Department of



ELECTRICAL & ELECTRONICS ENGINEERING

"Nurturing Innovative Ethical and Creative Talents"



A NAAC ACCREDITED INSTITUTE WITH NBA ACCREDITED UG PROGRAMS

TIST HIGHLIGHTS



Established in the year 2002

A NAAC Accredited institute with ISO 9001:2015 Certification

Recognized as Scientific and Industrial Research Organization (SIRO) by the Department of Scientific & Industrial Research (DSIR), Government of India

Toc H is an Advanced Skill Development Centre under ASAP, Government of Kerala, to offer futuristic courses required by industry

Bestowed with the title of "College with Maximum Variety of Programs" by ISTE Kerala Chapter

Ranked as one among the "Top 40 colleges in India" by the 'Electronics For You' magazine

Remote centre for the E-outreach program by IIT-Bombay

Why B. Tech in EEE from TIST



The Department of Electrical & Electronics Engineering, TIST was established in the year 2004. The department offers two undergraduate program (B.Tech.) and one post graduate program (M.Tech program in Power Electronics). The course B. Tech in Electrical & Electronics Engineering is a 4 year undergraduate programme approved by AICTE New Delhi and affiliated to APJ Abdul Kalam Technological University (KTU). By selecting this branch students are promised with remunerative career in fields associated with electricity, electronics, power transmission & various other areas related to electricity. There are many excellent reasons to choose B. Tech in EEE from TIST, here are the few

Excellent Faculty Members

The department has qualified, faculties, devoted team of who continuously engage in improving teaching methods and undergo faculty development programs and undertake research. Seven faculty members of department pursuing Ph.D. are in various areas programme of Electrical Engineering.



Department of Electrical & Electronics Engineering

State of Art Laboratories



Electrical & Electronics Engineering department has *sophisticated and well-equipped laboratories with modern machinery* which encourages the students to undertake projects internally. Department is equipped with the state-of-the-art equipment and laboratories with excellent computational facilities *including professional software packages like MATLAB*, *PSPICE and MIPOWER*.

Practical Exposure & Industrial Experience



By studying EEE in TIST you can gain practical exposure through various *industrial training programmes, hands-on workshops and additional certification courses.* The Electrical maintenance wing of the college is under the EEE department which enables the students to gain practical exposure from the department itself.



The *industrial training programmes conducted by L&T as part of the MoU signed* between College and L&T Switchgear Training Centre, provides an insight to the industrial practices and helps students to update and master their skills especially in the field of switchgears.



Also the various industrial visits, industry internships, attending industrial exhibitions and *talks by experts from the industry* have helped the students to keep abreast with the latest developments in the industry.



EEE Association BLITZ organizes National Level Tech fests, Hands-on workshops, technical talks & exhibitions in collaborations with KSEB, KEL, ISRO etc.

Innovative Projects

Department *promotes student's participation in International & National events like CanSat Competition conducted by NASA, Startup Summit* organized by EDII (Entrepreneurship Development Institute of India) etc.



Technical - Social Outreach Initiatives

Apart from academics, the Department constantly *strives to inculcate an awareness and understanding of moral, ethical and professional obligations* among the youngsters to mould them as valuable engineers both for the industry as well as for the society



MoU with L& T Coonoor

EEE department has signed an MoU with L&T switchgear training center, 2008. provide industrial in to exposure to the students and faculty. The MoU was recently renewed by Dr. K. Varghese, Founder Director and Manager, TIST, Prof. Dr. Preethi Thekkath, Principal, TIST and V. L&T Subrahmanian, Manager, Training Centre, Coonoor.

MOU with L&T is signed to establish collaboration between the Institute and Industry, with a view of providing a window to the world of industry within the educational institution.



- Sharing of L&T New Products Introduced in Market for oppriving L&T Switchgese Life amp present in the location, Products supply so per method understanding.
- Training session for 8 Tech M Tech students as per metaal convenience, Department is willing to send a group of antidaxes 25 students every year to L&T Techning Centre for the course * LT14 - Introduction to Industrial Kirchrisol System* 3 or 5 days training.

L& T offers internship trainings to our faculties as well as students.



A 3-day (3rd February - 5th February 2020) training session was arranged for students in L&T Switchgear Training Centre Coonoor. The industrial training program helped students to update and master their skills especially in the field of switchgear. One-day faculty training programme on PLC organised by EEE department in association with the L&T switchgear training centre, Coonoor on 9th April 2021. The training was imparted by Mr. Sreeraj, Manager, Sales & Training, L&T Switchgears Pvt. Ltd.



TIST is the one and only College under KTU where an L&T Switchgear Lab is set up.

Laboratory Infrastructure

Electrical Workshop



Electrical Workshop is intended to impart skills to plan and carry out simple electrical wiring. It includes:

- Set up for different types of wiring.
- Set up for power measurement.
- Set up for the study of power distribution arrangement

Electrical Machines Lab

Electrical Machines lab is equipped with both AC and DC machines which help in doing practical experiments with machines so as to solidify the theoretical knowledge of students. List of Machines are :

- DC Shunt, Series and Compound Motor
- DC Shunt and Compound Generator
- Induction motor and Induction Generator
- Synchronous Motor and Generator

Digital & Microprocessor Lab



Experiments on electronic circuits and digital circuits are done in this lab. Experiments done in this lab are Experiments using ICs 7483,7402,7400 etc, Programming using 8085, 8086 and 8051 trainer kit. Interfacing experiments using ADC and stepper motor and Interfacing using 8279 and 8255.

Power Electronics Lab

The experiments on power electronic devices are done in this lab. It includes:

- Rectifier Kit
- VI Characteristics Kit
- Commutation Kit
- Motor Speed Control Using SCR Kit.

Department of Electrical & Electronics Engineering



Circuits & Measurements Lab

This lab provides the platform for understanding practical implications of the fundamental laws of electric circuits, Calibration & testing of measuring instrument and accurate measurement of various electrical parameters of any circuit.

It includes:

- Single Phase and three phase energy meter.
- Wheatstone's & Kelvin's Double Bridge.
- Power factor meter, Frequency meter
- TOD meter.
- Phase shifting transformer.
- Single and three phase inductive load.



Power Systems Lab



This lab provide facility to simulate various power system operations and testing procedures of various power system components. It includes Insulation Tester for HT and LT Cable. Power Factor Improvement Trainer Kit. Earth Resistance Tester and Numerical over current relay tester.

Simulation Lab

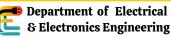
This lab consists of 24 desktop systems. Simulations using MATLAB, Mipower and PSPICE software are carried out in this lab



L&T Switchgear Lab



An advanced L& T lab is set up in the college by the experts from L&T Switchgear training centre, Coonoor as part of MoU signed between L&T and TIST. *The lab is equipped with different types of LT & HT contactors & its testing units.*



Energy Efficiency & Evaluation Lab



Energy Efficiency Evaluation Lab under EEE department aims to determine the luminous efficiency and power quality issues of various types of light fitting. *The lab promotes research activities in the areas of energy conservation, energy management, energy auditing etc.* The student project on energy auditing is conducted in this lab.

The lab also exhibits

- Various types of lighting accessories.
- Various Types of Solar PV systems.
- Experimental Solar kit from IIT Bombay
- Fluke Three Phase Analyser
- Lux meter

M. Tech Project Lab



Facilities are provided for the students do the hardware to the implementation of various projects in the area of Power Electronics. The lab has three phase auto transformer, Regulated Power supply, Digital Storage Oscilloscope for project related activities.

One of our M. Tech student Akhil M M's Project 'An Improved SEPIC Based Single Switch Buck- Boost PFC Converter Fed Brushless DC Motor Drive' undergoing testing phase.



Our Research Areas

EEE department of TIST has established a Centre of Excellence in Power Electronics & Drives for conducting research and consultancy activities in the area of renewable energy, electric drives, energy efficiency, power quality etc. The faculty members in the department pursue research work on the frontier areas of Electrical & Electronics Engineering such as

Electric Vehicles

Electric vehicles (EVs) are regarded as one of the most effective tools to reduce the oil demands & gas emissions and a great step to reach eco-friendly technologies. Researches are carried out in this area to improve the battery technologies and charging systems, challenges of EVs connecting with the grid, as well as to improve power quality issues associated with it.



PV Fed Electric Drives



The research activities on this area concentrates on application of Standalone Solar Photovoltaic Systems in various rural development activities like water pumping, solar refrigeration, Water purification etc.

Power Electronics Applications to Renewable Energy Systems

Power Electronics plays a major role in extracting energy from renewable sources such as solar, wind etc. and interconnect it to utility gird. The department focuses on various aspects of power electronics integration in renewable energy like efficiency improvement, power quality Improvement, Energy management, Smart Grid Communication and Demand Side management



Our Innovative Projects

• Our student Juhaim Ibnu Abdul Jabbar participated in the project competition organized by BITS Pilani and IIT Bombay and won 6th prize for his project *Disaster Management Vehicle*. Also he was the *member of 'TARANG'*, *the first ever team to be selected from the state for the 'design- build- fly' CANSAT competition held at 7th June 2013 Texas USA*.



Muhammed Juhaim (2010 Admission) participated and won 6th prize in BITS, Pilani and IIT Bombay for his Project Disaster Management Vehicle



• The *project named SHADE* by the students Winil C. W., Joju, Nihad and Deril Bagged the *First Prize in the Project Exhibition Competition sponsored by Kerala State Council for Science, Technology & Engineering.*

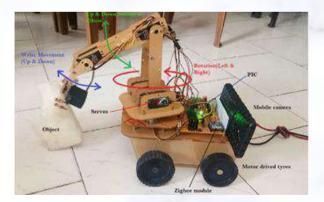


- The project Wheel Chair for Disabled by the students Renjith Krishnan, Mohammad Nijas P.A., Jeffin P. J. bagged Second Prize in the Project Exhibition Competition sponsored by Kerala State Council for Science, Technology & Engineering.
- The Project named 'Robotic Cot ROT A Completely Automated Bed – cum – Wheel chair for Paralyzed' done by Anjali
 S M, Lakshmi S Kumar, Prathyusha Prakash and Ansu George was selected among the top 10 projects in National Level Project Competition – Shrishti 2020 organised by Saintgits College of Engineering.



- The project 'Automatic Condensate Drain' done by Reuben Seinford Santhosh Nair, Sanjay R., Nithin Paulose, Muhammed Arafaz was selected for the event "Interface": TATHVA 2k18, organized by NIT Calicut.
- The *project 'Wifi Charger'* done by Amal Roy, Rahul Rajedran, Brayn, Aldrin *was selected for the event EMPRESARIO Startup Summit 2018*, organized by Entrepreneurship Development Institute of India (EDII, Ahemedabad.)
- One of *our M. Tech student* Peter K Joseph *was awarded with a Certificate of Recognition for developing a 'Robotone' in the All-Kerala Youth Innovators Meet* "THE HEADLINE" at Mar Athanasius College of Engineering, Kothamangalam.
 - The project named *Ultra-violet Sterilization Robot for Disinfection* by Gopikrishnan M, Jacob Thomas, Akshay Kumar A B and Liya Xavier (2017 Admisssion) was selected for the International Conference on Circuits, Control and Energy.
 - Our B. Tech students R. Suraj Varma, Vinayak Jayan, Acksa Baby, Namitha K.L. (2014 Admission) Developed a prototype of *Wireless Arm Robot*, which can be controlled by hand gesture & voice command and can perform pick and place operation in hazardous environment.





• B. Tech students Anand Joshy, Amal Basil, Ann Mary Martin and Alice Divya Nelson developed a *New Genre Fire Extinguisher* that can suppress the fire remotely with the help of an electric field. This technology can suppress fire from a distance and also avoid the need for firefighting material which harms the environment.

Industry - Academia Interaction

• Department of Electrical and Electronics Engineering in association with IEDC, TIST organised a 6 - Day *Online STTP on "Automation Using PLC and SCADA"* which was conducted *by IPCS Global Solutions Private Limited* from 21st June 2021 to 26th June 2021.



• A two day online *Workshop on "Machine Learning in Robotics"* was organized by IEEE PES Student Branch in association with Vidhyuth 2021. The session was handled by Cyriac Jens (Roboticist).



• On 28th February 2020 EEE department in association with IEDC, TIST organized a technical *Field Visit to Kochi Metro Rail Yard, Muttom.* A total of 42 students (EEE 2018 Adm. & EEE 2019 Adm.) and 8 faculties visited the yard.



 A total of 48 students (2016 Adm. and 2017 Adm.) along with 4 faculties attended a *Three Day Training Session* from 3rd February 2020 to 5th February 2020 *in L&T Coonoor*, as part of MoU signed.



• The department of Electrical and Electronics Engineering in association with IEDC Cell organized a 2 day *National Level Workshop on Robotics* as part of Vidhyuth 2k19. Mr. Mohammed Aslam, CEO, Inqbe Innovation, Pvt., Ltd. was the resource person.



• As part of Vidhyuth 2k19, the department of Electrical and Electronics Engineering organized a 2- day *National Level Workshop on PCB Designing*. Mr. Thomas Sabu, Chief Trainer , Neo Green Labs was the resource person.



• An *Exhibition ELE – EXPO*, focusing on power generation, transmission and distribution as well as on transformer construction, *was organized in association with KSEB and KEL* as part of Vidhyuth 2k18.



• On 20 – 21st March 2019, EEE department *organized a "Space Exhibition" in association with ISRO* as part of Vidhyuth 2k19.





• On 6th January 2018, students of S8 (2014 Admission), S6 (2015 Admission) and S4 (2016 Admission) EEE along with six faculty members made an *Industrial Visit to CIAL* (Cochin International Airport limited), the *World's first airport fully powered by Solar Energy.*



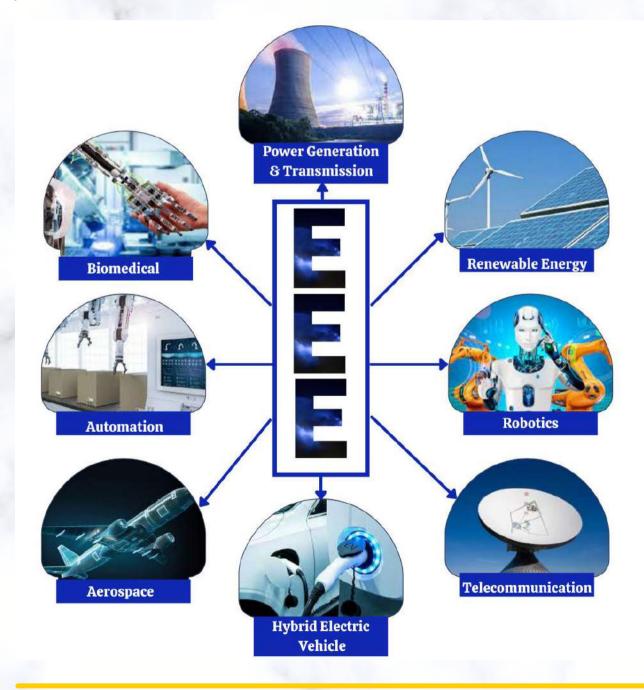
• On 21st January 2017 an *Industrial Visit was made to KEL, Mamala* by 12 EEE faculties and M.Tech students.





Why B. Tech in EEE

Electrical and Electronics Engineering is a growing and one of the most sought disciplines in the field of Engineering. It is about innovation and creation of services and technology to address key engineering issues. Electrical and electronic engineers work at the forefront of practical technology, improving the devices and systems we use every day. From solar-energy systems to mobile phones, an electrical & electronics engineer innovate to meet society's communication, technical and energy needs. A graduate degree in Electrical & Electronics Engineering opens career opportunity in the fields of Power Generation, Transmission & Distribution, Renewable Energy, Communication and Networks, Biomedical Devices, Control System and automatic controls, Electrical Machine Design, Nano Technology, Hybrid Electric Vehicles etc.



Job Opportunities

Electrical and Electronics Engineering is a practical discipline with a plethora of great career opportunities. Electrical and Electronics Engineers can work in research and development industries, engineering services firms, manufacturing, government, and tech. relevant industries include automotive manufacturing, aerospace, defense, consumer electronics, commercial construction, computing, and telecommunications.



Despite the global economic uncertainty caused by the outbreak of COVID-19, the future looks bright for *Electrical Engineers*. In fact, they *will play a central role in developing and testing the smart technologies and infrastructure* set to power the global recovery. *Demand for electrical engineers will grow by almost 5% within the next 12 months and exponentially over the coming decade.* The rapid pace of technological innovation and development will likely drive demand for electrical and electronics engineers in research and development.

Carrer Pathways for an Electrical Engineer

Design

Skills Required: Power Generation, Signal Processing, PLC, Programming

Job Roles

- Grid Design Engineer
- Network Engineer
- Design Engineer
- Signal Process Engineer *

Production

Skills Required: SCADA, Installation and Commissioning, Operation Management

- Job Roles
- Production Engineer
- Commissioning Engineer
- Metering Engineer
- Wind/ Solar Farm Manager

Sales & Other

Skills Required: Spreadsheet Calculations, Modelling and Simulation

Job Roles

- Quality Manager
 Safety, Health and Environment Manager
- Financial Forecaster
- Sales Engineer
-



Maintenance

Skills Required:

Electric Transmission (HV, LV) ,Engineering Systems, Control and Instrumentation

Job Roles

- Power Engineer
- Signalling Engineer
- Systems Engineer

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- · Site Engineer
- Service Engineer

Planning

Skills Required: Project Management, Spreadsheet Calculations

Job Roles

- Project Engineer
- Transmission Manager
- Project Manager



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Parsons Corporation Jobs 2021 | UAE Electrical Engineer Required





Recruitment For -Civil Engineers -Mechanical Engineers

-Electrical Engineers

Post- Graduate Trainees



POWER SYSTEM OPERATION CORPORATION LIMITED

(A Government of India Enterprise)

Regd. Office: B-9, 1st Floor, Qutab Institutional Area, Katwaria Sarai, New Delhi-110016

Advt. No. CC/02/2018

Recruitment of Executive Trainees – Electrical & Computer Science

POSOCO, a Govt. of India Enterprise, invites applications from Interested Candidates to fill the following vacancies:

Post	Pay Scale*	No. of Vacancies
ET (Electrical)	Rs. 24,900-50,500 (IDA)	45
ET (Comp. Science)	Rs. 24,900-50,500 (IDA)	19

Placements



Placement Details 2020 -21



Anjali S M

TCS



Pooja K Pai

Grand Hyper



Sheffin Faziludheen

TCS



Mifal Jacob

Abasoft



Fayas Muhammed

TCS



Jishna Venugopal Ernest & Young

Department of Electrical & Electronics Engineering



Ashwin Bernard

Experion Technologies



Issac Siby

V Guard



Asna K E

Hindalco Industries



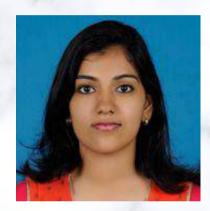
Jeetha Rose Benny

Infosys



Arya Anilkumar

Infosys



Nimmy Mathew

Infosys



Blesson M Alex

UST



Asna Sabu

SABI Electrical Solutions



Blesson M Alex

VIB Spectrum

Notable Alumni



Aparna Jose Asst. Professor College of Engineering Kidangoor

(2004 - 2008)



Minu G Senior Consultant INFOSYS (2006-2010)



Mohammad Shafeer Electrical Engineer Mwani, Qatar, Kuwait (2006-2010)





Akhil T Paul Vestas Wind Technology India Pvt Ltd

(2006-2010)



Alaap Anujan Schweitzer Engineering

Laboratories, USA

(2006-2010)



Aswathy G

Junior Engineer, Electrical Southern Railway Trivandrum

(2007-2011)



Thomas Varghese Quality System Engineer ABB (2007-2011)



Raza Ahmed

Electrical Engineer Dhafir Technologies,LLC

(2007-2011)



Bhadra R Warrier INFENION Technologies AG ,Germany (2008-2012)

Department of Electrical & Electronics Engineering

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Venkitesh R. Consultant Deloitte US

(2010-2014)



Juhaim Ibnu Abdul Jabar CFOUNDER CEO RECKONE INVENTIONS PVT LTD (2010-2014)



Sidharth S

Key Account Manager DTDS Technologies

(2010-2014)



Bhanu Prasad

Senior Engineer ,EMERSON Process Management India Pvt. Ltd.

(2011-2015)



Merrina John

Senior Software Engineer, Robert Bosch

(2011-2015)



Jithin Ajay

Technology Analyst, INFOSYS

(2011-2015)



Sreekanth S

Operation Engineer Dubai, Muncipality

(2011-2015)



Minu Nair

JLE group, New South Wales Australia

(2012 - 2016)



Neenu Simon

Software Developer Hashtag Systems INC

(2012-2016)

Department of Electrical & Electronics Engineering



Meenu A Babu

Senior Software Engineer Cabot Technology Solutions

(2012-2016)



Haneena N

Electrical Estimation Engineer Sterling Electromechanical LLC

(2012-2016)



Rojith Mathew

Engineer, ICT Department, Mannai Corporation, Doha

(2012-2016)



Amaljith P M

Systems Engineer, UST Global

(2012-2016)



Athira C S

Assistant Manager Axis Bank

(2012-2016)



Sophia Begum Service Delivery Specialist, IBM (2013-2017)



Arun K S

Merchant Navy

(2014-2018)



Manu S

Asst. Electrical Officer Seaport Shipping ,Pvt. Ltd.

(2013-2017)





Department of Electrical
 & Electronics Engineering

Testimonials

Ms. Aarsha Ajith

Asst. Engineer, KSEB 66 KV substation, Thrikkakara



[B. Tech EEE 2014-'18 Batch]

TIST played a very important role in shaping my career. Faculty imparted great values in me, which made me ready for the outside world. Infrastructure of the college is also fabulous. My experience in TIST was both educational and fun. When talking about my college first thing that comes to my mind is my dearest faculty members. Also, 1 miss my friends and all the memories 1 cherish with them. 1 wish TIST goes on doing its great work, 1'm privileged to be the part of TIST family.

Ms. Aswathy J

Junior Engineer, Electrical Southern Railway Thiruvananthapuram



[B. Tech EEE 2007-'11 Batch]

Finding the right path to success at the right time is really very important and for that I am completely contented that I chose Toc H Institute of Science and Technology. I am really indebted to the faculties and supporting staffs of EEE Department of TIST for guiding me all the way to success in my education and eventually to a good career. The friendly college environment, systematic approach towards imparting education, wide range of activities-both curricular and co-curricular, secure hostel ambience, all helped me to shape myself for this tough competitive world. I always cherish that four years in TIST as the most precious time in my life with a bunch of great friends and memories we made.

Toc H EEE in News



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Now, a gadget to operate appliances remotely

TIMES NEWS NETWORK

Kochi: A city-based engineering student has developed a gadget that can operate domestic appliances even when they are away from home.

Called project 'robotone', it has been developed by Peter K Joseph, a first-year MTech student of power electronics at Toc H Institute of Science and Technology.

Robotone was chosen as the best project by International **Electric Engineering Agency** this year and even the International Centre for Technological Innovations, an Alappuzhabased agency to support young scientists, has decided to support it. "One can operate the appliances, even if one is away from home. For instance, farmers can control the water supply in their yards when they are away from the farm," said the 22-year-old inventor, an Ernakulam native.



Toc H INSTITUTE OF SCIENCE & TECHNOLOGY ARAKKUNNAM, ERNAKULAM, KERALA- 682313

"A Meeting Place for Innovative Minds"

