2023-2024

ELECTRICAL ENGINEERING DEPARTMENT

VISION

To evolve as centre of excellence for quality education, training and research with integrity and ethical standards in the field of Electrical Engineering.

Mission

To offer demand-driven industry relevant, value based education and training in the area of Electrical Engineering.

To develop need-based curricula and instructional materials in the area of Electrical Engineering to enhance effectiveness of teaching-learning process.

To collaborate with industry and research institutions to undertake multi-disciplinary research and development with focus on Electrical Engineering.

QUALITY POLICY OF DEPARTMENT

Institute is committed to provide high quality and customized education, training, R & D and extension services to technical and vocational education system, industry and community. The institute shall develop leadership in technical teacher training and provide educational products and services to enables the technical education system to achieve excellence internationally.

ABOUT US

Education is all about creating an environment of academic freedom, where bright minds meet, discover and learn. Electrical Engineering is a continuously evolving field with new innovative ideas emerging every other second. As technology has advanced, so have the challenges faced by the fresh engineers and technocrats. Electrical Engineering is one discipline that naturally partners with other disciplines to open whole lot of new engineering avenues. Examples include Power Electronics - with Power and Electronics Engineering and Bio-medical Sciences - with Medicine. The Electrical Engineering Department at NITTTR, Chandigarh grooms teachers of Polytechnics and Engineering Colleges in this field using new-age information and computer-intensive technologies. It is one of the major departments, created since, the establishment of the institute.

Programme Educational Objective of M.E Electrical Engg.

PEO 1 Graduates are expected to excel in modern industry, teaching, higher education and research exhibiting leadership qualities.

PEO 2 Graduates are to be transformed to provide solutions in interdisciplinary areas involving Instrumentation applications.

PEO 3 Graduates should have good communication skills, willingness to work in groups and to develop multidisciplinary approach in problem solving and exhibiting leadership qualities.

Programme Outcomes of
M.E Electrical Engg. (Instrumentation and Control)

PO1 : An ability to independently and ethically carry out research / investigation and development work to solve practical problems.

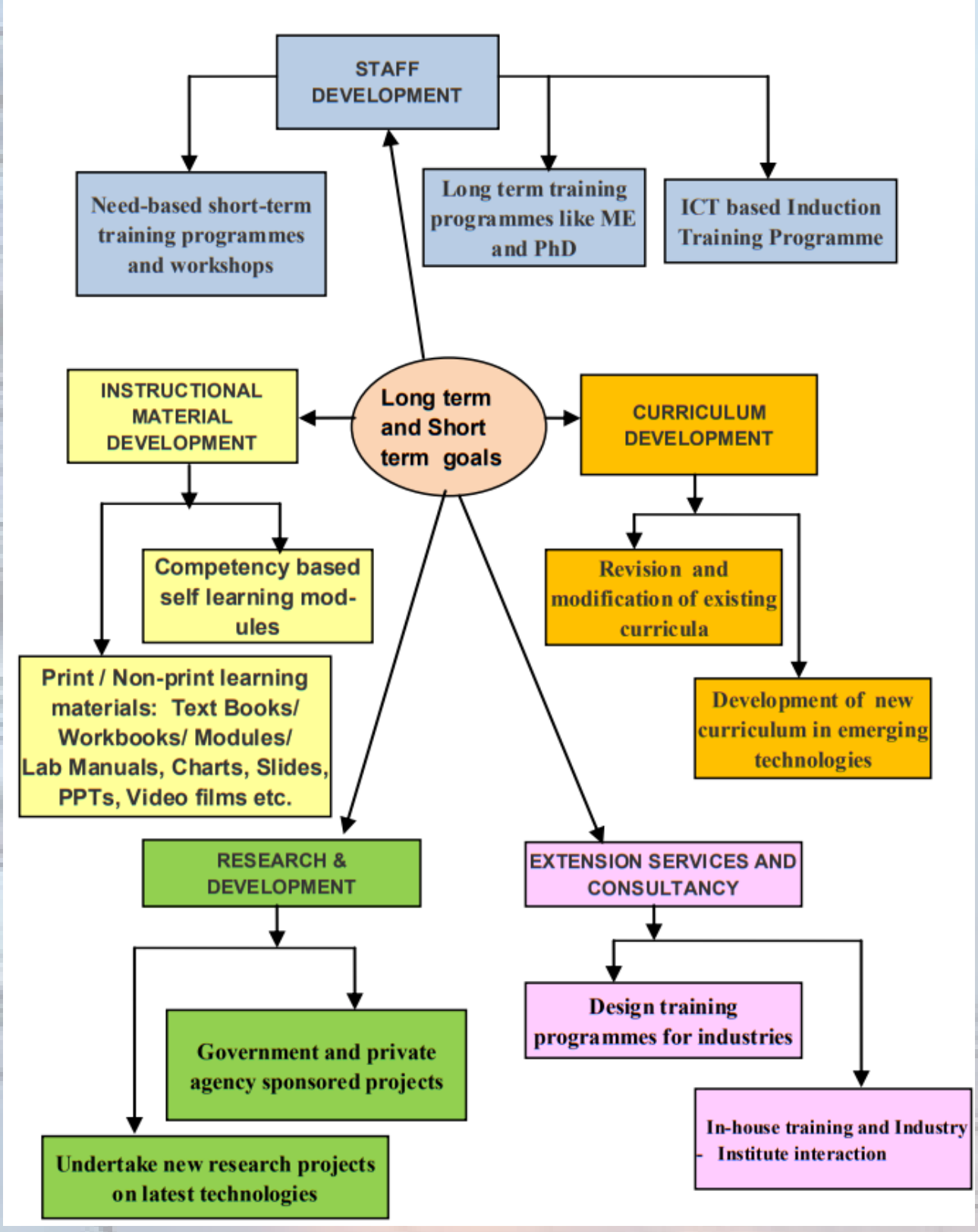
PO2 : An ability to write and present a substantial technical report/document.

PO3 : Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

PO4 : Ability to apply appropriate techniques and resources embedded with modern engineering tools to solve complex engineering problems in instrumentation, control and electrical engineering critically to handle emerging technologies related to industries.

PO5 : Ability to demonstrate leadership and skillful project management capability in multidisciplinary environments.

SHORT & LONG TERM GOALS



SHORT TERM TRAINING PROGRAMMES

The department has also been very active in conducting the need based short term training programmes every year as per the institute Operational Plan. To mention a few are:

Energy Management, Power Electronics, Automation in Industries, MATLAB, Repair & Maintenance of Electrical Equipment, Electric Drives and their Control, Thermal Power Station Practices, Hydro Power Station Practices, Virtual Instrumentation, Artificial Neural Networks and Fuzzy Logic, Microcontroller and its Applications, Electrical, Electronics and Computer Engineering Project Work, PLC and its Applications, Computer Applications in Electrical Engineering, Computer Aided Power System Analysis, FACTS Technology, Electrical Processes in Diesel Locomotives, Trouble Shooting and Repair of Transformers, Thyristorised Control of Electric Motors

FACULTIES IN THE DEPARTMENT

Dr. (Mrs.) Lini Mathew

ME (Electrical Engineering) , PhD.

Professor and Head

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Mobile No.: +91-9876440458.

Research Interests : Digital Signal Processing, Soft Computing Techniques, Virtual Instrumentation, Measurement Instrumentation and Data Acquisition, Power System Stability.

Dr. Ritula Thakur

Associate Professor

Qualifications :

Ph.D.(Engg. & Tech.) from Panjab University

M.E.(Power Systems) from Panjab University

B.Tech.(Electrical Engineering) from Punjab Technical University

Contact Detail

Dept. of Electrical Engineering,

NITTTR, Chandigarh-160019

Email : ritula.thakur@gmail.com.

Phone No. : 0172-2759548.

Research Interests : Embedded Systems, Power Systems, Power Quality, Sensing & Instrumentation, PLC & SCADA, Multivariate data Analysis using The Unscrambler Software, Electrical Impedance Spectroscopy, Optical Spetroscopy based Food Quality and safety Analysis, Robotics, Modelling of Drives using Vissim Software, Machine Learning.

Dr. Poonam Syal

Professor

Qualifications

:Ph.D.(Engg. & Tech.) from Panjab University

M.E.(Electrical Engineering) from Panjab University

B.E.(Electrical Engineering) from Panjab University

Contact Detail:Dept. of Electrical Engineering,NITTTR, Chandigarh-160019

Email : poonamsyal@nitttrchd.ac.in.

Phone No. : 0172-2759568, Fax No. 0172-2793893.

Research Interest : Energy Management, Renewable Energy based Technologies, Assistive Technologies, Research Methodology, Appropriate Technologies, Planning and Management for Rural Development, Opto-electronic Instrumentation, Instrumentation for Environmental Engineering, Sustainable Development, Green Technologies, Rural Women Empowerment.

TECHNICAL STAFF

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Junior Electronics Engineer
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NON TECHNICAL STAFF

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Assistant Section Officer
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Sh. Ram Kewal
Lab Attendant
0172-2759560

REGULAR RESEARCH SCHOLARS REGISTERED IN PUNJAB UNIVERSITY, CHANDIGARH

Mr. Kuldeep Singh

Title: Design of Cascaded Multilevel Inverter with Reduced Switching Technology for Charging Stations of Electrical Vehicles.

Email : kuldeepsinghkharb.ee@gmail.com

Supervisor : Dr Lini Mathew

Mrs. Preeti Kumari

Area of Interest: Sensors and Instrumentation

Email : pgrr.2403@gmail.com

Supervisor : Dr Lini Mathew, Dr Poonam Syal

Mrs. Anju Bala

Research Scholar

Title: Electrical Vehicle

Email: Thakur.dimple88@gmail.com

Supervisor: Dr Shimi S.L.

Mrs. M Soujanya

Research Scholar

Title: Energy management of AC Microgrids

Email: ram141311@gmail.com

Supervisor: Dr Shimi S.L, Dr Ritula Thakur

Mr. Shivaji Karad

Research Scholar

Title: Development of optimal real time controller for doubly fed induction based wind energy conversion system

Email: shivajikarad@gmail.com

Supervisor: Dr Ritula Thakur

Mr. Shivaji G. Thube

Research Scholar

Title: "Design of Optimal and Robust Wireless Controller for Cyber-Physical Process Control Application"

Email: sgthube10@gmail.com

Supervisor: Prof. Poonam Syal

DEPARTMENTAL LABORATORY

ELECTRICAL MACHINES LABORATORY




In addition to various conventional ac and dc machines, one set of universal machine is also available in the laboratory. A part of the Electrical Machines Laboratory is specifically developed for Contactor Control of Electric drives wherein various trainer boards have been developed for performing different exercises in this area.

PLC LABORATORY

The PLC laboratory is equipped with PLC based control system and Advanced PLC Trainer; other interfacing devices to train students how to program and upload ladder logic code. The lab is based primarily on the Allen Bradley family of Programmable Logic Controllers, which are widely used in factories and other settings

POWER ELECTRONICS LABORATORY

In addition to number of training boards in Power Electronics, the laboratory is equipped with trainers on solid state motor control, three-phase triggering system, microprocessor based control systems, stepper motor control, thyristor based universal control kit, etc.

Power Electronics Laboratory also has a microprocessor based energy manager, large number of measuring instruments, Solar PV Training and Research Kit and Cascade Multilevel inverter (H-Bridges) which can be interfaced with MATLAB using dSPACE. unit and Cyclone III FPGA development kit

Embedded Systems Laboratory

The Laboratory has a set of training boards on microcontrollers , Microprocessors , Robotic Arm , FTIR Spectometer

Process Control Laboratory

This laboratory has facilities for experiments on Microprocessor and PC based process control including flow, level, temperature etc. along with the supporting software. The Laboratory has a set of training boards on Transducers, Process Control, Analog Motor Control, Digital Motor Control and PC based data acquisition system in addition to various sensors, transducers and measuring instruments.

Computer Applications Laboratory

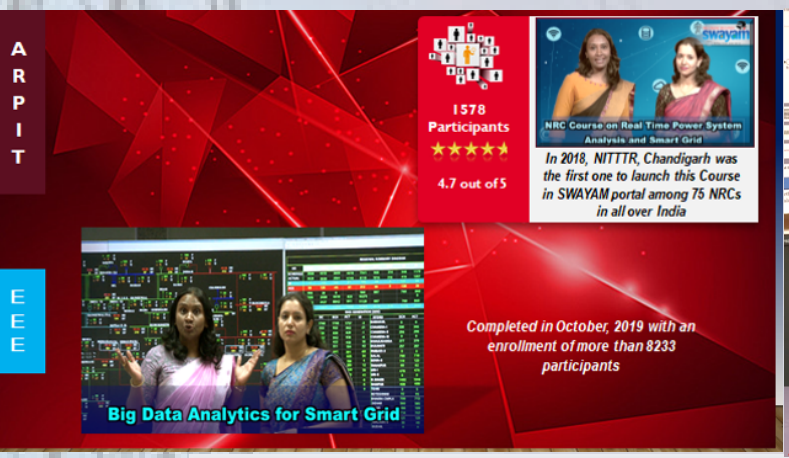
The computer applications laboratory has various software packages such as MATLAB, LabVIEW, PSCAD, LIVEWIRE, LADSIM etc. which are used for simulation, design and analysis of various electrical and electronic systems and their control.

Virtual Instrumentation Laboratory

This laboratory have various equipment's such as NI ELVIS II with Circuit design bundle, Mechatronic Sensor board, Quanser Qnet DC motor control, Quanser Qnet rotory inverted pendulum, Quanser Qnet HVAC trainer, free scale NI Elvis microcontroller prototype board, Vernier Gran Engineering Sensor kit, Vernier Bio-instrumentation sensor, Emona ETT-211 Fotex fiber optics communication Trainer etc.

DEPARTMENTAL LIBRARY

Department's MOOCS Initiatives



COLLABARATIONS & OTHER PROGRAMMES CONDUCTED BY DEPARTMENT

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