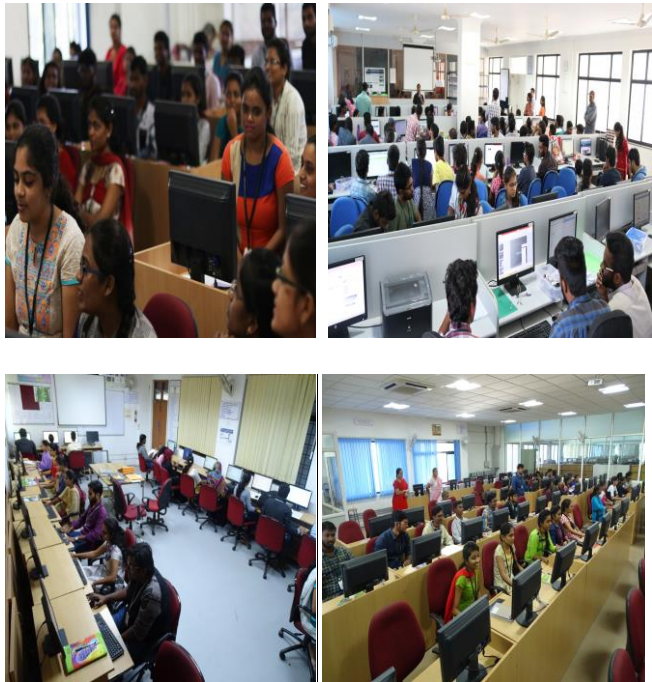
B. Tech Programmes offered:

Electronics & Communication Engineering

M.Tech Programmes offered:

Embedded Systems

VLSI



ECE Labs with high-end Configured Computers with advanced software and equipment

VNR Initiatives

Shadow engineering is structured to have Five to ten students accompanied by a member of the faculty and are hosted in an industry for 5 days to work with an Industry Mentor to experience the real application requirements. Story Board and VNR Protocol are innovative teaching practices in the VNRVJIET particularly for laboratory courses, which enables quick visualization of concepts to the students.

Certification and Bridge courses

Students undergo minimum two Certification and Bridge courses apart from the curriculum which includes training on Networking & VLSI front end design, CAD tools for VLSI Design, Embedded networking, Internet of Things, Network Security, Embedded Linux Application Development program, ASIC Design using industry standard EDA tools, Design and Development in Lab VIEW etc. It helps students to become industry ready.

Courses offered

Department offers courses which enhance the knowledge of the students in the domains like VLSI, Embedded, and communications which make them industry ready. UGC Autonomy enables the Department to offer industry specific courses as electives in the curriculum, to bridge the gap between industry and academia.

Along with the basic courses like Mathematics and Computer Programming, students are given effective exposure and training in the core subjects like Circuit Theory, Electronic Devices and Circuits, Signals and Systems, Principles of Electrical Engineering, Switching Theory and Logic Design, Control Systems, Computer Organization, Electromagnetic Theory and Transmission Lines, Electronic Circuit Analysis, Pulse and Digital Circuits, Linear and Digital IC Applications, Microprocessors and Microcontrollers, Digital Signal Processing, Electronic Measurements and Instrumentation, VLSI Design, Digital Image Processing, Digital Design through Verilog, Embedded Real Time Operating Systems, DSP Processors and Architectures, Analog Communications, Digital Communications, Antennas and Wave Propagation, Principles of Electronic Communications, Cellular and Mobile Communications, Computer Networks, Optical Communication, Telecommunication Switching Systems, Satellite Communications, Software Defined Radio, Speech Processing and Microwave Engineering.

Blended learning approach for Labs:

Laboratory experience and academic projects are integral part of program in each semester. The unique feature of handling lab courses is by teaching through VNR Lab protocol. This is designed to emphasize the significance of the respective laboratory with a perspective of applications in the Engineering Profession. The aim of this is to structure and conduct Lab courses with the "Career Vision Approach" and as a continuous process against the common practice of conducting experiments in isolation. The core labs include Computer Programming Laboratory, Data Structures Laboratory, Electronic Devices and Circuits Laboratory, Basic Simulation Laboratory, Analog Communications Laboratory, Electronic and Pulse Circuits Laboratory, Linear and digital IC Applications Laboratory, Microwave Engineering Laboratory, ECAD and VLSI Laboratory, Embedded Programming Lab, Mixed Signal IC design Lab, Digital Communications Laboratory, Microprocessors and Microcontrollers Laboratory, Digital Signal Processing Laboratory



Student Projects with Societal Impact

It is mandatory that outcome of the research project completed by student should have direct or indirect societal impact.

Few of the projects appreciated by Industry and rural society are:

- Smart e-Health Monitoring System
- Real time LPG weight monitoring and automatic gas booking system
- Patient assistance and lift monitoring
- Real-Time Arrhythmia Classification



Research, Innovation and Development

In addition to all the theoretical and practical courses, the undergraduate and postgraduate students actively contribute to the ongoing research in the department. Every student of B. Tech and M. Tech should complete a research project in their ultimate and penultimate semesters.



Wireless sensor Network System for Water quality and quantity monitoring, Weapon Locking and Tracking System

In addition to these, Department executes funded research projects sponsored by various organizations and institutions like DST, UGC, AICTE, DRDO, ITRA, IITKGP, HCU & IIITH, Ananth Technologies. Few of the sponsored Projects are:

- Design and Development of System for ECG waveform characterization and processing
- Development and Implementation of automatized System for the detection of Sleep Disorders using EEG Analysis
- Development of low power and high-speed FPGA based IP core mini Ace architecture compatible to data device corporation
- Weapon Locking and Tracking System
- Development and Implementation of Algorithm for Real Time Home Automation System to assist paralysed Patients using Eye Blinking
- Prototyping of Wireless Network System on Agricultural Applications using ZigBee
- IP Core Development of MIL STD 1553 for RT and MT terminals
- Development of effective Wireless Sensor Network System for water quality and quantity monitoring (Aqua Sense) in Collaboration with HCU & IIITH
- Virtual Assistant for Mobile Devices using Voice and Gesture Technologies in Collaboration with IIITH
- Semi Automatic Prosthetic hand

Research Facilities in the Department

- Research and Consultancy Centre (RCC)
- TEXAS Instrument innovation lab
- Project lab funded by industry - Ananth Technologies to enhance research activities
- Digital Library
- **Advanced Embedded Systems Laboratory** allows students to work on various development boards like Raspberry-pi, MSP-430, Beagle bone, ARM, Arduino etc.
- **Advanced VLSI lab** provides Synopsys Asia Pac Front End and Back End University Bundle-3, advanced FPGA Kits and Mentor Graphics EDA tools
- **Advanced Digital Signal Processing lab** has advanced DSP Controller kits
- **IoT-LAB** provides a very large-scale infrastructure suitable for testing small wireless sensor devices and heterogeneous communicating objects.

Student Achievements

Students excelled on National and International platforms:

Few of them are

1. Ms. Jahnvi Allenki received the best student award from Mr. V Rajanna, Vice President & Regional Head, TCS Hyderabad
2. Students of IV B.Tech ECE selected for cyber security vulnerability assessment and penetration testing in Spyr technology, Bangalore
3. Ms. Sirisha Sinkara, won TCS award for the Best Student-Project of 2014-15 batch. Award comprises a gold medal, a certificate and a cash price of Rs. 20,000.
4. Ms. Shiri Sanjana Vemulapalli, ECE received ISTE AP & TS State Award for "Ideal Student of Talent and Excellence" among the A.P & T.S Engineering Colleges
5. Mr.T.Mahidhar, ECE received Award for the "Best Student Innovator" for the Project Titled "Cough classification and interpretation of respiratory pathology" among the ISTE AP & TS Engineering Colleges
6. Bronze medal from China Association of Inventions to Sri S.V.N. Narayana Rao, Dr.Y.Padma Sai, V.Naveen Kumar & M.Baswa Raj (III.CSE student) for their innovation 'Cough and wheeze analyzer for respiratory digital health services'



Internships

Students pursue a summer internship of 4-8 weeks after their third year in corporate industries where they apply the theoretical knowledge gained through classroom in the real world. Internships provide the students with an immense amount of exposure making them ready to enter into the professional world.

Faculty Achievements

1. Dr . C. Dhanunjaya Naidu, Principal received award for the "Best Engineering College Principal" in 12th ISTE A.P & T.S Sections
2. Dr. Y. Padma Sai Head of ECE Department has received the best engineering college teacher award from ISTE A.P and T.S section.
3. Dr. Y. Padma Sai Professor and Head ECE, was nominated as Secretary cum Treasurer of ISTE Telangana Section for the duration 2015-17
4. Dr. C. D. Naidu Principal and Dr.Y.Padma Sai attended 47th ISTE National Annual Convention during 27th - 29th January, 2018 at Saintgits College of Engineering, Kottayam (Kerala) and received Sri V.V.R. Seshadri Rao, Gudlavelleru Engineering College National Award for the Best Private Engineering College.
5. Dr. Y.Padma Sai has been nominated as Vice-Chairman for Women in Engineering Affinity Group, IEEE Hyderabad Section



Our Recruiters

