DEPARTMENT OF ELECTRICAL ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY CALICUT
NIT Campus (PO), Kozhikode-673601, Kerala, India.

Vision

To be nationally and internationally recognized in providing electrical engineering education and training candidates to become well-qualified engineers who are capable of making valuable contributions to their profession and carrying out higher studies successfully.

Mission

To offer high quality programmes in the field of electrical engineering, to train students to be successful both in professional career as well as higher studies and to promote excellence in teaching, research, collaborative activities and contributions to the society.

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DEPARTMENT PROFILE

Established in 1961, the Department of Electrical Engineering of the National Institute of Technology Calicut offers programmes leading to Bachelor's Degree, Master's Degree as well as Ph.D. In addition to these regular programmes, Department is also actively involved in conducting faculty development programmes, job-oriented short-term training programmes, continuing education programmes for working professionals from industries, academic faculty and unemployed engineers. The laboratories and research facilities in the Department are well maintained and regularly updated with latest technology. Members of the faculty are actively involved in sponsored research and consultancy work.

UNDERGRADUATE AND POST GRADUATE PROGRAMMES

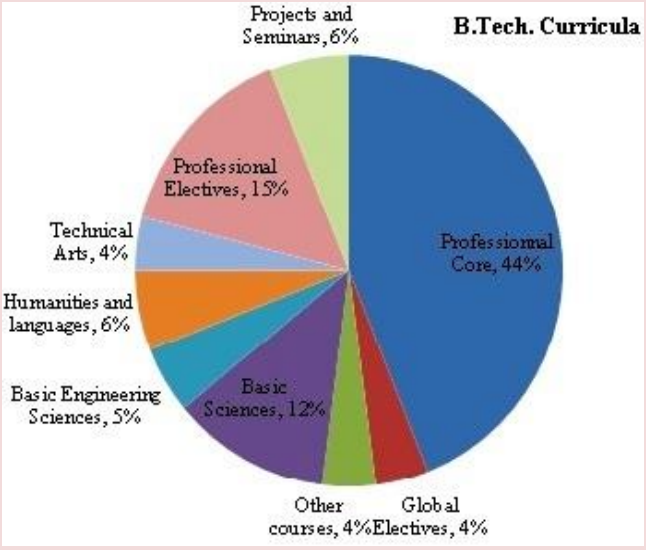
Sl. No.	Course	Duration	Year of starting	Sanctioned intake
1	B. Tech(Electrical & Electronics Engineering)	4 years	1961	154
2	M. Tech(Instrumentation & Control Systems)	2 years	1973	20+5
3	M. Tech(Power Systems)	2 years	1983	20+5
4	M. Tech(Power Electronics)	2 years	1987	20+5
5	M. Tech(Industrial Power & Automation)	2 years	2006	20+5
6	M. Tech(High Voltage Engineering)	2 years	2014	13+5

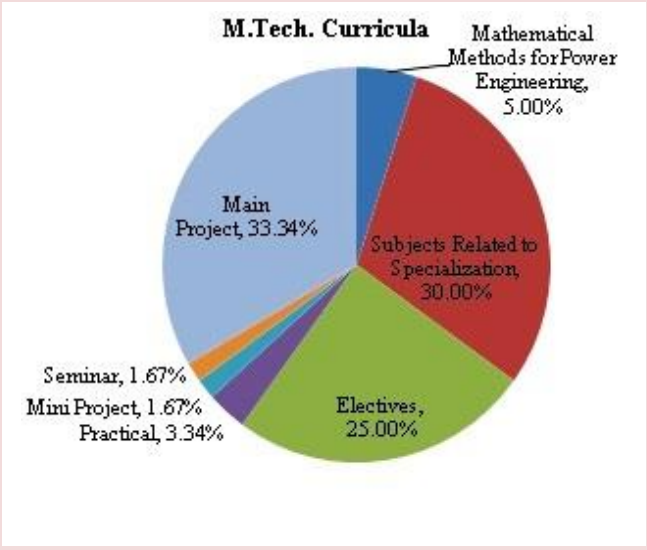
Ph.D PROGRAMME

Research work is carried out in all areas of Electrical Engineering.

Completed	Ongoing
51	76

STRUCTURE OF UG & PG PROGRAMMES





FACULTY

Name	Specialization
Professors	
1. Dr. Abraham T Mathew	Instrumentation and Control
2. Dr. Ashok S.	Power and Energy Systems
3. Dr. Jeevamma Jacob	Instrumentation and Control
4. Dr. Nandakumar M P	Control Systems
5. Dr. Paul Joseph K	Bio-Medical Instrumentation
6. Dr. Saly George	Power Electronics
7. Dr. Sivaji Chakravorti	High Voltage Engineering
8. Dr. Sivanandan K S	Instrumentation and Control
9. Dr. Susy Thomas	Control Systems
Associate Professors	
1. Mr. Ananthakrishnan P	Electrical Energy Systems
2. Dr. Elizabeth P Cheriyan	Power Systems
3. Dr. Preetha P	High Voltage Engineering, Nanodielectrics
4. Dr. Rijil Ramchand	Power Electronics and Drives
5. Mr. Suresh Kumar K S	Power Electronics
Assistant Professors	
1. Ms. Hema Rani P	Power Electronics
2. Dr. Jagadanand G	Power Electronics
3. Dr. Kumaravel S	Power Systems
4. Dr. Mija S J	Control and Guidance
5. Dr. Mukti Barai	Power Electronics
6. Dr. Sindhu T K	Power & High Voltage Engineering
7. Dr. Subha D P	Power Systems, Biomedical Engineering
8. Dr. Subhash K M	Control and Instrumentation
9. Dr. Sunil Kumar T K	Power and Control Systems
10. Dr. Sunitha K	High Voltage Engineering
11. Dr. Sunitha R	Power Systems

*Total Number of Adhoc Faculty: 18

TECHNICAL STAFF

Name	Designation
1. Mr. Sasidharan T K	Senior Instructor
2. Mr. Asoka Kumar P T	Senior Mechanic
3. Mr. Jayan V S	Senior Mechanic
4. Mr. Mohamed Sali N K	Senior Mechanic
5. Mr. Nanda Kumar K	Senior Mechanic
6. Mr. Sasesh A R	Senior Mechanic
7. Mr. Somanath K A	Senior Mechanic

*Total Number of Adhoc Technical Staff: 15

FACILITIES - CLASSROOMS / SEMINAR HALLS

1. Conference Room
2. Committee Room
3. PG Seminar Hall 1-Capacity 80: EED PG Block
4. PG Seminar Hall 2-Capacity 90: EED PG Block
5. 8 UG Class rooms: DB(306, 307), ELHC(201, 202, 303, 304) and ECLC (C, K)
6. 7 PG Class rooms: DB(105, 108, 301, 308, 309), Seminar Hall 1 and Seminar Hall 2

Conference Room, Committee Room and all classrooms/seminar halls are equipped with PC, OHP, LCD Projector, PA system and smart board wherever required.

MAJOR LABORATORIES

UG Laboratories

1. Electrical Workshop
2. Electronics Workshop
3. Electronics Circuits Laboratory
4. Electrical Measurements Laboratory
5. Electrical Machines Laboratory
6. Control Systems Laboratory
7. UG Power Electronics Laboratory

PG/Research Laboratories

1. Electrical Simulation Laboratory
2. Power Systems Laboratory
3. Power Electronics Laboratory
4. DCS Applications Laboratory
5. Process Automation Laboratory
6. Embedded Systems Applications Laboratory
7. Power Electronics Research Laboratory
8. Advanced Control Systems Laboratory
9. Power Systems & Power electronics Real-Time Simulation Laboratory
10. High Voltage Engineering Laboratory
11. Bio-Signal Processing Laboratory
12. Non-destructive testing Laboratory
13. Instrumentation Systems Laboratory
14. Centre for Testing and Consultancy

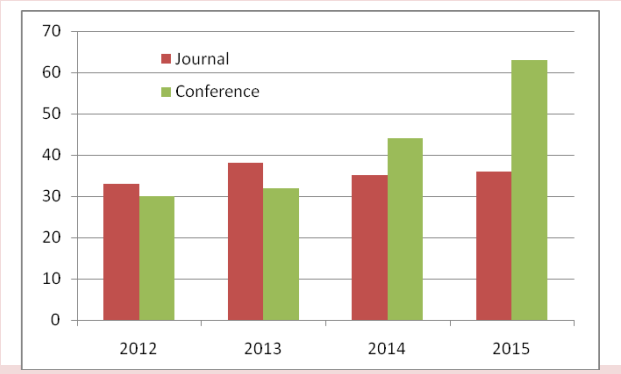
Sponsored Research Laboratories

1. LVDC Microgrid Laboratory (CDAC)
2. Distributed Energy Research Laboratory (DST-FIST)

RESEARCH ACTIVITIES

The Department has six broad research groups:

1. Power & Energy Systems
2. Industrial Power and Automation
3. Electrical Machines and Power Electronics
4. Control Systems and Instrumentation
5. High Voltage Engineering
6. Biomedical and Signal Processing



Research Publications

Sl. No.	Publication	Number of Publications	
		Up to 2015	2016
1	Journal Papers	494	42
2	Conference Papers	668	60
3	Books	7	2
4	Book Chapters	8	-
5	Patents Granted	3	-
6	Patents Filed	6	1

R & D and Consultancy/Testing Projects

Sl. No.	Name	Number			Amount (Rs.)
		Up to 2017	Completed	Ongoing	
1	Sponsored R & D Projects	17	10	7	512.00 lakhs
2	Institute Funded FRG/FRP	16	15	1	32.41 lakhs
3	Consultancy Projects	12	11	1	26.66 lakhs
4	Testing Projects	423	420	3	88.40lakhs
TOTAL					**649.47lakhs**

List of Sponsored R & D/ Institute Funded FRG/FRP Projects Ongoing

Sl. No.	Title of The Project	Investigators
1	Development of Smart Controller for Switched Reluctance Motor	Dr. Ashok S.
2	Development of Solid State Transformer as Wind Power Interfacing Device	Dr. Ashok S.
3	Development of cost effective 3 axis intelligent platform stabilization system	Dr. Ashok S. Dr. T. K. Sunil Kumar
4	Security Assessment of Microgrids in Isolated and in Grid Connected Mode	Dr. Ashok S. Dr.Sunitha R.
5	Development of Composite Insulators for High Energy Storage (Super Capacitor) Applications	Dr. Sindhu T.K .
6	Non-linear Analysis of EEG Signals of Patients with Alzheimer Disease	Dr. Subha D. P.
7	Development of Nano Composite Insulators	Dr. Sindhu T. K.

Consultancy/Testing Projects Ongoing

Sl. No.	Institution/Agency	Nature of Work	Amount
1	ULCCS Crusher Unit, Arekode, Calicut.	Energy Analysis	Rs 1.2 Lakhs
2	Mukkam Municipality, Mukkam	Testing of Street light fittings	Rs 7,500.00
3	KSEB Ltd	100A LT Fuse units	Rs 13,000.00
4	KSEB Ltd	11kV,400A AB Switch	Rs 10,000.00

INDUSTRY-INSTITUTE INTERACTION

1. NIT Calicut signed MoU with Sapience Consulting, Texas Instruments India University Program Partner, March 7, 2016.
2. Industrial Power and Automation group, Department of Electrical Engineering signed MoU with M/s Entuple Technologies Ltd Bangalore, January 15, 2015.
3. MoU between CG & EED for Industry Internship activities/training programmes, June 3, 2015.
4. MoU between ABB & EED for Industry Internship activities/training programmes, October 21, 2015.
5. EED, NIT Calicut signed Memorandum of Agreement (MoA) with CDAC, Trivandrum on Investigations using Full Spectrum Simulator mini (FSS mini) under the aegis of NAMPET Phase II, May 18, 2016.
6. EED, NIT Calicut signed Memorandum of Agreement (MoA) with CDAC, Trivandrum on the project entitled, Development of Low voltage DC (LVDC) architecture, for Residential Applications, under the aegis of NAMPET Phase II, January 14, 2016.

Regular events: Industrial visit/Industry internship/Training/Expert talks etc

EXTRA ACADEMIC ACTIVITIES ORGANIZED (during last 5 years)

Sl.No.	Programme	Number
1	IEEE International Conferences (IEEE SPICES 2015)	1
2	International Workshops	1
3	National Seminar- SPRCOA 2014 / National Workshops	5
4	Faculty Development Programmes	8
5	Short-Term Training/ Industrial Training Programmes	7

EVENTS ORGANIZED DURING 2016

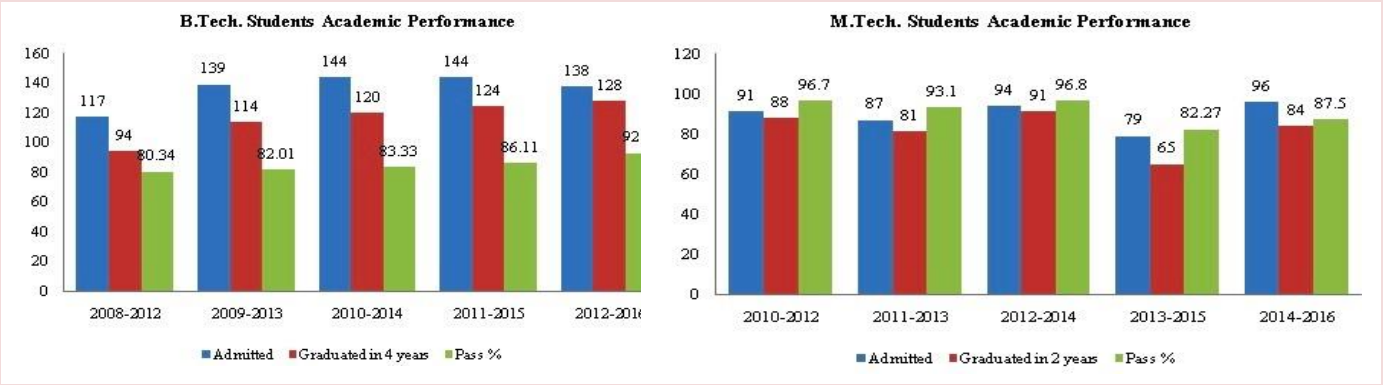
1. National Workshop on "Advanced Technology -Latex", 23 April 2016.
2. National workshop (CDAC - TEQIP) on "Research Challenges in Power Electronics and Power Systems", 6-7 May 2016.
3. FDP (MHRD-TEQIP) on "Recent Trends and Applications of High Voltage Engineering", 12-18 June 2016.
4. FDP (CDAC-TEQIP) on "Applications of Power Converters in Distributed Generation and Microgrid" (APDM-2016), 19-25 June 2016.
5. FDP (MHRD-TEQIP) on "School on Systems and Control", 29 June - 6 July 2016.
6. FDP (MHRD-TEQIP) on "Embedded systems design using MSP430", 22-24 July 2016.
7. FDP on "Embedded Systems Design using MSP – 430", NIT Calicut, 22-24 August 2016.
8. FDP on "Embedded Systems Design using TIVA", NIT Calicut, 23-25 September 2016.

UPCOMING ACTIVITIES

1. FDP on PMLK and Webench, 10-13 Feb 2017.
2. Distinguished Lecture programmes on "Control Theory, Numerical Methods for Control and recent works in active Vibration Control" by Prof. Biswa Nath Datta, 27 Feb- 1 March 2017.
3. National workshop on MATLAB and its Applications to be held on 7 -9 March, 2017, organized by IEEE PES NITC Chapter in association with EED.
4. Research Colloquium -TEQIP Sponsored programme for research scholars- 24-25 March 2017.
5. Two-day National seminar on System Reliability and Thermography to be held on 7 -8 April 2017, organized by IEEE PES NITC Chapter in association with EED.
6. PG FEST - Industry sponsored programme for PG students- 24-25 April 2017.

STUDENTS PERFORMANCE, PLACEMENTS AND ACHIEVEMENTS

1) 6 POSOCO Power System Awards. 2) 8 Best Paper Awards**.** 3) 2 First Prizes and 1 Third Prize in Paper Presentation. 4) 1 Young Scientist Award. 5) 1 Second Prize in State level Seminar.
6) Around 270 Research Papers Published



B. Tech. Placements

Sl. No.	Batch	On-Campus (%)	Off-Campus (%)	Higher Studies (No.)
1	2008-2012	90	5	4
2	2009-2013	76	20	6
3	2010-2014	62	32	9
4	2011-2015	70	21	12
5	2012-2016	70	25.0	7

M. Tech. Placements

Sl. No.	Batch	On-Campus (%)					Off-Campus (%) (as per data available)					Higher Studies (No.)				
		ICS	PS	PE	IPA	HVE	ICS	PS	PE	IPA	HVE	ICS	PS	PE	IPA	HVE
1	2010-2012	13	44	39	37		45	46	51	45		2	2	2	1	
2	2011-2013	18	23	12	46		43	61	74	42		2	3	2	2	
3	2012-2014	40	7	0	14		34	70	76	57		1	4	3	2	
4	2013-2015	33	26	61	40		51	47	23	35		2	1	3	4	
5	2014-2016	26	31	14	35	0	31	62	64	55	84	3	1	2	1	2

STUDENT CHAPTERS OF PROFESSIONAL BODIES

1. IEEE Student Chapter
2. IEEE- PES, IEEE -IAS, IEEE-CS
3. ISTE

Major Student Activities -during 2016

1. National workshop on "ELECTRIC POWER QUALITY", March 11-12, 2016 organized by Industrial Power Group & Electrical Engineering in association with IEEE PES, NITC Chapter.
2. Cluster meeting on Research by IEEE PES chapter in association with IEEE Kerala chapter and KSEB Ltd on 12thMarch , 2016.
3. Workshop on Advanced Latex held on 20 April 2016, organized by Industrial Power Group in association with IEEE PES NITC Chapter.
4. National workshop on Xilinx Vivado based FPGA design and Zynq architecture held on 3rd -4th September, 2016, organized by Industrial Power Group in association with IEEE PES
5. Training programme on "Distributed Control System with Advanced Communication Protocol in Industrial Process Automation" by Yokogawa India on 3rd November 2016
6. Invited talks by Prof. Thukaram, IISC, Prof Kincha, IISC, Mr. Thomas Daniel , MD , Gulf Power & alumnus, Mr. Sunil Varghese Mathew, Sr. R & D Manager, Kalki Technologies
7. Aptitude test, Quiz, Debate , Summer Camp, Workshops etc.

TESTING AND CONSULTANCY FACILITIES

Testing :

1. Acceptance Testing of LT/HT (upto 11KV) conductors/cables, switches, insulators, motors, AB switches, fuse units, Battery etc.
2. Performance Testing of UPS, Inverters, Transformer oil, CTs, PTs etc
3. Performance Testing and analysis of Solar PV system
4. Acceptance Testing of light fitting with FTL,CFL and LED, fan etc..

Consultancy :

1. Energy analysis of industries/Institutions etc
2. Feasibility studies of Renewable energy projects.
3. Re engineering/Design of standby power supplies.
4. Engineering Design /Analysis of issues or problems in Power and Energy, Control and Instrumentation, Machines and Power Electronics and High Voltage Engineering.

OUTREACH

1. Many faculty members are resource persons to different academic/training programmes of Educational Institutions/Industries in India as well as abroad.
2. Few faculty members are associate editors of journals like **"**Advances in Control and Optimization of Dynamical Systems" & "Journal of medical Imaging and Health Informatics" etc. Also members of state level expert committees.
3. Most of the Faculty members are reviewers of International Journals and Conferences
4. Many faculty members are Members of Board of Academic council of different Universities and Panel Members in Selection Committees in Universities/PSUs.

A Few Distinguished Alumni

Dr Tommy Sebastian, IEEE Fellow
,Chief Scientist , Innovation
Centre,Next eer Automotive, US

Mr Vikas Moondra,
MD,
Sterling Lomax (I) Ltd

Mr Bennet George V,
Chief Design Manager
Schneider Electric , India

Dr Sheela D S
SR Director (Control & Guid:)
VSSC , India

Dr H S V S Kumar N
SR R & D Manager
ABB, Singapore

Mr Manu B
SR Systems Manager
TI India Ltd