




VISION

 To become a reputed Department of learning in Electronics and Communication in research and transform the students into professional engineers.

MISSION

 To provide a strong foundation in core electronics and communication engineering that would make students to explore advances in research for higher learning.

 To provide a learning ambience to nurture the young minds with theoretical and practical knowledge to produce employable and competent engineers.

 To imbibe moral values, professional ethics, team spirit and leadership qualities among students and faculties to contribute to the continuously evolving technologies.

 To inculcate empathy for societal needs and concern for environment in engineering research development and practices.



E-Sancharika

DEPARTMENT OF ECE NEWSLETTER

JUNE 2018 Vol. 3 Issue 2



***“THE SCIENCE OF TODAY IS THE
TECHNOLOGY OF TOMORROW”***

- EDWARD TELLER

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Mr. Sai Sri Harsha, III ECE

Mr. Rohith, II ECE

Ms. K. V. Mriganaini, II ECE

About The Department

The ECE Department was established in 2011 with an intake of 120 students. Dr. P. H. Gopal Mani is the HOD. He has completed Ph.D in Embedded Systems and has a vast experience of 36 years, both in Industry and as well as Academics. The department has excellent laboratories and well-qualified faculty. The department trains the young engineers to cater to the technological needs of the nation. The faculty members are associated with IETE, IEEE & CSI. **The Department supports economically poor students in all aspects.**

From HOD's Desk

The Department of Electronics & Communication Engineering (ECE) has consistently maintained an exemplary academic record. The greatest asset of the department is its highly motivated and learned faculty. The available diversity of expertise of the faculty with the support of the other staff prepares the students to work in a global and multicultural environment. The graduates of the Electronics & Communication Stream have been selected by some of the leading software companies. The Department not only aims to make our students technically sound and knowledgeable, but also to nurture their wisdom and make them a better and responsible human being. We hope that we will continue to deliver our best to serve the society and mankind. It is also expected that our students will continue to pass on the skills which they have developed during their stay at this department to the whole world for a better society. **I congratulate Dr. N. Srinivasa Rao, Professor, ECE Department, who is going to take charge as HOD, ECE from 02-07-2018 onwards. I also congratulate and welcome Dr. R. Prakash Rao, who has recently joined us as Assoc. Professor in the department.**

New Faculty Profile

S.N	Faculty Name	Profile
1.		Dr. R. Prakash Rao Associate Professor prakashiits@gmail.com

Faculty Achievements

- ❖ Dr. P.H. Gopal Mani, Professor, developed ARM Controller based H/W MATERIALS (product is under evaluation)
- ❖ Dr. Nukala Srinivasa Rao, Professor, developed IoT based estimation of Pollution Control of water in terms of Ph + turbidity, etc., (product is under developing stage)
- ❖ Dr. Sushanth Babu, Professor, applied for a Research Project, AICTE, of worth Rs.25 Lakhs (under consideration)
- ❖ Mr. V. Karunakar Reddy, Assistant Professor, has registered for Ph.D at VTU under the supervision of Dr. A.V. Ravi Kumar
- ❖ All the ECE faculty members have successfully achieved student level credential for completion of "CCNA Routing and Switching: Introduction to Networks" course
- ❖ Dr. Pallavi Khare got active SPOC (Single Point Of Contact) by NPTEL for Jan-June 2018

MoUs of the Department

- ❖ **ECE of MECS** has been signed for MoU with
 - E&ICT Academy, NIT Warangal
 - M/S EdGate Technologies, Bengaluru
 - M/S Elegant Embedded Systems, Hyderabad
 - Texas Instruments

Events organized by the Department

- ❖ Two-day National Conference on Trends in Science, Engineering and Technology - 2018 (NTSET-2018) was held from 02.02.18 to 03.02.2018. **Dr. P. Hara Gopal Mani, Professor & HOD of ECE was the Convener.**
- ❖ On 27th February 2018, III year students visited SDSC, SHAR, Sriharikota, Nellore, Andhra Pradesh.
- ❖ On 10th May 2018, III year students visited BSNL, RTTC, Gachibowli, Hyderabad.
- ❖ A seminar on “Awareness Session on Women’s Health” by Dr.Rajini Reddy, Prof (OBG), was organized by WIE on 25.01.2018.
- ❖ Women’s day was celebrated by WIE on 03.03.2018.
- ❖ From 15.03.2018 to 17.03.2018, an event was conducted on “Computer and Communication Skills” at AP Model School, Medchal, Hyderabad by WIE.
- ❖ On 26th March 2018, a talk was conducted on “Mobile Communications & Antennas for Future” by Dr. L. N. Merugu, Retd. Scientist ‘H’, DLRL, HYD.

Faculty Publications

- ❖ Dr. P. Hara Gopal Mani, “Dynamic Evaluation of Embedded Systems”, NTSET-2018, ISBN: 2320-2882, PP. 12, Feb 2&3, 2018
- ❖ Dr. N. Srinivasa Rao, “Broad Band Capacitive Coupling Antenna for C-Band Applications”, NTSET-2018, ISBN: 2320-2882, PP. 09, Feb 2&3, 2018
- ❖ Dr. M. Sushanth Babu, “A Novel SVD-Based water marking scheme using DWT”, NTSET-2018, ISBN: 2320-2882, PP. 11, Feb 2&3, 2018
- ❖ Dr. M. Sushanth Babu, “Energy Efficient Transmission for Multi-Radio Multi-Hop Cooperative Wireless Networks” Journal of Adv. Research in Dynamical & Control Systems, ISSN: 1943-023x, Vol.10, No.04, pp.117-125, 2018. (SCOPUS)
- ❖ Dr. M. Sushanth Babu, “A Novel SVD-Based watermarking scheme using DWT”, International Journal of Creative Research Thoughts, ISSN: 2320-2882, Vol.6, no.1, pp. 6-10, 2018.
- ❖ Dr. Pallavi Khare, “RTL generation using a high performance DIF algorithm using ‘C’”, NTSET-2018, ISBN: 97881-936274-0-2.
- ❖ Dr. Pallavi Khare, “A review on Mixed IRIS spoofing attacks Detection”, NTSET-2018, ISBN: 2320-2882, Feb 2&3, 2018
- ❖ Mrs. B. Indira Priyadarshini, “FPGA implementation of an image compression using Verilog”, IJSR, ISSN: 0976-2879, Vol.2, pp:198-203-2018.
- ❖ Mrs. B. Indira Priyadarshini, “RTL generation using a high performance DIF algorithm using ‘C’”, NTSET-2018, ISBN: 97881-936274-0-2.
- ❖ M. Naresh, “A framework for Heterogeneous wireless networks using fast vertical Handover”, IJCRT, ISSN: 2320-2882, Vol.6, pp.20-26, March-2018.
- ❖ M. Naresh, “A framework for Heterogeneous wireless networks using fast vertical Handover”, NTSET-2018, ISBN: 2320-2882, PP. 20-26, Feb 2&3, 2018
- ❖ Mrs. K. Aruna, “Effective food grain loss reduction technique using IOT”, IJCRT, ISSN: 2320-2882, VOL. 6, Issue 1, pp. 45-49, Feb 2018
- ❖ Mrs. K. Aruna, “Design & Implementation of All digital phase locked loop on FPGA”, NTSET-2018, ISBN: 2320-2882, Feb 2&3, 2018
- ❖ Mr. A. Abhishek Reddy, “A Framework for Heterogenous Wireless Networks using Fast Vertical Handover”, IJCRT, ISSN: 2320-2882, Vol.6, pp.20-26, March-2018.
- ❖ Mr. K Koteswara Rao, “Performance Enhancement of RMPA by underneath 2D-EBG ground Plane”, NTSET-2018,ISBN: 2320-2882, Feb 2&3, 2018
- ❖ Mr. Kunda Praveen, “Rasberry pi based global industrial process monitoring through wireless communication”, NTSET-2018, ISBN: 2320-2882, Feb 2&3, 2018
- ❖ Dr. R. Prakash Rao, “Implementation of Various Low Power Techniques In A Chain Of Four Inverters”, Journal of Emerging Technologies And Innovative Research (JETIR), ISSN-2349-5162, May 2018, Volume 5, Issue 5.
- ❖ Dr. R. Prakash Rao, “Video Signal Processing Through Low Cost FPGA”, International Journal For Research Trends And Innovation. ISSN: 2456-3315. © 2018 IJRTI | Volume 3, Issue 6.

Workshops attended by the Faculty

- ❖ Mr. V. Karunakar Reddy, Asst.Prof., attended a one-week FDP on “Latest Trends in VLSI Design and hands on implementation using Cadence EDA tools” from 18.06.2018 to 23.06.2018 in GCET.
- ❖ Mrs. B. Indira Priyadarshini, Asst.Prof., attended a one-week FDP on “Latest Trends in VLSI Design and hands on implementation using Cadence EDA tools” from 18.06.2018 to 23.06.2018 in GCET.
- ❖ Mr. P. Ravi Kumar, Asst.Prof., attended a one-week FDP on “Latest Trends in VLSI Design and hands on implementation using Cadence EDA tools” from 18.06.2018 to 23.06.2018 in GCET.

Students’ Achievements

About 20 students have participated in various events conducted by different colleges and a student also achieved a gold medal in a cultural competition.

Enrollment Number	Name	Event	Date	Venue
1608-15-735-084	K.Sai Srinija	Bharatanatyam, won Gold Medal	06.01.2018	Vasavi College of Music & Dance

- ❖ R .Kanya Kumari of ECE 4th year has been selected in NCC Air wing & she is eligible for a scholarship from the NCC Air Wing.
- ❖ Mr. Bhageerath, II ECE-A, was one of the players of OU team which won the First prize in a volleyball tournament held at OU, Hyderabad.
- ❖ Mr. Akhil Reddy, Mr.Mayank & Y.Sai Kiran won the First prize in “ABHIGYAAN 2K18”, a project Expo for the title, “Audi Watermarking using Fibonacci Series”.
- ❖ Ms. K. Rathna Sree, Ms. Shivani Jupudi & Ms. Ch.Tejaswini won the Second prize in ABHIGYAAN 2K18”, a project Expo for the title, “Electronic Watchdog”.
- ❖ V. Mounika, a student passed out in 2017, is pursuing her MS in Germany.

Students’ Placements

About 9 students from the department have been placed in various companies from Jan-June 2018 and their details are mentioned in the given tabular form below.

S. No	Enrollment Number	Name of the Student	Company	Date of Appointment
1	1608-14-735-089	C. Uday Kiran	Face	31 st March 2018
2	1608-14-735-016	Sri Krishna Mohan	Amazon, Face	27 th June 2018, 31 st March 2018
3	1608-14-735-020	Rohith V. Reddy	Face, Amazon	31 st March 2018
4	1608-14-735-069	P.V.S. Vishnu Vandana	Robertbosch, Infosys	RBE/HRL/2018/1660 & 6 th June 2018, HRD/3T/18-19/12363733 & 17 th May 2018
5	1608-14-735-075	R. Buchhi Babu	Mindtree, Genpact, Justdial, Talentio	18 th MAY 2018 & Employee ID :1061, 14 th October 2017, 19 th January 2018, 3 rd March 2018
6	1608-14-735-078	R. Sai Akhil	Pole To Win	2468968 & 8 th June 2018
7	1608-14-735-087	V. Sai Chaitanya	DXC, Hexaware, Face, Genpact, Option Matrix	2468975 & 22 nd September 2018, 2468975 & 17 th March 2018, 31 st March 2018, 19 th March 2018
8	1608-14-735-023	V. Sai Deepthi	Autotec Systems Pvt. Ltd.	7 th June 2018
9	1608-14-735-071	L.Reshmi Susheela	Accenture, Eureka Forbes	C3190718 & 20 th July 2018, 25 th May 2018

Technical Articles

WHAT IS DRONE TECHNOLOGY?

Dr. P. Hara Gopal Mani, Professor, ECE Department



Most of us have seen quad-copter with camera in marriages and taking video of invitees and displaying on TV screen. Hollywood film goers must have watched a bigger version of the same technology delivering bombs and being referred as “drone”. The figure shows both types. **How Do Drones Work? And What Is Drone Technology?**

Unmanned aerial vehicle (UAV) technology covers everything from the physical, to the circuit chipset and the software which form the intelligence. Drone technology is constantly evolving and advanced drones are coming into the market every month. UAVs use composite materials that are of less weight and greater strength. Drone as a system has two parts- the physical part (drone) and the control system. The front part houses all the sensors and navigational systems and rest of the body is equipped with technology systems as demanded by the intended use.

All that and much more studied in Electronics and Communication Engineering discipline is used in the design and development. Several drones use GPS and Radar technologies along with other sensor technologies for navigation and obstacle detection and avoidance. Some use Gyro Stabilization and Inertial Measurements for flight control. It is expected by several business intelligence reports that the commercial drones could be \$82 billion industry and a 100,000 job boost to the U.S. economy by 2025 [1]. For more information, readers are referred to DroneZon [2].

1. Exploring the latest drone technology for commercial, industrial and military drone uses- Divya Joshi. Jul. 13, 2017
2. (<https://www.businessinsider.com/drone-technology-uses-2017-7?IR=T>)

FinFET Technology

Mr. V. Karunakar Reddy, Asst. Prof., ECE Department

FinFET technology takes its name from the fact that the FET structure used looks like a set of fins when viewed. The main characteristic of the FinFET is that it has a conducting channel wrapped by a thin silicon "fin" from which it gains its name. The thickness of the fin determines the effective channel length of the device. In terms of its structure, it typically has a vertical fin on a substrate which runs between a larger drain and source area. This protrudes vertically above the substrate as a fin.

The gate orientation is at right angles to the vertical fin. And to traverse from one side of the fin to the other, it wraps over the fin, enabling it to interface with three sides of the fin or channel. This form of gate structure provides improved electrical control over the channel conduction and it helps reduce leakage current levels and overcomes some other short-channel effects. The term FinFET is used somewhat generically. Sometimes it is used to describe any fin-based, multigate transistor architecture regardless of number of gates.

Impact of a Virtual Social Network of Learning in Academic Performance

Ms. Krovvidi Venkata Mriganaini, 3/4 ECE-A, V SEM

New technologies, and in particular the internet, provide teachers with interesting tools to improve the teaching-learning process. In this paper we study how the use of virtual social networks of learning impact on the academic performance of students. Having a clear picture of the use of social networks and identifying students' personal learning environment helps to organize different activities so that they spend a more effective and efficient time. A Virtual Learning Environment is a software system designed to support teaching and learning by providing assessment tools, communication, content loading, student work performance, student group management, questionnaires, tools tracking, wikis, blogs, chats, forums, etc., via Internet. Examples of these environments are Moodle, Blackboard, Claroline, among others. The design of the tool is a part of a Social-Cognitive Pedagogical model. The main objective is the development of the fundamental competencies through process of interaction and communication; Constructed through learning, dialectics, reasoned group criticism, the link between theory and practice, and the solution of real problems that is interested to the community, which results in subjects of social transformation. Pedagogical meditation plays a very important role in guaranteeing a meaningful learning.

Fun and Pun Articles

Dr. P. Hara Gopal Mani, Professor, ECE Department (Images: Source world wide web)



THE FIRE JOKE
SUJITH, II ECE-B

There's a fire in the middle of a room and 3 buckets of water in the corner.
A physicist walks in, takes a bucket of water, pours it around the fire and waits for the fire to put itself out.
An engineer walks in and pours a bucket on the fire; it doesn't go out so he goes off to check the fire safety standards.
A mathematician walks in, looks at the fire and the remaining bucket of water, convinces himself that there's a solution and walks out.

A PHYSICIST, A CHEMIST AND AN ENGINEER
RITISH, II ECE-A

A chemist, a physicist, and an engineer are sailing out at sea. The boat sinks and they're marooned on a desert island. Luckily, they have a bag with a can of food in it, but no tin opener.
The chemist tries to open the can first by trying to erode it. No luck.
The physicist takes off his glasses and focuses sunlight on the can to try and burn the lid off. No joy.
Finally, the engineer shouts "Hold on, I've got an idea! Let's assume the can is open!"

THE ENGINEER'S WIFE
YESHWANTH, II ECE-B

A wife asks her husband, an engineer, "Darling, can you please go to the shop, buy one pint of milk and if they have eggs, get a dozen!"
Off he goes. Half an hour later the husband returns with 12 pints of milk.
His wife stares at him and asks, "Why on earth did you get 12 pints of milk?"
"Well... they had eggs", he replied.

A VICAR, A DOCTOR AND AN ENGINEER
VENKATESH, II ECE-A

A vicar, a doctor and an engineer were playing a round of golf. They got to the third tee and were delayed by people still playing the hole.
The engineer lost his patience, "What's going on? We've been here at least 20 minutes!"
The doctor nodded in agreement.
The vicar saw the green keeper walking by and shouted at him, "How come those groups ahead of us are so slow?"
The green keeper replied, "Oh, they're all blind firemen. They all lost their sight pulling school children out of a burning building, so they can play anytime for free."
Everyone was silent for a few seconds.
The vicar finally said, "Oh dear. I'll be sure to pray for them. Well done on such a charitable work, good fellow."
The doctor added, "Yes, well done to you. I'll make sure they get the best treatment at the eye unit in the hospital too."
The engineer, arms folded, tapping his feet said, "Ok, but if they're blind, then why can't they play at night?"