

# JNN

## TECH HERTZ'23

NEWS LETTER

**JUN 2023 - AUG 2023**



**DEPARTMENT OF  
Electronics and Communication  
Engineering**

# ABOUT



**J.N.N INSTITUTE OF  
ENGINEERING  
AUTONOMOUS**

NAAC 'A' Grade | Approved by AICTE | Affiliated to Anna University

- J.N.N Institute of Engineering has been at the forefront of imparting high-quality technical education in the state of Tamil Nadu. With state-of-the-art infrastructure in all branches of engineering, dedicated and qualified staff, a highly conducive environment for the teaching-learning process, and a lush green campus, J.N.N stands out as a professionally managed institution. The institute has consistently produced outstanding engineers who have excelled in their careers, occupying responsible positions in some of the best-known enterprises in India.
- Promoted by the Alamelu Ammaal Educational Trust, formed in memory of the Chairman's mother, J.N.N Institute of Engineering is located just 25 km away from the city of Chennai. It has well-connected routes frequented by city buses, making it accessible for students, staff members, the community, and visitors who enjoy the aesthetic view of the college with its green color shades.
- The institution provides university-level education through a wider and dynamic network, catering to the demands of both university-level education and the economic development of the region, with wider opportunities. The location and range of academic offerings at both UG and PG levels have lifted the intake capacity regionally and nationally. The infrastructural development also portrays enrollment growth.
- J.N.N strives to impart high patterns of discipline with futuristic techniques through dedicated staff members. It is a place for making students technologically superior and ethically strong. The environmentally friendly place of opportunities enhances skills and personal development. J.N.N has also signed Memorandums of Understanding with top-level industries and training providers to develop new skills and abilities.



## **VISION**

- Cultivating innovative and entrepreneurial Electronics and Communication Engineering graduates to ethically address global challenges through quality teaching and learning practices.

## **MISSION**

- To facilitate a state-of-the-art teaching-learning process, imparting comprehensive knowledge in electronics and communication engineering and related interdisciplinary areas.
- To foster a sense of curiosity, critical thinking and ethical practices in students, preparing them for a continuous learning.
- To instill innovative team work and industry collaboration for enhancing entrepreneurial skills, employability and research capabilities in graduates.



## PROGRAMME OUTCOMES

**PO1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO2: 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.

**PO3: 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.

**PO4: 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.

**PO5: 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.

**PO6: 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.

**PO7: 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.

**PO8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

**PO9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

**PO10: 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.

**PO11: 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.

**PO12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

## **PROGRAMME EDUCATIONAL OBJECTIVES (PEO'S)**

**PEO 1:** Our graduates will have skills to become successful in academics, industries, or as entrepreneurs.

**PEO2:** Our graduates with a research inclination will be solving various complex social issues using advanced tools and technologies.

**PEO3:** Our graduates will practice engineering with ethics, human values, and environmental consciousness.

## **PROGRAMME SPECIFIC OBJECTIVES (PSO)**

**PSO1:** Analyse and develop solutions in domains like IOT, Embedded, VLSI and other emerging technologies.

**PSO2:** Understand and architect wired and wireless analog and digital communication systems and products.

# LEADERSHIPS

## CHAIRMAN



**Shri. S. Jayachandran B.Sc., B.L**  
Founder & Chairman,  
J.N.N Group of Institution.

We are committed in opening up high quality tertiary education to students and to provide opportunity to acquire, understand and apply disciplinary and inter-disciplinary knowledge as well as related skills and attitudes, to think rationally and to enhance their personal development. Situated in the capital city of Tamil Nadu, our college bridges the education and values in its relationship with business, government, research organizations and universities. I would like to reaffirm my sincere personal commitment to help each of you to succeed your academic endeavors. I would like to reaffirm our sincere personal commitment to help each to succeed in your academic endeavors. I heartily welcome our students and wish them the very best for a successful and glorious future.

## VICE CHAIRMAN



**Mr. Naveen Jayachandran**  
Vice-Chairman,  
J.N.N Group of Institutions.

Our motto, “Learning Today. Leading Tomorrow”, permeates every aspect and activity at J.N.N. Over the past 12 years, J.N.N Institute of Engineering has successfully imbibed several of the proven best practices from the best of engineering institutions around the world, adapted them to make them better suited to the ground realities and introduced many of its own innovations in engineering education. Together, these have ensured that an educational experience at J.N.N Institute of Engineering is truly transformational for thousands of aspiring young transformational for thousands of aspiring J.N.N Institute of Engineering. has been very proactive in recognizing the global and national trends in shift in the technical landscape and has been pioneering several innovations in technical education.

## PRINCIPAL



**Dr. K. Ganesan**

At J.N.N Institute of Engineering, we believe in providing the best learning experience through an experiential learning process that has been devised and drawn up by the management, faculty members, and administrators together. We have a common purpose mindset and language that permeates throughout the whole institution, and we are guided by four key principles:

- (i) Assure the best learning outcomes through strategic planning.
- (ii) Create seamless service through engineered operational quality.
- iii) Build a strong relationship among the stake holders.
- (iv) Delight the stakeholders with personalized care of service quality. We are delighted to offer our services to prospective students and other stakeholders. The management, faculty members, and staff are committed to contributing significantly to the growth and support of our students to help them reach the zenith of their prospective professional career and personal life. We are always here to address your queries and provide you with the best education possible.

## HEAD OF THE DEPARTMENT



Dear Students, Faculty, and Readers, It is my pleasure to share updates and achievements from the Department of Electronics and Communication Engineering (ECE). Our Department continues to uphold its commitment to academic excellence, innovative research, and fostering a vibrant learning environment. Thank you for your continuous support and enthusiasm together, we can achieve greater heights

**“INNOVATION IS THE ABILITY TO SEE THE CHANGE  
AS AN OPPORTUNITY – NOT A THREAT”**

**-STEVE JOBS**

**Dr. D. Joseph Jeyakumar**



# LIST OF FACULTY

S.NO	NAME OF THE FACULTY	QUALIFICATON	DESIGNATION
1.	Dr. D. Joseph Jeyakumar	M.E, Ph.D	Professor
2.	Mr. U. Siddharth Nambi	M.E	Associate Professor
3.	Mrs. R. Nithya	M.E	Assistant Professor
4.	Mr. M. Mariselvam	M.E	Assistant Professor
5.	Mrs. N. Malathy	M.E	Assistant Professor
6.	Mrs. P.B. Smitha	M.E	Assistant Professor
7.	Mr. K.T. Pannerselvam	M.E	Assistant Professor
8.	Mrs. Mullaikodi	M.E	Assistant Professor
9.	Mr. G. Ayyapan	M.E	Assistant Professor
10.	Dr. J. Vijay Anand	M.TECH, Ph.D	Associate Professor
11.	Mr. J. Praveen Kumar	M.E	Assistant Professor
12.	Ms. B. Shanmathi	M.E	Assistant Professor



## 1. Unlock Your Full Potential with PrepInsta Prime Access

*Date: 6th August 2023*



**Presenter:** Mr. G. Ram Kumar, National Lead - Strategy Alliances, PrepInsta Technology Pvt. Ltd.

This seminar provides a deep dive into the PrepInsta Prime Access program, which serves as a powerful platform to help students and professionals enhance their skills and secure successful careers. Mr. G. Ram Kumar will discuss how PrepInsta can unlock various career opportunities and provide access to tailored learning resources. The session will explore how you can chart your path to success using PrepInsta's Prime Access.



## 2. Learn Power BI in Just 2 Days

*Dates: 16th August 2023 & 17th August 2023*

**Presenter:** Mr. Venkatesh Prasanna B.R, Freelance Analytics Trainer



Power BI is one of the most sought-after skills in the world of data analytics, and in this 2-day intensive seminar, Mr.

Venkatesh Prasanna B.R will teach you how to use Power BI efficiently. The session will focus on the basics of Power BI, including data visualization, creating interactive reports, and utilizing advanced features that are crucial for professionals in analytics.



### **3. International Study Opportunities in the USA and Europe**

***Date: 7th August 2023***

**Presenter:** Mr. H. Abdul Navas, Senior Manager, KC Overseas, Chennai

In this informative seminar, Mr. H. Abdul Navas from KC Overseas will provide insights into international study opportunities in the USA and Europe. The session will cover various aspects of studying abroad, including visa processes, scholarships, university selections, and the benefits of global education. This seminar will help prospective international students make informed decisions about pursuing higher education abroad.



# EMBEDDED TESTING



## IMPORTANCE AND TRENDING CONCEPTS IN SOFTWARE AND HARDWARE TESTING TOOLS FOR EMBEDDED SYSTEMS

### >>> READ MORE

In today's fast-paced technological landscape, ensuring the reliability and efficiency of embedded systems has become a critical priority for industries ranging from automotive to healthcare and IoT. Testing tools for both software and hardware play a pivotal role in achieving this reliability. Here's why they matter and what's trending in the field:

### READ MORE <<<

The Embedded Testing Workshop offers a unique opportunity to explore these cutting-edge tools and techniques. Participants will gain hands-on experience with industry-leading testing frameworks, learn from expert insights, and understand how to implement best practices in their projects.

Stay ahead of the curve by learning how to leverage software and hardware testing tools to ensure the success of your embedded systems. Join us at the workshop to innovate and inspire!

## WHY ATTEND THE EMBEDDED TESTING WORKSHOP?

# IMPORTANCE OF SOFTWARE AND HARDWARE TESTING TOOLS

**Ensuring Reliability:** Embedded systems often operate in critical environments where failure is not an option. Testing tools help identify vulnerabilities and ensure robustness.

**Cost Efficiency:** Early detection of defects reduces the cost of fixing issues later in the product lifecycle.

**Performance Optimization:** Testing tools analyze system performance under various conditions, ensuring that embedded systems meet design specifications.

**Compliance and Certification:** Many industries require products to adhere to strict regulatory standards. Testing tools facilitate compliance by providing the necessary verification and validation.

## TRENDING CONCEPTS IN EMBEDDED TESTING

**Automated Testing Tools:** Automation is revolutionizing embedded testing, offering higher accuracy and faster feedback loops. Tools like VectorCAST and TestComplete are gaining traction.

**Hardware-in-the-Loop (HIL) Testing:** Simulating real-world scenarios with HIL systems ensures that hardware and software interact seamlessly. **AI-Driven Testing:** Machine learning algorithms are now being integrated into testing tools to predict defects and optimize testing strategies.

**Cybersecurity Testing:** With embedded systems increasingly connected to the internet, security testing tools are crucial for identifying and mitigating vulnerabilities.



# WHY TESTING TOOLS MATTER IN EMBEDDED SYSTEMS



**Enhancing System Reliability:** Embedded systems often function in critical environments, such as medical devices or automotive safety systems. Testing tools ensure that these systems operate without failure under all conditions.

**Reducing Development Costs:** Testing tools allow early identification of defects, reducing the time and cost of fixing them during later development stages or after deployment.

**Improving Time-to-Market:** Automated testing frameworks accelerate the validation process, enabling faster product delivery without compromising quality.

## REAL-WORLD IMPACT OF EMBEDDED TESTING

Testing tools are pivotal in real-world applications:

**Automotive:** Validating the performance of Advanced Driver Assistance Systems (ADAS) under various environmental conditions.

**Healthcare:** Ensuring the accuracy and reliability of medical devices like pacemakers and infusion pumps.

**Aerospace:** Testing avionics systems for fault tolerance and real-time responsiveness.

## >>> EMERGING TRENDS IN TESTING

**Virtual Prototyping and Simulation Tools:** These tools allow developers to test software on virtual hardware before physical prototypes are ready, significantly speeding up the development cycle.

**Edge Computing and IoT-Specific Testing:** With the proliferation of IoT devices, testing tools are adapting to handle low-latency, high-performance requirements specific to edge computing.

**AI and Machine Learning in Testing:** Artificial intelligence is being used to predict failure points, optimize test coverage, and even generate test cases automatically.

**Functional Safety and Cybersecurity Testing:** Tools focusing on fault injection, penetration testing, and secure boot validation are becoming crucial to address safety and security concerns in embedded systems.

## WHY YOU SHOULD ATTEND

This workshop is tailored for professionals seeking to stay ahead in the dynamic field of embedded systems. Whether you're a developer, tester, or systems architect, you'll gain practical insights and skills to implement advanced testing methodologies effectively.

Register now to secure your spot and take the first step toward mastering embedded testing tools!





## **EDITORIAL BOARD**

### **Editorial Members**

#### **Faculty Coordinators:**

Ms. N. Malathy

#### **Student's Convenors:**

1. Godson J, 3<sup>rd</sup> year
2. David Abishek. M, 2<sup>nd</sup> year
3. Balavignesh. S, 1<sup>st</sup> year