T.J.S. ENGINEERING COLLEGE

(An Autonomous Institution)

Department of

ELECTRONICS AND COMMUNICATION

MAGAZINE

T.J.S. ENGINEERING COLLEGE, GNT ROAD,
T.J.S NAGAR, PERUVOYAL, NEAR KAVARAIPETTAI,
PUDUVOYAL, TAMIL NADU 601206



YEAR 2024 - 2026

Volume 1
Issue 1

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ACKNOWLEDGEMENT

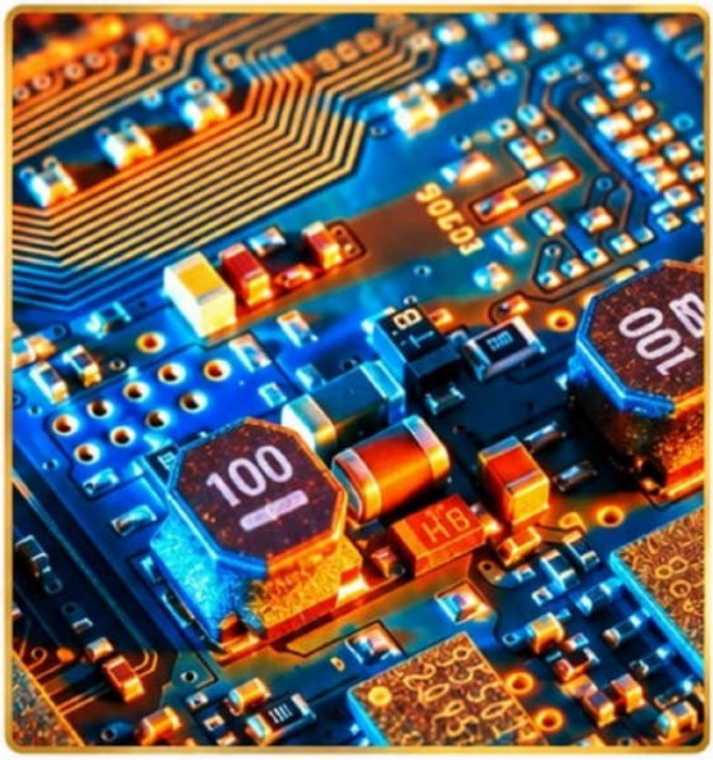
We are delighted to present this magazine as a reflection of the creativity, knowledge, and achievements of the **Department of Electronics and Communication Engineering (ECE).**

We extend our heartfelt gratitude to our **Head of the Department, faculty members, and Supporting staffs** for their constant encouragement, guidance, and valuable support throughout the creation of this magazine. Their inspiration has been instrumental in bringing our ideas and efforts together.

We sincerely thank all the **students and contributors** who shared their articles, ideas, achievements, experiences, and creative works. Their enthusiasm and active participation have made this magazine a vibrant representation of the ECE community.

We also express our appreciation to everyone who contributed directly or indirectly to the successful completion of this magazine. Above all, we thank our department for providing an environment that encourages **innovation, learning, creativity, and excellence.**

This magazine is a celebration of our journey, our achievements, and the spirit of ECE.



Vision

Envision the upliftment of students with technological distinction and fulfill the needs of the industry and society with professional and moral values.

Mission

- To bring technical competency and to provide quality education to the students in the field of Electronics and Communication Engineering.
- Developing the state-of-the-art infrastructure for effective teaching and learning process.
- Creating awareness and thirst for lifelong learning through interaction with outside world regarding technological trends and entrepreneurship with ethical values.
- Nurture and retain faculty and technical manpower.

ABOUT THE DEPARTMENT

The Department of Electronics and Communication Engineering (ECE) is dedicated to providing quality education, fostering innovation, and solving real-world problems. We offer a dynamic curriculum that integrates the best of technology. Our curriculum includes theoretical knowledge with practical exposure through state-of-the-art laboratories.

We emphasize hands-on learning, industry interaction, and research to develop competent professionals in areas like communication systems, signal processing, VLSI, embedded systems, IoT, antennas, and wireless technologies.

With state-of-the-art laboratories, experienced faculty, and industry collaboration, we empower students to solve real-world problems and contribute meaningfully.

About Our MANAGEMENT



THE CHAIRMAN MESSAGE

"Kalvineri Kavalar"

Shri TJ. Govindarjan, BA, EX MLA
Chairman,TJ.S. Group of Institutions, Chennai.

The continuous upgrade of facilities has positioned the institute at the forefront of education in Tamil Nadu. As the world rapidly evolves into a technology-driven global village, developing a well-trained professional workforce is essential for India's agricultural, scientific, and industrial growth. Recognizing the critical role to higher education in meeting these intensifying global demands, TJ.SEC remains fully committed to its motto: "Building a better nation through quality education."

DIRECTOR MESSAGE

Shri.A.Kabilan BA, BL,
Director, TJ.S.Engineering College, Chennai.

At TJ.S.E.C, we envisioned an institution dedicated to serving the nation's needs. I am incredibly proud that our continuous efforts to innovate the curriculum, foster a strong research culture, and upgrade our infrastructure have elevated us to a top-tier institution in the region. It is deeply rewarding to see industry, government, and the community recognize our commitment to providing value-based education. I am confident that our shared successes will make our global alumni proud and inspire us all to reach even greater heights in the coming years.





PRINCIPAL MESSAGE

Dr. J. Prakash, M.E., Ph.D. MISTE., PRINCIPAL

Our mission is to empower learners to grow holistically, developing independent thinkers and problem solvers who strive for excellence in both the classroom and and society. I warmly welcome your active involvement in making TJ.S. Engineering College a premier institution for technical education. Together, we will execute a strategic plan with clear targets to continuously elevate our teaching methods, assessments, and overall academic experience. Engineering demands facing complex challenges with scientific knowledge and innovation, and I assure you that your deep commitment to your studies here will bear lifelong, rewarding fruits.

FACULTY PROFILE

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



Dr. S. VELMURUGAN, M.E., Ph.D.,MISTE.,

Professor & Head/ECE

Dr. Velmurugan Sundaram completed his BE degree at TCET, affiliated to Madras University in the Department of Electronics and Instrumentation Engineering and obtained first class with distinction. He completed his post-graduation degree in Applied Electronics from Thanthi Periyar Govt. Institute of Technology, Vellore under the affiliation of Anna University, Chennai. Finally, he completed his Ph.D. at St. Peter's Institute of Higher Education and Research, Chennai, Tamil Nadu, India. Thesis entitled "Secure and Distributed Data in Wireless Sensor Networks".He has gained year expenence as 24 Year in Teching



Dr. M. SATHYA PRIYA,M.E., Ph.D.,

Professor

She has finished her B.E in ECE from Arulmigu Meenakshi Amman Engineering College in the year 1998, Madras University, completed her M.E in Applied Electronics from Anna University in the year 2006. She completed her Ph.D from ANNA University under faculty of information and communication Engineering in the year 2018. She has more than the 2000s of experience in teaching. She guided many UG & PG projects under her supervision. Published more than 15 papers in international journals and patents. She sent two proposals to Tamil Nadu chief ministers grant scheme. Her area of interest is Artificial Neural Networks (ANN).



Mrs. M. MARY GRACE NEELA, M.Tech.,

Assistant Professor

She is a dedicated and accomplished professional with a strong passion for knowledge, innovation, and continuous learning. She has successfully completed her M.Tech, marking a significant milestone in her academic journey and strengthening her expertise in the field of technology.

Her pursuit of higher education reflects her commitment to academic excellence and professional growth. With a keen interest in learning and a determination to embrace new challenges, she continues to expand her horizons and develop her capabilities. Her dedication, perseverance, and positive approach serve as a source of inspiration, reflecting her vision of achieving excellence and making a meaningful contribution to the academic community.



Mr. P. K. SANTHOSH, M.E., (Ph.D).,

Assistant Professor

He is a distinguished academician whose journey reflects a deep commitment to knowledge, innovation, teaching, and research. With an M.E. and doing Ph.D, he has pursued higher education with dedication and a strong desire to contribute to the advancement of his field.

His academic journey stands as a reflection of perseverance, intellectual curiosity, and a continuous quest for excellence. With a passion for nurturing young minds and encouraging research-oriented thinking, he strives to create an inspiring and enriching learning environment for students.

Through his dedication to education and research, P.K. Santhosh continues to inspire learners, promote academic growth, and contribute meaningfully to the development of the educational community.

Faculty Profile

DEDICATED FACULTY • BRIGHTER FUTURES



Ms.R.JAYASRI, M.E.,

Assistant Professor

She is a dedicated Electronics and Communication Engineering professional with a strong academic background and a passion for teaching. She completed her B.E. in Electronics and Communication Engineering from T.J.S. Engineering College, affiliated with Anna University, during 2019-2023. Driven by a keen interest in advanced Communication technologies, she went on to pursue her M.E. in Communication Systems at Panimalar Engineering College, affiliated with Anna University, completing the programme in 2025.

Alongside her academic journey, she has gained one year of teaching experience, enriching her expertise through meaningful engagement with students and the academic community. Her combination of technical knowledge, academic excellence, and teaching experience reflects her commitment to continuous learning and professional growth.



Mrs.I. RAGASUDHA, M.E

Assistant Professor

With great focus on creating an engaging learning environment where students can connect theoretical concepts with practical applications.

My academic projects and research activities have further strengthened my interest in developing technology-oriented solutions. My research activities which mainly specializes in embedded and networking so I guide the students to innovate more projects and research papers.



Mr.S. RAM KUMAR, D.ECE

Lab Instructor

He is a dedicated and responsible professional with a strong foundation in Electronics and Communication Engineering. He completed his Diploma in Electronics and Communication Engineering (ECE) and has developed valuable technical knowledge and practical skills in the field. He is currently serving as a Lab Assistant, where he supports laboratory activities, assists students in practical sessions, and helps maintain a well-organized and effective learning environment. His technical expertise, commitment, and supportive approach make him a valuable member of the academic community.



Mrs.N.PARAMESHWARI, B.E.,

Lab Instructor

She completed Her Diploma in Electronics and Communication Engineering (ECE) at Sri Durga Devi Polytechnic College in 2014. I further pursued my B.E. in Electronics and Communication Engineering at T.J.S. Engineering College.

My academic journey has strengthened my technical knowledge and practical skills in engineering.

This academic progression reflects my dedication to higher education and professional development. I aspire to expand my expertise and contribute meaningfully to the field of technology and innovation.

LEARN • GROW • CONTRIBUTE

NPTEL Achievements of our Staff (2025-26)

Learn Apply Grow



Dr. S. Velmurugan

Dr. S. Velmurugan, Prof. & Head/ECE successfully completed the NPTEL Online Certification course titled "Introduction to Internet of Things", offered by the Indian Institute of Technology (IIT), Kharagpur through the SWAYAM platform during January–April 2026. He secured an overall score of 79%, (Elite + Silver) demonstrating his commitment to continuous learning and professional excellence.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

DR S VELMURUGAN

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of 79 %

Online Assignments	23.13/25	Proctored Exam	55.5/75

Total number of candidates certified in this course: 43953

Jan-Apr 2026

(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

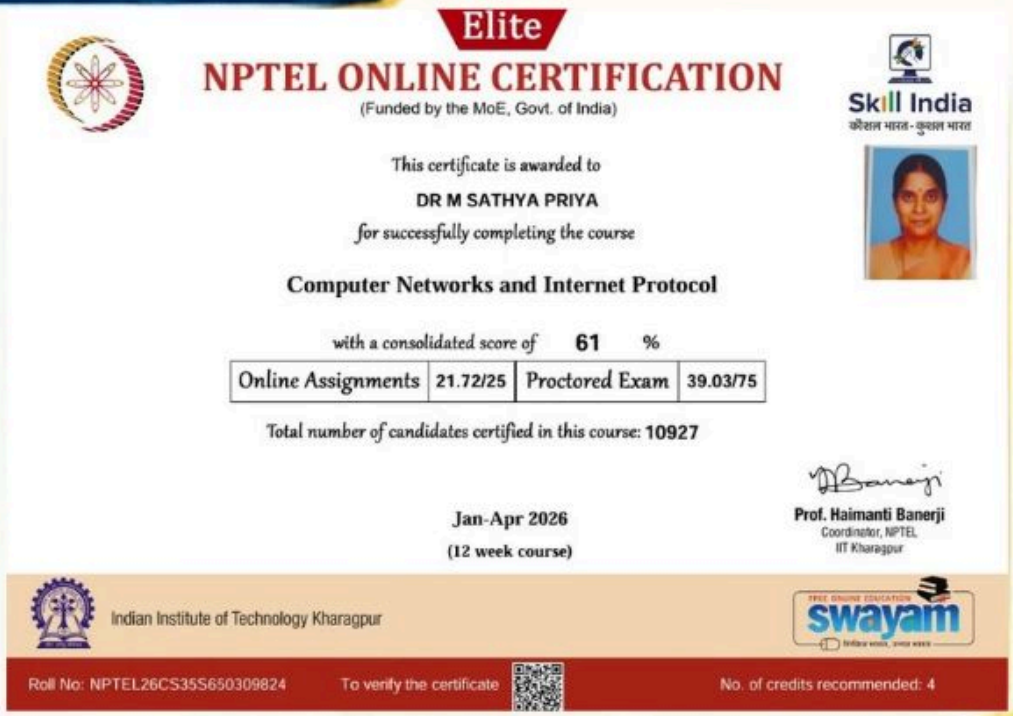
swayam

Roll No: NPTEL26CS37S1150307032 To verify the certificate No. of credits recommended: 4



Dr. M. Sathya Priya

Dr. M. Sathya Priya, Prof./ECE successfully completed the NPTEL Online Certification course titled "Computer Networks and Internet Protocol", offered by the Indian Institute of Technology (IIT), Kharagpur through the SWAYAM platform during January–April 2026. He secured an overall score of 61%, (Elite) demonstrating his commitment to continuous learning and professional excellence.



Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India
कौशल भारत-कुशल भारत

This certificate is awarded to

DR M SATHYA PRIYA

for successfully completing the course

Computer Networks and Internet Protocol

with a consolidated score of 61 %

Online Assignments	21.72/25	Proctored Exam	39.03/75

Total number of candidates certified in this course: 10927

Jan-Apr 2026

(12 week course)

Prof. Haimanti Banerji
Coordinator, NPTEL
IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL26CS35S650309824 To verify the certificate No. of credits recommended: 4

Knowledge Builds Better Tomorrow

Mrs.MARY GRACE NEELA., M.Tech.,





This is to certify that M.Mary Grace Neela has successfully completed the Digital Skills Readiness Program offered by Wipro, in collaboration with TalentNext.
The participant has demonstrated commitment to developing essential digital skills and professional competencies.

This certificate recognizes the successful completion of the program requirements, including foundational learning in Python and Data Science.We congratulate the participant in this achievement and wish her continued success in her academic and professional journey.
Ambitions Realized.

MS.R.JAYASRI, M.E.,



Ms. R.Jayasri, Assistant Professor at T.J.S. Engineering College, has actively participated in several Faculty Development Programs(FDPs).She completed the five-day NationalLevel FDP on "AI Applications Across Multidisciplinary Domains", organized by the Department of ECE in association with Vertz International.



She also successfully completed AICTE-ATAL FDPs on Quantum Intelligence, Cyber Defense, and Space Technologies.Additionally, she completed a 40-hour FDP on "VLSI Design Flow from RTL to GDSII" at Rajalaksomi Institute of Technology.
These programs enhanced her knowledge of emerging technologies and advanced engineering concepts.Her participation reflects her commitment to continuous learning and professional development.These achievements contribute to strengthening her teaching expertise and technical knowledge in Electronics and Communication Engineering.







DEPARTMENT OF

ELECTRONICS AND COMMUNICATION ENGINEERING

CONNECT | INNOVATE | EXCEL

Small Steps Build Great Futures



ECLECTIC 2K25-26







The Department of Electronics and Communication Engineering conducted
A National Level Technical Symposium
"ECLECTIC - 2K25-26" on October 24, 2025.
Shri. G. Narendran, CEO, Cogent Tech Solutions, Chennai, Tamil Nadu, India, was the Chief Guest and inaugurated the Symposium. The Management members, Principal Dr. J. Prakash, and Head of the Department Dr. S. Velmurugan encourage and motivated the students to perform well in all fields. Students from various institution were participated. The best performers were appreciated by issuing Cash award during the valedictory functions.

TECHNICAL EXCELLENCE | KNOWLEDGE SHARING | INNOVATION IN ACTION | FUTURE READY

Innovation Today | Excellence Tomorrow

T.J.S. ENGINEERING COLLEGE
ECE DEPARTMENT

EVENTS

Talent | Dedication | Success



Circuit Debugging

Participants	M. Ragul and N. Karthigeyan
Achievement	Second Prize
Date	10 February 2026

M. Ragul and N. Karthigeyan brought pride to their institution by securing Second Prize in the Circuit Debugging event at a technical symposium held at Meenakshi Sundararajan Engineering College. Their achievement reflects their technical knowledge, logical thinking, troubleshooting abilities, and teamwork in identifying and resolving circuit-related problems.

Their accomplishment highlights their enthusiasm for engineering, practical problem-solving, and active participation in technical events. Their success serves as an inspiration to fellow students to explore technical challenges, enhance their skills, and strive for excellence in their academic and professional journeys.

Reels Making

Student Name	R. Elangovan
Achievement	Second Prize
Date	17 February 2026

R. Elangovan brought pride to the institution by securing Second Prize in the Reels Making competition at a inter-college event. This achievement highlights his creativity, digital storytelling skills, and ability to communicate ideas through engaging visual content.



His participation reflects a strong interest in digital media, content creation, and innovative communication. Through this accomplishment, he demonstrated creative thinking, visual presentation skills, and a commitment to excellence. His success serves as an inspiration to fellow students to explore their creative talents and participate actively in inter-college competitions.

Small Steps Big Achievements

DEPARTMENT ACHIEVEMENTS BY OUR STUDENT

Motivation

The Department of Electronics and Communication Engineering takes immense pride in the remarkable achievements of its students across academic, technical, professional, and co-curricular domains. Our students have actively participated in and excelled at technical symposiums, paper presentations, project exhibitions, hackathons, coding and innovation challenges, workshops, and various inter-collegiate competitions. Their accomplishments reflect a strong blend of technical knowledge, creativity, innovation, leadership, teamwork, and problem-solving skills. Through their consistent efforts and enthusiastic participation, students have earned prizes, awards, certifications, and recognition at various levels. These achievements stand as a testament to the department's commitment to nurturing talent, encouraging innovation, and providing students with opportunities to transform classroom learning into practical applications. The department continues to inspire and empower its students to explore emerging technologies, pursue excellence, and make meaningful contributions to the field of Electronics and Communication Engineering.

Internships & Industry Training

Practical industry exposure is essential for preparing Electronics and Communication Engineering (ECE) students to become skilled, adaptable, and industry-ready professionals. Our students actively participate in internships, industrial visits, workshops, and hands-on training programs that strengthen their technical knowledge and professional expertise. Key areas of exposure include Embedded Systems, VLSI Design, IoT, Robotics, Artificial Intelligence, Communication Systems, RF & Microwave Engineering, Signal Processing, Automation, and Semiconductor Technology. Through collaborations with industries and professional organizations, students gain experience in real-world engineering practices, modern tools, and emerging technologies. These experiences enhance problem-solving, communication, and project-management skills. The department encourages students to undertake industry-oriented projects and internships that bridge the gap between academic learning and professional requirements, helping them confidently pursue careers in core electronics, technology research, and interdisciplinary engineering fields.

Empowering Today's Students for a Brighter Tomorrow

TALENT | LEARNING | IMPACT

STUDENTS ACHIEVEMENT



At the heart of our department's academic excellence lies a strong commitment to nurturing talent, encouraging innovation, and celebrating student success. We take immense pride in the achievements of our Electronics and Communication Engineering (ECE) students, who have consistently demonstrated exceptional academic performance, technical expertise, creativity, and dedication across various fields.

Our students have actively participated in technical symposiums, national-level competitions, hackathons, project exhibitions, workshops, and research-oriented activities. Through their involvement, they have showcased their skills in emerging technologies such as Embedded Systems, VLSI Design, Internet of Things (IoT), Robotics, Signal Processing, Artificial Intelligence, 5G Communication, Antenna Design, and Wireless Communication. Their innovative projects and practical solutions reflect their ability to apply theoretical knowledge to real-world challenges.

The achievements of our students extend beyond academics, encompassing technical excellence, teamwork, leadership, and professional development. Their participation and accomplishments in intercollegiate events, technical contests, certification programmes, and industry-oriented initiatives demonstrate their enthusiasm for continuous learning and technological advancement.

> *"Real Experience Builds Real Skills"*

Learn Beyond Classrooms

Gain Industry Exposure

Build Career Readiness



P.Y.Srilaya

P. Y. Srilaya has successfully strengthened her technical and industry-oriented skills through internships and professional training with reputed organizations. She completed a 3-month Wireless Technician internship at Bharat Sanchar Nigam Limited (BSNL), RGMTTC Chennai, gaining practical exposure to telecommunications. She also earned a Broadband Technician – Skill Competency Certificate through Telecom Sector Skill Council (TSSC) – Skill India, under the recognized skill development framework. Additionally, she successfully completed a C++ Programming internship at Thiranex, enhancing her programming and technical knowledge. These achievements showcase her continuous learning, practical exposure, and commitment to professional development.



TSSC - Skill India
(Broadband Technician)



C++ Programming
Internship Certificate



BSNL - Wireless Technician
Internship Certificate

Your Effort | Our Support | A Brighter Future

T.I.S. ENGINEERING COLLEGE
ECE DEPARTMENT

STUDENT ACHIEVEMENTS

DREAM | LEARN | ACHIEVE



MAMATHASRI BOMMANGOLLA

AI Powered Executive – Communication Skills Program

- Duration : 45 Hours
- Conducted : 08 April 2026 – 22 April 2026
- Organized by : HCLTech

Mamathasi Bommangolla successfully completed the AI Powered Executive with Communication Skills Program conducted by HCLTech. The program was completed for a total duration of 45 hours. The training was conducted from 08 April 2026 to 22 April 2026. This program provided valuable exposure at AI-powered tools and effective communication skills. The successful completion reflects her commitment towards professional development and continuous learning. The certificate was issued on 30 April 2026.









KAYALVIZHI K

Data Analytics – NovaTech R&D Private Limited

- Duration : 90 Days
- Conducted : 29 Aug 2025 – 28 Nov 2025
- Organized by : NovaTech R&D Private Limited

Kayalvizhi has successfully completed a 90-Day Data Analytics training programme with NovaTech R&D Private Limited and earned a Certificate of Merit for her achievement in the Infinity Circuit – Techronics event. She also participated in various institution-level and industry events, gaining hands-on experience in the evolving world of technology.







OUR PROUD ACHIEVEMENTS

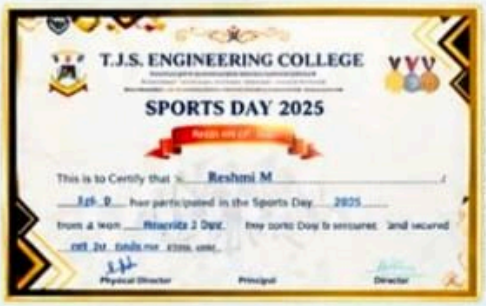
Small Steps Big Dreams



Reshmi.M

Reshm M has demonstrated her commitment to professional development and extracurricular excellence through her achievements in entrepreneurship, innovation, and sports. She successfully completed the Entrepreneurship & Small Business course under the ARISE FOR VYUOH programme, gaining valuable entrepreneurial knowledge and skills. She also earned recognition for her participation and achievement in the college Sports Day 2025 event. These accomplishments highlight her enthusiasm for learning, teamwork, leadership, and continuous personal growth.









Deepika.P

Deepika P has demonstrated her commitment to continuous learning and professional growth through achievements in entrepreneurship, technical training, and skill development. She successfully completed the Entrepreneurship & Small Business course under the ARISE FOR VYUOH programme, gaining valuable entrepreneurial knowledge and skills. She also earned recognition for her participation and achievement in the college Sports Day 2025 event. These accomplishments highlight her enthusiasm for learning, teamwork, leadership, and continuous personal growth.









Varsha.S

Varsha has Successfully completed professional training in IT and Data Analytics, gaining knowledge of data processing, analytical methodologies, and data visualization. Developed a strong foundation in interpreting datasets, identifying meaningful insights, and supporting data-driven decisions. Strengthened technical proficiency, analytical reasoning, and problem-solving capabilities relevant to industry requirements.







OUR PROUD ACHIEVEMENTS

Small Steps Big Dreams



DONESH.M

Donesh has Successfully completed training in Static Website Development and Dynamic Web Application Development. Gained foundational knowledge of HTML, CSS, and JavaScript for building responsive and interactive web interfaces. Developed an understanding of website structure, front-end development, and dynamic web functionality. Strengthened technical skills in web design, application development, and problem-solving. Acquired practical knowledge relevant to modern web development practices.









ILAIYARAJA.S

Ilaiyraj has Actively participated in the State-Level Under-19 Rocketball Championship, demonstrating teamwork, discipline, and competitive spirit. Gained exposure to robotics and emerging technologies through technical workshops and industrial visits. Developed an understanding of robotic systems, automation concepts, and practical engineering applications. Strengthened communication, collaboration, and problem-solving skills through extracurricular and technical activities. Demonstrated a strong interest in continuous learning, innovation, and professional development.









DIVYA BHARATHI.M

Divya Bharathi has Recognized Silambam athlete with a strong commitment to traditional martial arts, discipline, and physical excellence. Participated in competitive Silambam events and earned certificates of merit at district-level championships. Demonstrated exceptional dedication, focus, perseverance, and sportsmanship through consistent training and competition. Developed strong self-discipline, agility, and mental resilience while preserving Tamil Nadu's traditional martial arts heritage. Aspires to achieve further success and represent the sport at higher competitive levels.







OUR PROUD ACHIEVEMENTS

Small Steps Big Dreams



UDHAYA KUMAR.R

The hands-on training certificate awarded through the training program associated with Aero Knotz highlights the importance of practical learning and technical skill development in engineering education. The training provided an opportunity to gain hands-on experience with engineering concepts, understand technical procedures, and explore their applications in real-world industrial environments. It helped strengthen practical knowledge, improve technical awareness, and develop a better understanding of industry-oriented processes. Such training programs enable students to connect theoretical concepts learned in the classroom with practical implementation, while also encouraging problem-solving, analytical thinking, and continuous learning. This experience represents an important step towards developing the technical competence and professional confidence required for future engineering careers.



Aero Knotz - Training Certificate



Aero Knotz - Appreciation Certificate



Mitsuba - Internship Certificate



RAVI VARMA.G

The internship at Mitsubishi Sical India Pvt. Ltd. provided valuable industrial exposure to Production, Quality, and Maintenance departments. It enhanced practical knowledge of manufacturing processes, quality standards, and industrial operations, helping bridge the gap between academic learning and real-world engineering practices.

Participation in the program conducted by Ednue Technologies provided an opportunity to expand technical knowledge and gain additional learning experience. It encouraged skill development, creative thinking, and continuous learning, supporting academic growth and future professional development.

The industrial visit to Aero Knotz provided valuable exposure to robotics and drone technology. It helped develop an understanding of emerging engineering innovations, their practical applications, and the importance of technological advancements in modern industries.



Mitsuba - Internship Certificate



Ednue Technologies - Participation Certificate



Aero Knotz - Appreciation Certificate

STUDENT ACHIEVEMENTS

Talent | Teamwork | Triumph



Hackathon

Student Names: Denzil Roshan Raj, Dhaksshnamoorthy, Rajesh, and Deepak

Event: Hackathon

Achievement: ₹10,000 Cash Prize

Date: 4 March 2026

The student team achieved a significant milestone by winning a ₹10,000 cash prize in a Hackathon, demonstrating their technical expertise, innovative thinking, and collaborative problem-solving abilities. The event provided an opportunity to apply their knowledge, develop creative solutions, and address real-world challenges through technology.

This achievement reflects the team's dedication, teamwork, and commitment to innovation. Their success highlights the importance of practical learning, technical collaboration, and creative thinking in engineering. It also inspires fellow students to participate in hackathons, explore emerging technologies, and transform innovative ideas into impactful solutions.



Cricket Tournament

Student Names: Hari Krishna (C), Ragul M., Naveen B., Pavan Kumar, Karthick, Madesh, Mageshwaran, Naveen, Robin, Elango, Poorna Sai, Senthamil Selvan, Karthigeyan, and Mohana Prakash.

Event: Cricket Tournament

Achievement: First Prize

Date: 12 March 2026

The student cricket team achieved a remarkable milestone by securing First Prize in the Cricket Tournament, demonstrating excellent teamwork, sportsmanship, discipline, and competitive spirit.

Under the leadership of captain Hari Krishna, the team showcased coordination, strategic thinking, and determination throughout the competition.

This achievement reflects the students' dedication, perseverance, and passion for sports. Their success highlights the importance of team spirit, leadership, and commitment in achieving common goals. The accomplishment serves as an inspiration to fellow students to participate actively in sports and strive for excellence both on and off the field.



Play • Learn • Achieve

TALENT | DEDICATION | SUCCESS

NPTEL
Achievements of Our Students

LEARNING TODAY | LEADING TOMORROW



ASHIKA J

NPTEL Online Certification Course

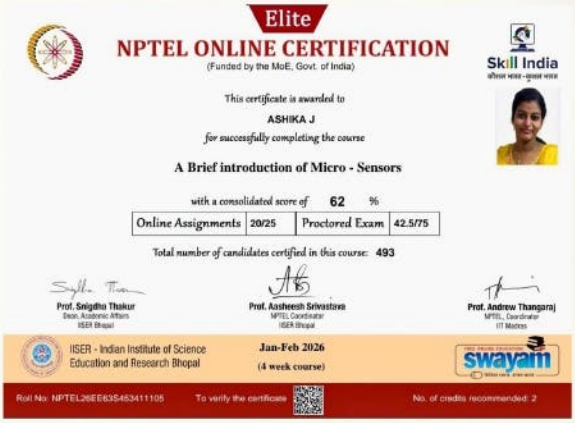
"A Brief Introduction of Micro-Sensors."

Duration : 4 Weeks (Jan – Feb 2026)

Score : 62% (20/25)

Assignments : 42.5/75

- I successfully completed the NPTEL Online Certification courseon "A Brief Introduction of Micro-Sensors."
- The course was conducted by IISER Bhopal during Jan-Feb 2026 for a duration of 4 weeks. I secured a consolidated score of 62%, with 20/25 in assignments and 42.5/75 in proctored examination.
- This course helped me gain basic knowledge about micro-sensors
- and their applications. The certification was awarded under the NPTEL and Skill India initiative. This achievement enhanced my technical knowledge and academic skills in the field of sensors.


Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

ASHIKA J

for successfully completing the course

A Brief introduction of Micro - Sensors

with a consolidated score of 62 %

Online Assignments	20/25	Proctored Exam	42.5/75

Total number of candidates certified in this course: 493

Prof. Snigdha Thakur, Dean, Academic Affairs, IISER Bhopal

Prof. Assheesh Srivastava, NPTEL Coordinator, IISER Bhopal

Prof. Andrew Thangaraj, NPTEL Coordinator, IIT Madras

IISER - Indian Institute of Science Education and Research Bhopal

Jan-Feb 2026

(4 week course)

swayam

Roll No: NPTEL26EE63S463411105 To verify the certificate No. of credits recommended: 2

ABIGAIL M


Elite

NPTEL ONLINE CERTIFICATION

Skill India

This certificate is awarded to

ABIGAIL M

for successfully completing the course

A Brief introduction of Micro - Sensors

with a consolidated score of 67 %

Online Assignments	21.67/25	Proctored Exam	45.5/75

Total number of candidates certified in this course: 693

IISER - Indian Institute of Science Education and Research Bhopal

Jan-Feb 2026

(4 week course)

swayam

NPTEL Online Certification Course

"A Brief Introduction of Micro-Sensors."

: 4 Weeks (Jan - Feb 2026)

: 67% (21.67/25)

Assignments:: 42.5/75



- I successfully completed the NPTEL Online Certification course
- for a duration of 70% with 21.67/25 in online assignments and 45.5/75 in the proctored examination. The course was conducted
- I secured a consolidated score of 67%, with 21.67/25 in online assignmentsand 45.5/75 in the proctored examination. The course provided valuable knowledge about micro-sensors, their working principles, and applications.I am a highly-motivated, and a technical knowledge and understanding of sensor technology. It is a valuable addition to my academic and professional profile.

BHONESH S



NPTEL Online Certification Course

Introduction to Internet of Things (IoT).

: 12 Weeks (Jan - Apr 2026)

: 70% (23.31/25)

Assignments : 46.5/75

- I successfully completed the NPTEL Online Certification course on
- the internet of things (IoT). The course was offered by IIT
- Kharagpur during January-April 2026 for a duration of 12 weeks. I secured a consolidated score of 70%, with 23.31/25 in online assignments and 46.5/75 in the proctored examination. The course provided valuable knowledge about IoT concepts, techniques, and applications. This certification enhanced my technical skills and understanding of connected devices and smart systems.
- It is a valuable addition to my academic, and professional profile.


Elite

NPTEL ONLINE CERTIFICATION

(Funded by the MoE, Govt. of India)

Skill India

This certificate is awarded to

BHONESH S

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of 70 %

Online Assignments	23.31/25	Proctored Exam	46.5/75

Total number of candidates certified in this course: 43953

Jan-Apr 2026

(12 week course)

Prof. Haimanti Banerji, Coordinator, NPTEL IIT Kharagpur

Indian Institute of Technology Kharagpur

swayam

Roll No: NPTEL26CS37S8109981 To verify the certificate No. of credits recommended: 4

Your Hard Work Today Builds a Brighter Tomorrow

T.J.S. ENGINEERING COLLEGE

ECE DEPARTMENT

EXPLORE / LEARN | GROW

Industrial Visit

Aero Knotz Drones India Private Limited, Siruseri



REAL EXPOSURE BUILDS REAL ENGINEERS

About the Visit

The visit provided students with valuable exposure to the rapidly developing field of drone and unmanned aerial vehicle (UAV) technology. Students had the opportunity to observe different types of drones and understand their major components. The experts explained the basic working principles, flight mechanisms, and control systems used in drones. Students also gained insights into drone assembly, electronics, sensors, communication systems, and flight controllers.

The practical demonstrations helped students connect their classroom knowledge with real-world engineering applications. The visit introduced students to the various applications of drones in agriculture, surveying, surveillance, mapping, and other industries.





Hands-on Learning

Student Engagement

Interactive Sessions

Students actively interacted with the technical team and clarified their questions about drone technology. The hands-on exposure encouraged students to understand the importance of precision and innovation in UAV development.

Faculty Support

The visit also provided an opportunity to observe drone components and related equipment closely. Faculty members guided the students throughout the industrial visit and encouraged them to make the most of the learning experience.

Key Takeaways

- Exposure to advanced drone technology
- Understanding of components & control systems
- Hands-on learning and practical demonstrations
- Applications in agriculture, surveying, surveillance and mapping
- Guidance from industry experts and faculty

> *The visit was a valuable learning experience, inspiring us to explore new technologies and build a stronger future in the field of drone engineering.*



INDUSTRIAL VISIT TO
AEROKNOTZ DRONES INDIA

EXPLORE | LEARN | INNOVATE







Industrial Visit to Aeroknotz Drones India

The students of the Electronics and Communication Engineering (ECE) department visited Aeroknotz Drones India, Padur, Tamil Nadu, to gain practical exposure to advanced drone technology and robotics. The visit provided valuable insights into the design, development, and applications of unmanned aerial vehicles (UAVs). Students explored various drone models, robotic systems, and emerging technologies through interactive demonstrations. The session enhanced their understanding of real-world engineering applications and innovative automation solutions. This industrial visit bridged the gap between theoretical knowledge and practical learning, inspiring students to explore future opportunities in drone technology and robotics.

From Classroom to Real World

A MEMORABLE EXPERIENCE

The NASA-ISRO Synthetic Aperture Radar (NISAR) Satellite Launch



30 July 2025 at 5:40 PM IST | **Satish Dhawan Space Centre, Sriharikota, India**

That's a memorable experience! 🚀 The **NASA-ISRO Synthetic Aperture Radar (NISAR)** satellite was launched on **30 July 2025 at 5:40 PM IST** from Satish Dhawan Space Centre, Sriharikota, India, aboard ISRO's **GSLV-F16. NISAR** is a joint mission between **NASA and ISRO** designed to observe Earth's surface using advanced radar technology, helping scientists monitor changes in glaciers, forests, agriculture, land deformation, earthquakes, and other dynamic processes.

If you're preparing a caption, speech, school/college report, or social-media post about witnessing the launch, I can turn your sentence into a polished version.



NISAR Launch – A Step Towards a Better Tomorrow











T.J.S. ENGINEERING COLLEGE

Educational Visit to ISRO,SIRHARIKOTA

Students and faculty members of T.J.S. Engineering College had an inspiring opportunity to witness the historic launch of the NASA-ISRO Synthetic Aperture Radar (**NISAR**) satellite on 30 July 2025 at 5:40 p.m. IST from the Satish Dhawan Space Centre, Sriharikota. **NISAR** is a joint Earth-observation mission developed by NASA and ISRO, designed to study changes in Earth's land and ice surfaces using advanced radar technology. **(NASA)** The launch was carried out aboard ISRO's GSLV-F16 launch vehicle. **(ISRO)** Witnessing this remarkable event gave our students a firsthand experience of India's achievements in space science and engineering. The visit also provided an opportunity to explore various exhibits and learn about rockets, satellite systems, propulsion, and Earth-observation technologies.

Learning Beyond Classrooms

Seeing these technologies closely helped us connect our classroom concepts with real-world engineering applications. The experience encouraged students to develop greater curiosity toward space technology, research, and innovation. It also highlighted the importance of teamwork, precision, dedication, and scientific thinking in achieving complex missions.

NISAR mission's ability to monitor changes on Earth contributes to **understanding our planet and** supporting applications such as disaster monitoring and environmental **studies.**

Exploring Space • Empowering Future

BHARATIYA NABHIKIYA VIDYUT NIGAM LIMITED



INDUSTRIAL VISIT REPORT – BHAVINI, KALPAKKAM

The Department of Electronics and Communication Engineering (ECE) of T.J.S. Engineering College organized an industrial visit to **Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI),** Kalpakkam, Tamil Nadu, on 26 September 2025.

The visit aimed to provide students with practical exposure to nuclear power generation and advanced reactor technologies. During the visit, students gained valuable insights into the working principles of the Prototype Fast Breeder Reactor (PFBR) and its role in India's three-stage nuclear power programme.

The students learned about the importance of nuclear energy in meeting the country's growing electricity demands. They also gained knowledge about reactor technology, energy conversion, and the significance of safety measures in nuclear power plants.





The industrial visit helped students connect theoretical concepts with real-world engineering applications. It also enhanced their technical knowledge and understanding of advanced power generation systems.

Overall, the visit was an informative and enriching experience that broadened the students' knowledge of nuclear energy and its applications in modern engineering.

EXPLORE | LEARN | CREATE MEMORIES

Wayand TRIP IV YEAR



Wayand Trip

Our final-year students went on a memorable trip to Wayand. The trip gave them a chance to explore the beautiful natural surroundings and enjoy time together outside the college environment.

They visited scenic places, enjoyed the journey with their friends, took plenty of photographs, and created many unforgettable memories. It was a refreshing and enjoyable experience and they will cherish as one of their memorable college trips.



Wonderla Trip

WONDERLA TRIP



Memories Together ♡

Our third-year students went on an exciting outdoor trip with our friends and classmates. It was a great opportunity to take a break from our regular college routine and spend quality time together. We enjoyed travelling, exploring new places, taking photos, playing games, and creating unforgettable memories. The trip also helped us strengthen our friendship and teamwork. Overall, it was a fun-filled and memorable experience for all of us.

New Places
Same Friends
Bigger Memories

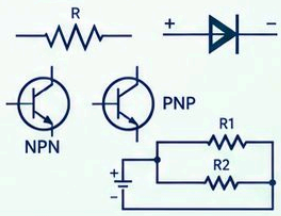
Good Friends
Make Great Journeys

ECE

Basic Electronics & Circuits

Understand • Analyze • Build

- Semiconductor Fundamentals
- Diodes & Rectifiers
- BJT and FET
- Ohm's Law & Kirchhoff's Laws
- Series and Parallel Circuits
- Circuit Analysis & Lab Practice



Digital Electronics

Logic • Design • Verify

- Number Systems & Boolean Algebra
- Logic Gates
- Combinational Circuits
- Flip-Flops & Sequential Logic
- Counters and Registers
- Digital Circuit Design



A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

Embedded Systems

Sense • Process • Control

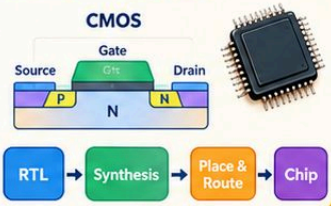
- Embedded C/ C++
- Sensors & Actuators
- GPIO, Timers & Interrupts
- Firmware Development
- RTOS Fundamentals
- Prototyping & Debugging



VLSI

Design • Simulate • Innovate

- MOSFET & CMOS Basics
- Digital Logic Design
- Verilog / SystemVerilog
- RTL Design & Verification
- Synthesis & Timing
- ASIC / FPGA Flow



Communication & IoT

Transmit • Connect • Analyze

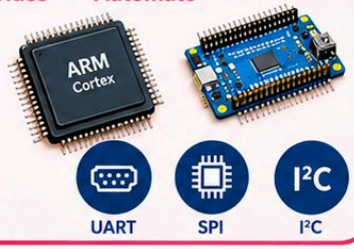
- Signals & Systems
- Analog and Digital Modulation
- Antennas & Propagation
- Wireless Networks
- IoT Sensors & Protocols
- Cloud & Data Analytics



Microprocessor & Microcontroller

Compute • Interface • Automate

- 8086 / ARM Architecture
- 8051 and AVR Basics
- Assembly & Embedded C
- Memory & I/O Interfacing
- Interrupts & Timers
- UART, SPI & I²C



Small Steps... Big Impact!

BASIC ELECTRONICS & CIRCUITS

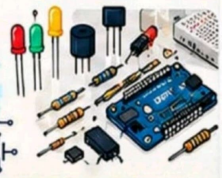
From Ohm's Law to Real-World Circuits!

Learn | Build | Experiment | Grow

What is Basic Electronics & Circuits?

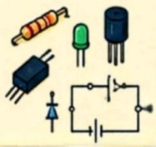
Basic Electronics & Circuits is the foundation of modern technology. It helps you understand how electronic components work, how circuits are designed and how signals are processed.

From simple LEDs to complex circuits — it all starts here!



1 Understand the Basics

- Learn basic electronic components (resistor, capacitor, inductor, diode, transistor)
- Ohm's Law, KVL, KCL
- Series & parallel circuits



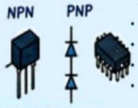
Skills to Gain
- Basic analog analysis
- Component identification
- Problem solving

Tools to Explore
- Multimeter, Breadboard, Circuit simulator (Tinkercad)

Skills to Gain
- Circuit design & simulation
- Component testing
- Circuit design (schematics, P0)

Tools to Explore
- LTspice, Protesu, Multisim, DMM

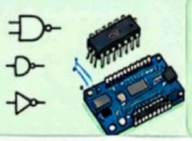
2 Work with Passive & Active Components



- Diodes (rectifier, Zener)
- Luminodes (withching & amplification)
- Capacitors & inductors (filters, timing)
- Simple amplifier and oscillator circuits

3 Explore Digital Electronics

- Logic gets a Boolean algebra
- Combinational & 20000000000
- Flip-Flops, counters, shift registers
- Introduction to microcontrollers

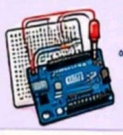


Skills to Gain
Logic design & troubleshooting
Microcontroller basics
Relying on the computer

Tools to Explore
Logicism, Arduino IDE, Proteus

Skills to Gain
- Circuit assembly & soldering
- Debugging & testing
- Project documentation

Tools to Explore
- Power supply design
- Osciloscope (optional)



4 Build Real-World Projects

- LED blinking, sensor interfacing
- 555 timer applications
- Power supply design
- Mini project (e.g, smart light, automatic fan)

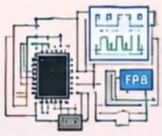
Start Here → Basics → Components → Circuits → Digital → Projects → All Up → Set Ined

Digital Electronics uses binary signals and logic circuits to process informationin the foundation of computers, controllers, communication systems and modern devices.



Skills to Gain
- Simulation
- Verification
- Documentation

Tools to Explore
- Proteus
- Multisim
- Digital



Truth Table		
A	B	Y
0	0	0
0	1	1
1	0	1
1	1	0

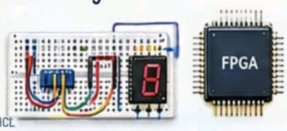
Circuit Design & Simulation

- Combine combinational and sequential blocks
- Design a digital clock, traffic light controller, sequence detector
- Verify truth tables and timing
- Debug logic errors

5

6 Hardware & Programmable Logic

- Breadboard logic circuits
- 74HC17TL logic ICs
- Bosch I2C and I2Cdiagrams
- Interfacing switches, LEDs and
- semn-segment displays
- Introduction to FPGA/CPLD and Verlog HCL

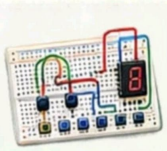


Skills to Gain
- Wiring
- HDI
- HDL basics

Tools to Explore
- DataSheets
- FPGA Emulator
- Qartus or Vvado intel

Skills to Gain
- Tunneling
- Testing
- DataSet

Tools to Explore
- Breadboard
- Logic ICs
- Simulation software





Mini Projects & Portfolio

- Digital combination lock
- Electronics design counter
- Binary calculators
- Smart traffic light controller
- Reaction-time game

7

Specialize & Build Your Career

- Choose digital design, FPGA/RTL design, verification, embedded hardware or VLSI
- Build projects
- Learn Verilog/SystemVerilog as relevant
- Prepare a portfolio and interview fundamentals

8



Skills to Gain
- Analytical thinking
- Communication
- Problem-solving

CAREER PATHS

- Digital Design Engineering
- FPGAR/RTL Design Engineer
- Design Verification Engineer
- Embedded Hardware Engineer
- Electronics Test Engineer
- VLSI Engineer (with further training)

Start with logic. Build with circuits. Create intelligent systems.

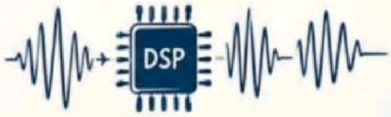
Small gates. Big ideas.

Simulation → Hardware → Projects → Career

Small Steps... Big Impact!

DIGITAL SIGNAL PROCESSING (DSP)

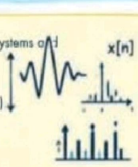
From Signals to Smart Solutions



Learn Practice Build Grow

1 FOUNDATION & MATHEMATICS

- Build your core understanding of signals, systems and mathematical tools.
- Signals & Systems (time/frequency domain)
- Discrete-time signals & sampling
- Fourier Series & Fourier Transform
- Z-Transform & Laplace Transform (basic)



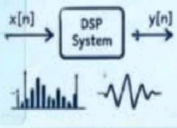
Skills to Gain
- Problem solving
- Analytical thinking
- Mathematical rigor

Tools to Explore
- MATLAB, Octave, Python (NumPy, SciPy)

2 DIGITAL SIGNAL PROCESSING BASICS

Skills to Gain
- Signal analysis
- Fiber design basics
- MATLAB coding

Tools to Explore
- MATLAB, Octave, Scilab, Octave



- Understand how digital signals are processed and analyzed.
- Discrete Fourier Transform (DFT/FFT)
- Correlation & Correlation
- Digital Filters (DR & IIR)
- Signal sampling & quantization

3 PROGRAMMING & IMPLEMENTATION

- Turn theory into practice using coding and simulation.
- MATLAB / Python for DSP
- Implementing DFT, FFT, Filtering
- Working with real signals & datasets
- Performance optimization (basic)



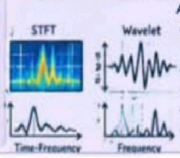
Skills to Gain
- Coding & debugging
- Data Handling
- Algorithms/Implementation

Tools to Explore
- MATLAB, Python, Scilab, Octave

4 ADVANCED DSP TECHNIQUES

Skills to Gain
- Advanced Analyst
- Fiber design (adaptive)
- Algorithms/development

Tools to Explore
- MATLAB, Python, Scilab, Octave



- Explore advanced concepts used in real-world applications.
- Multate Signal Processing
- Adaptive Filters
- Spectral Analysis & Windowing
- STT, Mavelset & Time-Frequency Analysis

5 REAL-WORLD APPLICATIONS

- Apply DSP in modern systems and industries.
- Audio & Speech Processing
- Image & Video Processing
- Biomedical Signal Processing
- Communication Systems (modulation, demodulation)



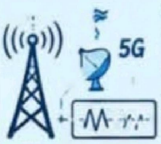
Skills to Gain
- Domain knowledge
- Teaserwork
- Problem solving

Tools to Explore
- MATLAB, Python, Simulink, GNU Radio

6 COMMUNICATIONS & WIRELESS

Skills to Gain
- Communication theory
- Signal modeling
- Combinal & analysis

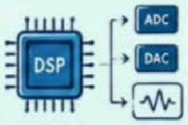
Tools to Explore
- MATLAB, Simulink, GNU Radio, OpenVSDR



- Understand signal processing in modern communication systems.
- Modulation & Demodulation (AM/FM, QAM, etc.)
- Cultural Codings & Error Correction
- MIMO & OFDM
- 5G / IoT Signal Processing

7 EMBEDDED DSP & SYSTEM INTEGRATION

- Work with hardware and embedded platforms.
- DSP Processors (TI C6x, ARM Cortex-M)
- Real-time Signal Processing
- Embedded C/ RTOS
- Hardware interfacing (ADC/DAC, I2S, SPI)



Skills to Gain
- Embedded programming
- Teaserwork
- Hardware debugging

Tools to Explore
- TI CCS, Kel., STN32Cube, RTOS, JTAG

8 PROJECTS, INTERNSHIPS & CAREER GROWTH

Skills to Gain
- Communication
- Teaserwork
- Leadership (optional)

Tools to Explore
- Gt, GitHlab, LinkedIn, Portfolio (GtHub/Behance)



- Build experience, showcase your skills and let the industry.
- Work real-time DSP projects
- Intership / industrial exposure
- Build a strong portfolio
- Prepare for interviews & placements

Your Journey in 8 Steps

Learn Basics → Create Coding → Build Projects → Understand Real Signals → Work with Hardware → Gain Experience → Get Hired

Theory Practice Projects Internship Job

Key Tools & TecTechnologies

MATLAB, Python, Simulink, GtG Radio, DSP Pioneers (TI/AM), KiCad, LTgice, Jayster Networ k, Gt / GtHub, TensorFlow (Advanced)

Career Opportunities

- DSP Engineer
- Signal Processing Engineer
- Communications Engineer
- Real-Time Engineering
- RF / Wireless Engineer
- Research & Development
- Data Scientist (Signal Processing)

Great Careers Build Here!

Build the signals that shape tomorrow!

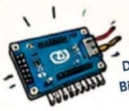
DIGITAL SIGNALS BETTER COMMUNICATION SMARTER TECHNOLOGIES

Small Steps... Big Impact!

EMBEDDED SYSTEMS

From Basics to Real-World Projects!

Learn | Build | Debug | Innovate



Small Devices... Big Dreams!

What is Embedded Systems?

Embedded systems are dedicated computer systems built in devices to perform specific tasks. They combine hardware and software to work in real-time, often with limited resources (memory, power, etc).

From smart homes to cars, medical devices and the more. Embedded systems are everywhere!

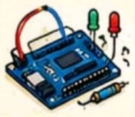


Your Journey – Step by Step

1 Build the Basics

Get comfortable with the fundamental of electronics and programming.

- Basic electronics (Ohm's law, circuits, components)
- Digital electronics (logic gates, Boolean algebra)
- C programming (basics, syntax, control structures)



- **Skills to Gain**
  - C programming
  - Basic electronics
  - Problem solving
- **Tools to Explore**
  - Arduino IDE, Multisim, Tinkercad

2 Learn Microcontrollers & Hardware

- **Skills to Gain**
  - MCU architecture
  - Periferal interfaceing
  - Debugging
- **Tools to Explore**
  - STM32CubeIDE, Keil, Proteus



Understand how microcontrollers work and interface with real-world components.

- Microcontroller architecture (8051, ARM Cortex, etc.)
- GPIO, Timers, interrupts, UART, SPI, IC
- Embedded C / Bare-metall programming

3 Work with RTOS & Embedded Software

Learn to build real-time and reliable applications.

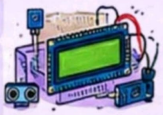
- Real-Time Operating Systems (FreeRTOS)
- Task scheduling & synchronization
- Driven and HAL (Hardware Abstraction Layer)



- **Skills to Gain**
  - ✔ RTOS concepts
  - ✔ Multitasking
  - ✔ Driver development
- **Tools to Explore**
  - FreeRTOS, SIM32Cube, Keil

4 Build Real-World Projects

- **Skills to Gain**
  - ✔ Hardware integration
  - ✔ Project development
  - ✔ Kable/boostering
- **Tools to Explore**
  - ESP32, Raspberry Pi, VS Code



Apply what you learned by building complete systems.

- Sensor interface (OC, SPI, ADC)
- LCD/OLED display, SD card, Wi-Fi/Bluetooth
- IoT & simple automation projects

Start Here → Learn Basics → Understand Hardware → Build Projects → Gain Experience → Get Hired

5 Advanced Concepts

Deepen your knowledge and work on complex systems

- Use power design
- Embedded Linux
- Device drivers & kernel basics
- Communication protocols (CAN, USB, Ethernet)



- **Skills to Gain**
  - Linux administration
  - Device development
  - System optimization
- **Tools to Explore**
  - Linux, Yocto, & KEM Analyzer, Wireshack

6 Specialize in a Domain

- **Tools to Explore**
  - MQTT, CAN66, RDS, MATLAB
- **Skills to Gain**
  - Cloud-based IP protocols
  - Hardware software integration
  - Real-time systems



Choose a domain and gain in-depth knowledge.

- IoT & Wireless (MQTT, CoAP)
- Industriale (AUTOSAR, CAN)
- Industriale / Robotics
- Medical / Healthcare

7 Work on Real Projects / Internships

Gain hands-on experience and work in industry or college projects.

- Build end-to-end embedded applications
- Team collaboration
- Code review & version control (Git)



- **Skills to Gain**
  - Teamwork & communication
  - Project management
  - Code versioning (Git)
- **Tools to Explore**
  - Git, GitHub, JIRA

8 Grow & Get Placed

- **Tools to Explore**
  - LeetCode, HackerRank, LinkedIn
- **Skills to Gain**
  - ✔ Communication
  - ✔ Problem solving
  - ✔ Leadership (optional)



Prepare for jobs and build a strong profile.

- Resumes & portfolios
- Interview preparation (DS, HR, technical)
- Competitive coding & problem solving

Key Tools & Technologies

Keil / MDX · STM32CubeIDE · VS Code · FreeRTOS · WireShark · CAN Analyser

Career Opportunities

- Embedded Systems Engineer
- Firmware Engineer
- RTOS Developer
- IoT Engineer
- Automotive Embedded Engineer
- Robotics Engineer
- System Software Engineer

Great Careers Build Here!

Build the systems that make the world smarter!

Small Steps... Big Impact!

Communication + IOT

FOR FRESHERS

Learn | Build | Connect | Grow

From Circuits to Connected World!

Skills to Gain
Circuit understanding
Signal basics
Problem solving

Tools to Explore
LTspice / Proteus
MATLAB / Python

1 BUILD THE ECE FOUNDATION

- Basic electronics (Ohm's law, circuits, components)
- Digital electronics (logic gates, flip-flops)
- Signals & systems (time/frequency domain)
- Communication basics (AM/FM, modulation)

2 PROGRAMMING + NETWORK BASICS

- C/C++, and Python
- Linux basics & Git
- TCP/IP, IP addressing
- Basic networking (LAN/WAN, switches, routers)

Skills to Gain
✓ Coding & logic
✓ CLI & debugging
✓ Networking fundamentals

Tools to Explore
VS Code, Git, Wireshark

Skills to Gain
Firmware development
Hardware interfacing
Debugging

Tools to Explore
STM32 / ESP32
Arduino IDE / PlatformIO

3 IOT DEVICE & EMBEDDED

- Microcontrollers (ARM, RISC-V)
- GPIO, ADC, UART, SPI, I2C
- Sensors & actuator
- Embedded C / bare-metal programming

4 CONNECTED IOT

✓ Wi-Fi, Bluetooth / BLE
✓ MQTT, HTTP / REST
✓ Gateways & edge devices
✓ Device-to-cloud data flow

Skills to Gain
✓ Protocol development
✓ Device connectivity
✓ Data handling

Tools to Explore
MQTT Broker, Node-RED
Wireless

Your Journey in 8 Steps

Learn Basics → Code → Build Devices → Connect → Understand Wireless → Integrate → Build Projects → Get Hired

C/C++ + ESP32

Better Signals Bigger Opportunities

Skills to Gain
Waveform understanding
RF analysis
Performance & testing

Tools to Explore
MATLAB / Python
SDR concepts, spectrum tools

5 COMMUNICATION & RF

- Modulation (AM/FM/QAM)
- Digital communication
- RF basics & antennas
- Propagation, link budget, interference

6 4G / 5G & WIRELESS

- LTE concepts
- 5G NR, OFDM, MIMO
- Beamforming
- RAN / core network overview
- QoS & performance

Skills to Gain
Wireless architecture
Performance analysis

Tools to Explore
MATLAB / Python
5G simulators / SDK concepts

Skills to Gain
System integration
Testing & debugging
Observability
Teamwork

Tools to Explore
Cloud APIs & databases
Linux, Docker basics
Cloud/IoT platforms, GitHub

7 EDGE, CLOUD & SECURITY PROJECTS

- Edge computing
- Cloud APIs & databases
- Dashboards & data analytics
- Authentication & encryption
- Device & network security

8 SPECIALIZE & GET PLACED

Choose your career path:

✓ IoT Engineer
✓ Embedded IoT Engineer
✓ Authentication & Encryption
✓ RF / Wireless Engineer

Skills to Gain
Communication
Problem solving
Project explication
Interview readiness

Portfolio
Comprehensive projects
Teamwork
Resume → internship

KEY TOOLS & TECHNOLOGIES

Python, Linux, Git, Wireshark, MQTT, STM32, MATLAB, Node-RED, Wi-Fi / BLE, 4G/5G

CAREER OPPORTUNITIES

✓ IoT Engineer
✓ SDC (Cloud IoT Engineer
✓ RF / Wireless Engineer
✓ 5G / Internet Engineer
✓ Edge / Cloud IoT Engineer
✓ Test / Automation Engineer

Connect Devices. Move Data. Build the Future.

Small Steps... Big Impact!

MICROPROCESSOR AND MICROCONTROLLER

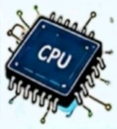
Learn | Build | Debug | Innovate

From understanding the basics of microprocessing to building real-world embedded systems — your journey starts here!

What is a Digital Microprocessor?

A digital microprocessor is a compact integrated circuit that fecthes, decodes and executes instructions to perform computations and control operations.
It is the brain of embedded and computing systems.

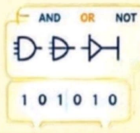
Key Points
- CPU (All) Control Unit, Registers)
- Works with Memory & I/O
- Uses binary (0s and 1s)
- Found in PCs, mobiles, IoT, automotive, industrial systems, etc.



Small Chip... Big Power!

Skills to Gain
- Binary/8te conversion
- Logic simplification
- Circuit analysis
- Redonon system
- Tools to Explore
- Logic get simulator
- Calculators / Online quiz

Small Concepts... Big Logic!



Build the Basics

Get comfortable with the fundamentals of computers and digital electronics.
Number systems (Binary, Octal, Hexadecimal)
Boolean logic (AND, OR, NOT)
Digital electronics (combinational & sequential circuits)
Basics of microprocessor architecture

1

2 Learn Microprocessor Fundamentals

Understand how microprocessors work and interact with the system.
- CPU architecture (8086, 8086, ARM, etc.)
- Registers, ALLI, Control unit
- Addressing modes & instruction formats
- Memory interfacing & U/O operations

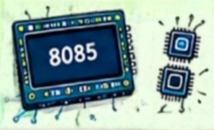


Fetch Create Execute

CPU → Memory → I/O

Skills to Gain
- Assembly software basics
- Instruction set & formats
- Memory map & addressing
- Debuggingics
- Exulator (EMU8085, QEMU)
- Keil / Profuss

Skills to Gain
- Assemble-software integrator
- Project management
- Economics napisfs
- Debugging & testing
- Memory interfacing (RAM, RSC-V, ARM)



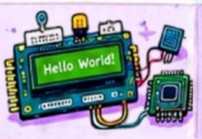
8085/8086 & ASSEMBLY

- Write ad or prethm:seasecure.adc .fare, beginning
- Herbal son, orgrammed, aodl (RSBARM)
- Airopin, intermedia, and digital systems.
- Addressing modeng (LUAR1, RCI, R2)
- Cofendeda Giocng (1 Ciot 'kicks, Cv Gobogoen)

3

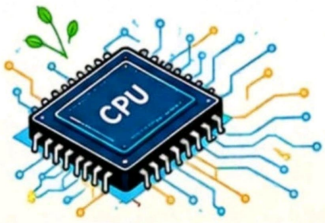
4 Do Real-World Projects

Apply online for2025 and 2026 for building complete systems.
- Interfacing sensors (IR, DHT11, LED, etc.)
- Display & I/O (CCU/LED, Keypad)
- Development boards (8085, ARM Core1, Raspberry Pi)



Skills to Gain
- Assemble-software
- Integration
- Project development
- Debugging & testing
- Memory interfacing
- (RAM, RSC-V, ARM)

Learn Basics → Understand Architecture → Master Assembly & C →



Design | Code | Test | Deploy

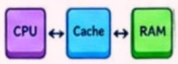
- Learn Architecture
- Write Assembly
- Build Systems
- Create Impact

Microprocessors power everything from your phone to self-driving cars!

Skills to Gain
- Pipeline & cache concepts
- DMA & interrupt handling
- Performance optimization

Tools to Explore
ARM R4C, C828C, Vivado
Intel/AMD tools

Faster Smarter Efficient!



Advanced Concepts

Develping the microprocessor systems and real-time applications.
- Pipelines & supercachen concepts
- Cache memory & memory hierarchy
- Interrupt handling & DMA
- Advanced architectures (ARM, RISC-V, AI)

5

6 Specialize in a Domain

Choose a domain that matches your interest and career goal.
- IoT & Wireless (AIoT in Home, ESP32)
- Automotive (AUTOSAR, CAN)
- Industrial / Robotics
- Medical / Healthcare
- AI at the Edge (Natural Accelerators)



Skills to Gain
- Domain-specific protocols
- Networks and systems
- Automated software integration

Tools to Explore
MQTT, CAN68, ROS, MATLAB
TensorFlow Lite (Edge AI)

Skills to Gain
- Assembly & communication
- Project management
- Code versioning (G1)
- Testing & validation
- Tools to Explore
- Git, GitHub, JIRA
- VS Code, HackerHub, LinkedIn
- STM32CubeIDE, VS Code



Build Smarter Learn!

Work on Real Projects / Internships

Get hands-on experience and work on industry or college projects.
- PCB design & hardware debugging
- Team collaborator & version control
- Code review & testing

7

8 Grow & Get Placed

- Prepare for jobs and build a strong professional profile.
- Technical interviews (GSA, system design)
- Competitive codeing
- LinkedIn & networking



Your Skills Create Opportunities

Skills to Gain
- Communication
- Problem solving
- Software (C++/C, C#
- Continuous learning
- Tools to Explore
- Github, JIRA
- GitHub,bentil, C#

Key Tools & Technologies

Keil / µVision (8085/ARM) | STM32CubeIDE (STM32) | VS Code (IDE) | Git & GitHub (Version Control) | Proteus (Simulation) | Raspberry Pi (Projects) | Arduino (Prototyping)

Other Useful Skills

- C / C++ Programming
- C++ Software Design
- Communication Skills
- Problem Solving & D

Build Projects → Gain Experience

Be the Engineer Behind Tomorrow!

Electronic Components

Learn • Explore • Build • Innovate

Small Components... Big Possibilities...

Passive Components

They do not need external power.

Resistor



- Limits current
- Controls voltage
- Protects other components

Types: Carbon film, Metal film, SMD
Units: Ohm (Ω)
Color Code:



Brown-Black-Red-Gold = 1kΩ

Capacitor



- Stores charge
- Smoothens voltage
- Filters noise

Types: Ceramic, Electrolytic, Film
Units: Farad (F)
Uses: Smoothing, Timing, Coupling

Inductor



- Stores energy in magnetic field
- Opposes changes in current

Units: Henry (H)
Uses: Filters, Chokes, Power circuits

Potentiometer



- Variable resistor
- Controls voltage, current or signal

Types: Rotary, Trimmer, Slider
Uses: Volume control, Sensor calibration

D



- Allo… in c…
- Blo… cur…

Types Schot…
Uses: Prote…

LED, Zener, …ky Rectification, …tion

Active Components

They require external power to work.

…ode



…ws current …e direction …ks reverse …ent

Transistor



- Amplifies or switches signals
- **Types:** NPN, PNP, MOSFET
- **Uses:** Switching, Amplification

LED



- Emits light
- Low power indicator
- **Colors:** Red, Green, Blue, White
- **Uses:** Indicators, Displays

IC (Integrated Circuit)



- Performs complex functions
- **Types:** 555 Timer, Op-Amp, Microcontroller
- **Uses:** Logic, Signal Processing

Sensors – Sense the Real World

Ultrasonic Sensor (HC-SR04)



- Distance Measurement
- Range: 2cm–4m

DHT11 / DHT22



- Temperature & Humidity
- Range: 0–50°C, 20-90% RH

LDR (Photoresistor)



- Detect Light
- Used in automatic lighting

IR Sensor



- Detect Obstacle
- Used in line following robots

Ard… Uno



Open-source board. Easy … used fo…

…icrocontroller … learn, widely … projects.

Development Boards & Modules

ESP32



- Wi-Fi + Bluetooth
- Dual-core processor
- Low power
- Ideal for IoT & smart projects

ESP8266



- Wi-Fi module
- Connects to internet
- Used in IoT

NodeMCU



- ESP8266 based
- Easy to program (Lua)

Raspberry Pi (4/5)



- Mini computer
- Runs Linux
- Used for AI, IoT & robotics

Display & Output Components

LCD 16x2



- Display text
- 2 lines × 16 chars
- Used in projects

OLED Display



- Bright, low power
- High contrast

7-Segment Display



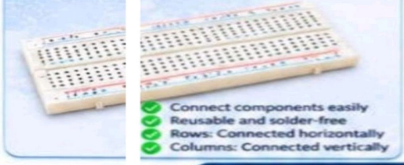
- Displays numbers
- Used in counters, clocks

Buzzer



- Sound output
- Active (beep) & Passive

Breadboar… – Build Without Soldering



- Connect components easily
- Reusable and solder-free
- Rows: Connected horizontally
- Columns: Connected vertically

Power Components

Battery



- Portable power

DC Adapter



- Stable DC supply (5V, 12V)

Voltage Regulator (LM7805)



- Provides constant voltage (5V)

Power Bank



- Portable power source

Other Useful Components

Relay



- Control high voltage devices with low voltage

Push Button



- User input (simple switch)

Switch



- Turn ON/OFF the circuit

Crystal Oscillator



- Provides stable clock frequency (e.g., 16MHz)

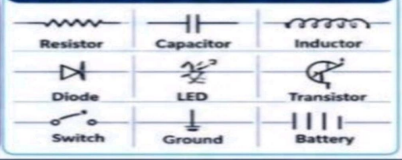
Motor Dr… (L298N…



- Control D… motors

…ver …C

Circuit Symbols – Read & Draw Circuits



Simple Circuits to Try

1. LED Blinker (LED + Resistor)
2. Automatic Light (LDR + LED)
3. Temperature Alert (DHT11 + Buzzer)
4. Distance Detector (Ultrasonic Sensor)



Key Takeaways

- Electronic components are the building blocks of modern t…chnology.
- Resistors control current, capacitors store charge, diode… allow current one way.
- Microcontrollers like Arduino and ESP32 help us turn id… as into smart projects.
- With these components, you can build robots, IoT devic… s, smart systems and more!

Dream • Design • Develop
Electronics turns ideas into reality!

FINAL YEAR STUDENTS



THIRD YEAR STUDENTS



SECOND YEAR STUDENTS



OFFICE BEARER MEMBERS



SAECE ASSOCIATION MEMBERS



PRESIDENT

RAGUL.M



TREASURER

KARTHIGEYAN.N



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INNOVATING THE FUTURE OF ECE.



We extend our heartfelt gratitude to our students, esteemed faculty, and management for their unwavering support in bringing this edition to life. Your dedication to innovation and continuous learning is the driving force behind our department's success. We invite you to stay connected with our community through our official channels below for future updates and events.

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