St. Johns college of Engineering & Technology

Approved By AICTE, New Delhi, Recognized by UGC under 2(f) & 12(B),
An ISO 9001:2015 Certified Institution and Affiliated to JNTUA, Antapuramu.
Yerrakota, Yemmiganur-518360,Kurnool Dt., AP

DEPARTMENT OF
ELECTRONICS & COMMUNICATION ENGINEERING

TECHNICAL MAGAZINE

Education with Innovation

Volume-1

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ELECTRONIKA **Magazine Editorial Members**

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G Sai Teja– IV Year ECE

Ms K Sai Pranavi – III Year ECE

Mr D Ahmed Aswaq – III Year ECE

ABOUT THE COLLEGE

St. Johns College of Engineering Technology, the pride of Yemmiganur town, was established in the year 2001. Seven kilometers away from the Yemmiganur town, the college campus nestles amidst lush and luxuriant greenery in a sprawling 27 acres land. The College has specious, well ventilated, well equipped, and well furnished Laboratories, Workshops, Class Rooms, Drawing Halls, Hostels and a well stocked Central Library in addition to departmental libraries.

The college is affiliated to JNTUA, Anantapur and it is approved by AICTE, New Delhi and the Government of Andhra Pradesh. Beginning with a modest intake of 180 students in 4 branches in 2001, the college has grown in size and infrastructure to admit 540 students in 6 branches of B.Tech. Responding to the demand for Post Graduate courses in engineering, Management and Computer Applications, the college has started M.Tech Courses in 9 Specializations, and offer MBA course.

VISION OF THE COLLEGE

1. To be a preferred technical institution by the first generation learners from rural background.
2. The institute in turn will holistically elevate the students into technically strong and ethically sound individuals thereby moulding characters and career.
3. Partnering with them to contribute towards the advancement of community, region and nation as a whole.

MISSION OF THE COLLEGE

Engage all the stake holders and utilize the infrastructure to develop technically sound employable human resources to translate our vision into a reality.

ABOUT THE DEPARTMENT

ECE is the engineering course to learn about electronics and communications. Its implementation is wide spread, and it is almost found in all streams. Sporty presents this course backed up with stellar teaching performance and high end labs.

The beauty of electronics is it is used everywhere. From electronic goods manufacturer to hospitals, it is implemented in many devices. So, the future for this stream is highly positive.

The microprocessors, mother boards, picture tubes, LED, LCD, etc. are various electronic items, and you know about the impact they have created on billions of people and world's economy. You can be a part of this huge niche by getting into ECE at the engineering level.

Apart from the electronics, you also have communications in this engineering. It is important in industries like telecommunications, posts & telegraph, defense, etc. The communications department is very crucial for important aspects, like country protection, etc.

The Department of ECE was established in 2001 with an intake of 60 students in the UG program.

The ECE department offers Undergraduate programs. Electronics & Communication Engineering is one of the rapidly advancing fields in technological development arena with emerging ideas. The department aims at training students advanced cutting edge technologies and imparts values so that they are equipped to deal successfully any challenges in life, by exploring and creating new avenues. Students are taught to recognize their potential & use it for their best advantage. Our students are performing well in academics and they are encouraged in R&D activities and publishing papers in journals. They are participating in symposiums and seminars in various colleges and universities. They won the prizes in these events.

VISION OF THE DEPARTMENT

To impart Technical education to the rural students and making them employable in the respective domain

MISSION OF THE DEPARTMENT

1. Up gradation of laboratories with state of the art equipment as the right tools of pedagogy for better lesson delivery
2. Providing bridge classes for average and slow learners.
3. Arranging interactive sessions with industries and thereby enhance the practical knowledge and technical skills of the student.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

1. Graduates will be able to stimulate continuing education with their existing knowledge in the field of Electronics and Communication Engineering.
2. Prepare graduates to practice their profession with ethics, integrity, and social responsibility in a global context.
3. Participate in lifelong learning activities to continue their professional development.

PROGRAM OUTCOMES (POs)

1. **Engineering knowledge**: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions**: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with

appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations

4. **Conduct investigations of complex problems**: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

PROGRAM SPECIFIC OBJECTIVES (PSOs)

1. Should be able to understand the concepts of Electronics & Communication engineering and their applications in the field of semiconductor technology, consumer electronics, embedded system, communication/ networking and other relevant areas.

2. Should have an ability to apply technical knowledge and usage of modern hardware and software tools related to Electronics & Communication engineering for solving real world problems.

WORD'S FROM THE PRINCIPAL

I am very happy that ECE department is releasing the magazine "ELECTRONIKA" as a fore runner of the department activities for this year. Hereafter it is to be released every year. A noteworthy point is it not only marks the achievement of the department but also act as a technical platform to bring out the hidden talents of the students and the faculty.

To get better placements in core industries it is not sufficient to learn fundamentals only. The students have to know recent developments in all the fields of Electronics and Communication Engineering. Now a days internet is paving the ways for acquiring the knowledge in the latest developments in almost all the field of engineering. Magazines in general will help the faculty and students to know the latest developments in the fields of Electronics and Communication Engineering. It will will surely help the students to improve their application skills, communications skills and organizztional skills. I owe my hearty appreciation to the department of ECE. I wish them 'Success ' in all their future endeavors.

-Dr V Veeranna
Principal

WORD'S FROM THE HOD

We, SJCET strongly believe that the holistic development of students is possible by focussing on core areas which are -Concept based learning and comprehensive Industrial Exposure. We are nurturing our students according to their areas of interest. Students are groomed and trained in accordance in their interested .We are providing concept based learning to our students. To achieve this, we have highly qualified, experienced and dynamic faculty members, competent lab staff, well equipped advanced Labs to meet the curriculum.

Finally, I am happy to say that since we are providing concept based learning, good quality of training and projects our students are in a position to fetch jobs from reputed companies.

- Dr K Sudhakaru
  HOD

FROM THE EDITOR'S DESK

It gives us immense pleasure to launch the first issue of this magazine which creates a new platform for exchange of information on all aspects of Electronics and Communication Engineering. Forthcoming issues of this magazine will be published in each year. At the outset we express our gratitude to our HOD Dr K Sudhakaru for fiving us this opportunity. The staff and students came up with many interesting articles on recent trends in all the domains.

DEPARTMENT TOPPERS

ACADEMIC YEAR 2020- 21

S NO	PHOTO	STUDENT NAME	PERCENTAGE
IV YEAR			
1.	17G31A0428	GADIGE JYOSHNA (IV Year II Sem)	87.60
2.	17G31A0407	B YAMUNA (IV Year I Sem)	81.00
III YEAR			
3.	18G31A0445	PADMASALE BALLAM SAI SAHITHI (III Year II Sem)	80.89

4.	18G31A0445	PADMASALE BALLAM SAI SAHITHI (III Year I Sem)	82.25
	II YEAR		
5.	19G31A0413	DOCTOR AHEMED ASWAQ (II Year II & I Semesters)	72.44
6.	19G31A0439	MADIRE MAHAZABEEN (II Year & I Semesters)	7.35 (CGPA)
	I YEAR		
7.	20G31A0401	ADIKI TEJASRI (I Year II Semesters)	85.78

8.	20G31A0413	CHILAKA ANITHARANI (I Year I Semesters)	86.44

Students Achievements

(2020-21)

"Success is not final; failure is not fatal; it is the courage to continue that counts"

– Winston Churchill

GOLLA VEERESH (17G31A0409) – Sports: Represented St. Johns College of Engineering and Technology in Long Jump and secured 2st place in NARAYANA ENGINEERING COLLEGE, GUDUR-National Level Inter-Engineering Sports Fest

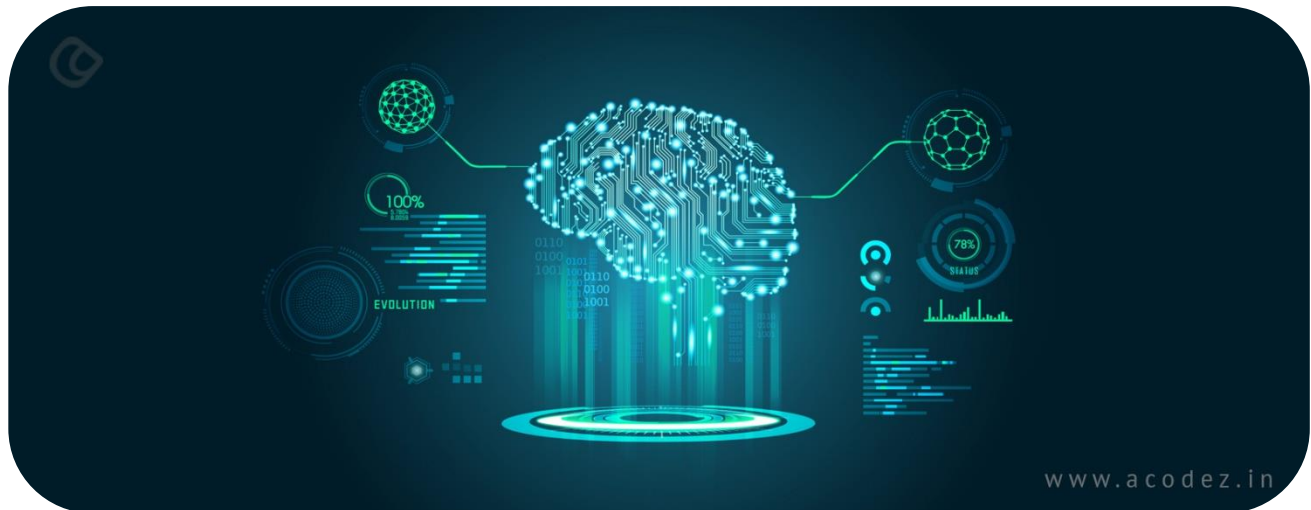**NAGAMMALLI JYOTHI PRAKASH (17G31A0440) – Sports:** Represented St. Johns College of Engineering and Technology in Carrom and secured 2st place in Kakinada Institute of Technology & Science, Samarlakota

Artificial Neural Networks

M Mahazabeen

II ECE

An Artificial Neural Network (ANN) is an information processing paradigm that is inspired by the way biological nervous systems, such as the brain, process information. The key element of this paradigm is the novel structure of the information processing system. It is composed of a large number of highly interconnected processing elements (neurons) working in unison to solve specific problems. ANNs, like people, learn by example. An ANN is configured for a specific application, such as pattern recognition or data classification, through a learning process. Learning in biological systems involves adjustments to the synaptic connections that exist between the neurons. This is true for ANNs as well.

Why use neural networks?

Adaptive learning: An ability to learn how to do tasks based on the data given for training or initial experience. Self-Organization: An ANN can create its own organization or representation of the information it receives during learning time. Real Time Operation: ANN computations may be carried out in parallel, and special hardware devices are being designed and manufactured which take advantage of this capability. Fault Tolerance via Redundant Information Coding: Partial destruction of a network leads to the corresponding degradation of performance. However, some network capabilities may be retained even with

major network damage. Neural networks take a different approach to problem solving than that of conventional computers. Conventional computers use an algorithmic approach i.e. the computer follows a set of instructions in order to solve a problem. Unless the specific steps that the computer needs to follow are known the computer cannot solve the problem. That restricts the problem solving capability of conventional computers to problems that we already understand and know how to solve. But computers would be so much more useful if they could do things that we don't exactly know how to do. Neural networks process information in a similar way the human brain does. Neural networks process information in a similar way the human brain does. The network is composed of a large number of highly interconnected processing elements (neurones) working in parallel to solve a specific problem. Neural networks learn by example. They cannot be programmed to perform a specific task. The examples must be selected carefully otherwise useful time is wasted or even worse the network might be functioning incorrectly. The disadvantage is that because the network finds out how to solve the problem by itself, its operation can be unpredictable.

Into the Shoes of a Computer Engineer

B K Yasmeen
II ECE

Life of a computer engineer is filled with equal amounts of bliss and grief. As I stepped into college, like any first year of other departments, I spent my days finding friends. My concentration was focused on how to act as someone who is out of school. The more I tried inculcating this attitude, the more I failed. Subjects like PHYSICS, CHEMISTRY, ENGLISH, and MATHEMATICS did give me a hope that I can survive 4 years of under-graduation. But ENGINEERING GRAPHICS and ELECTRONIC DEVICES AND CIRCUITS were nightmares of their own making. Once the brains used to concentrate on projec-tions of various solids, as time passed on it was filled with Kirchhoff's Laws. After about three weeks, I settled down as a college student: handling problem as a professional, finding out rules of the college one by one upon break-ing those LABSESSION were slow poisons, RECORD corrections nightmares of their own making. Once the brains used to concentrate on projec-tions of various solids, as time passed on it was filled with Kirchhoff's Laws. After about three weeks, I settled down as a college student: handling problem as a professional, finding out rules of the college one by one upon break-ing those LABSESSION were slow poisons, RECORD corrections were equal to TRIUMPH. Discussing results amongst friends and brooding upon grades happened for the one last time. SECOND YEAR started with the ecstasy of entering the department. Little did I realize that this joy was short lived. My WAYNE THOMASI was the main VILLAIN of my picture. DATA STRUCTURES joined OOPS to give sol-ace. ENVIRONMENT ENGINEERING was the "SUPER MAN" who saved me from the clutches of ELECTRON ICS PAPER (DEMONS). God didn't stop His plays even after this!! He produced subjects like MICROPROCES-SOR AND MICROCONTROLLERS to share our minds. This subject gave me and my class mates the least hope that we will complete our 4th semester without ARREARS.

To add ghee to the fire, Mr.PQT plotted his own plans against us. OPERATIONS SYSTEMS one side was filled with tonic ire., problems and direct questions. DBMS on the other hand gave us a feel of walking on a sword. COM-PUTER ARCHITECTURE wounded us with its WHIP' IDAA is the secret of success!

I came to a conclusion that I don't even stand a chance of survival which is the CONTRADICTION of my previous assumption. This sentence is typical DISCRETE MATHS style. Now in year 3, my day starts with NFA's & DFA's who are not at all responsive even if it's a small problem. It continues with COMPUTER NETWORKS just twisting around me and SYSTEM SOFTWARE algorithms swiding in my head. Requirement analysis, mapping, coding, test-ing, feedback: 5 KEYWORDS OF MY LIFE which decide whether I can depend upon SOFTWARE ENGINEEIRNG for FUTURE. Thanks to BUSINESS ENGLISH COMMU-NICATION classes, the only time myself and my friends RELAXXXXXX.

To add to our worries from this year INTERNALS are into ANNA UNIVERSITY'S HANDS!! Why, why only for us??? My experience will continue for some more months. So I salute my SENIORS who have already crossed these hurdles. HENRY VAN DYKE correctly said

"TIME IS TOO SLOW FOR THOSE WHO WAIT, TIME IS TOO SWIFT FOR THOSE WHO FEAR, TIME IS TOO LONG FOR THOSE WHO GRIEVE, And TIME IS TOO SHORT FOR THOSE WHO RE-JOICE."
Now, can somebody HELP ME find which category I fall into........