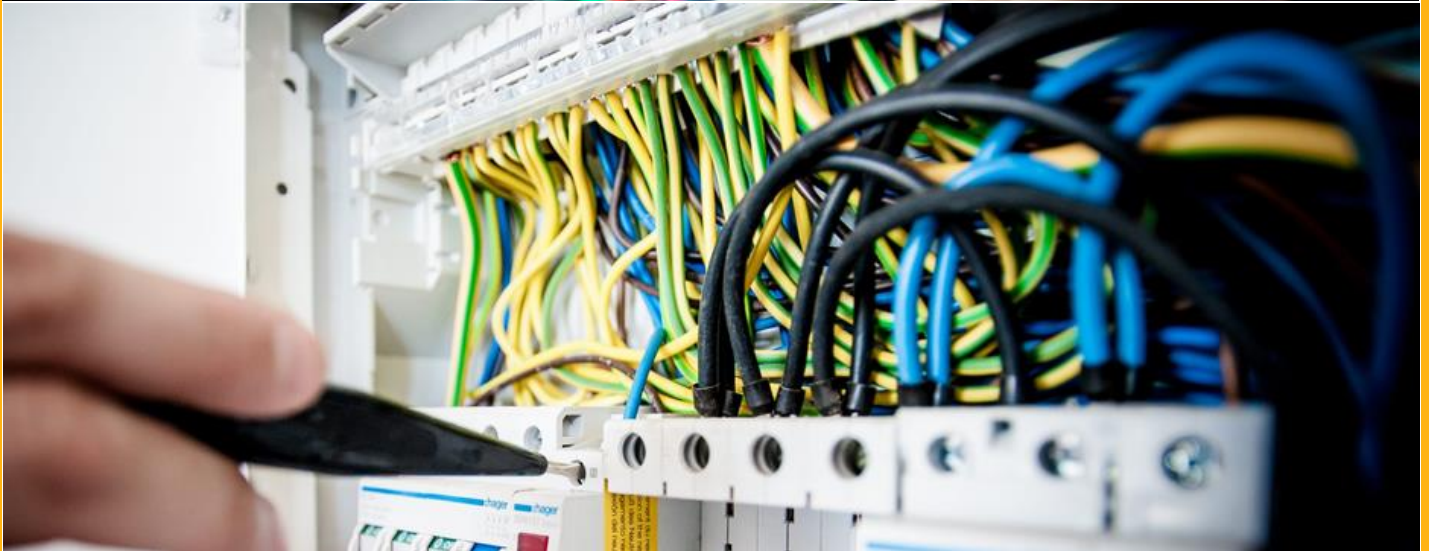


INSTRUMENTATION CENTRE
DEPARTMENT OF ELECTRONIC ENGINEERING

PROFILE



NED UNIVERSITY OF ENGINEERING & TECHNOLOGY

University Road, Karachi – 75270

Telephone: (021) 99261261-8 Ext: 2265 & 2514

Fax: (021) 99261255

Email: smic@neduet.edu.pk, Web: ic.neduet.edu.pk,

Facebook: fb.com/instrumentation.centre

ABOUT INSTRUMENTATION CENTRE

The Instrumentation Centre at NED University of Engineering & Technology, an ISO 9001 certified organization, was established in 2005 by HEC funding and ever since, it is providing valuable and high quality engineering services to the departments of NED University as well as to industrial, academic, public and commercial organizations for diversified applications.



Main Objectives

The Instrumentation Centre mission is to focus on following areas:

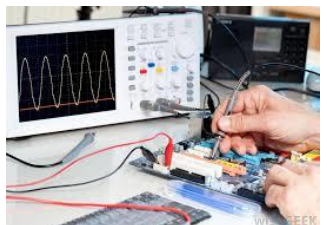
- Test & Calibration
- Engineering Services
- Professional Training
- Design and Development



ENGINEERING SERVICES WE OFFER

Our design and engineering capabilities are summarized as follows:

- **Calibration of Instruments**
- **Repair**
 - Electrical & Electronic Instruments
 - Electronic Cards
- **Electrical & Instrument testing and analysis.**
- **Training & Engineering Consultancy for industry.**
 - Electrical
 - Instrumentation
 - Energy & Power Quality Analysis
 - Power Factor Improvement
 - Energy Optimization Solutions
 - Thermography / Thermal Imaging
- **Fault diagnosis and repair services for electronic circuits.**
- **PCB designs via CNC Machine**
- **Product Development.**
- **Plant Maintenance Services**
- **Solar Power Design Services**



CALIBRATION & REPAIR SERVICES

Standard Calibration Services:

NMI traceable Certificate of Calibration

- Recall notification month prior to due calibration
- Maintaining life time historical data
- Calibration sticker affixed on equipment
- Cleaning of equipment
- Fast turnaround 4-5 working days
- ISO-9001: 2008
- In-house and On-site Calibration services



Electrical Test & Process Instrument Calibration Scope & Ranges

We calibrate all major brands of:

- Multimeters Up to 6 ½ Digits (All Parameters)
- Voltmeters & Ammeters
- Clampmeters (up to 500A AC/DC)
- Insulation Testers (up to 5kV)
- AC/DC Power Supplies
- Earth/Ground Testers
- Oscilloscopes Up to 600 MHz
- Temperature calibration 0 to 650 °C
- Pressure Calibration 0 to 700 bars
- Weighing bridge calibration upto 2Kg
- Function Generators upto 200 MHz
- Power Quality Analyzers
- Data Loggers
- mA Calibrators
- Frequency Counters 200 MHz
- Power Meter



Don't see your instrument on this list? We can still likely calibrate it! Request a quick quote.

Repair Services

With over 10 years of performing quality calibrations and repairs, we have our procedures and costs streamlined to suit modest budgets. With the help of state of the art IC testing and on-board circuit diagnostic equipment, our expertly trained repair technicians can turn your jobs around faster than the OEM – and often for less.

Instrumentation Centre offers following repair services.

- Electronic & PCB cards Repair.
- Test & Measuring Instruments such as multimeters, Process Calibrators, oscilloscopes, etc.
- **Process Control & Instrumentation Repair**
- Motion Control components Repair such as **AC/DC Drives, Power Supplies** etc.
- IT equipments **UPS, Inverters, Routers, Motherboards.**



ENGINEERING TESTING SERVICES

Instrumentation Centre provides a nationwide service for various aspects of Electrical & Instrument testing and much more. We have fully qualified key personal to ensure a quality service at very competitive rates.

Following are some Electrical & Instrumentation testing services we provide

- Power Quality testing
- Onsite kWh & kVARh Meter Testing
- Onsite Instrument & transmitter Testing using Field Callibrator, Industrial Signals Simulators and HART communicator.
- Cable Insulation & Fault location Testing
- Earth Testing
- Portable Appliance Testing (PAT)
- Resistivity/Surface Resistivity Testing
- Cable Identification
- Elec/Magnetic Field, LUX Testing
- Vibration , Noise/Sound Level Measurements
- Optical Fibre Fusion/Splicer
- Thermography
- Flow Measurements



TRAINING & CONSULTANCY SERVICES

Providing Practical Engineering Skills Training Courses For Industry

Instrumentation Centre, NEDUET is an engineering skills training provider with years of experience behind it. We provide:

- A comprehensive range of highly-focused technical courses in the areas of Electrical, Electronics & Instrumentation.
- The emphasis is on useful practical skills
- A 'hands-on' approach to training so that delegates 'learn by doing' on modern industrial equipment
- Competence-based and Nationally recognised NEDUET certificates
- Convenient delivery of training at your own site (anywhere in the Pakistan) or on a scheduled course
- Customised courses can be created to match specific training needs
- Comprehensive course notes are provided for all candidates on the courses.

Trainings List



- Instrumentation & Calibration Course
- Power Analysis & Electrical Testing
- ISO 17025:2005 Calibration & Testing Standard for laboratories
- Measurement Uncertainty & Uncertainty Budgets for ISO 17025.
- Electrical Distribution System
- Real Time Data Monitoring & Analysis using LABVIEW
- Hands-On Programmable Logic Controller (PLC) Training
- Motor Control & Power Wiring
- PCB Manufacturing
- Electronic Fault Finding & Soldering Techniques
- Repairing of Instruments & PCB Boards.
- Image Processing
- Understanding Engineering Drawings, Schematics & Symbols for technicians and operators
- Industrial Safety & Health
- First line maintenance training
- Hazardous Area Classification & Installation
- Develop your own Data monitoring system
- Industrial Networking & Controls
- Introduction to Pneumatics including fault finding and diagnostics
- Introduction to automated Industrial Control Systems,
- Power Factor Improvement
- Metering, Billing & Loss Reduction Best Practices
- Industrial Energy Assessment

Following are the courses we offer but not limited to. For details of training solutions we provide please contact us during office hours or email at smic@neduet.edu.pk.

Engineering Consultancy Services

Instrumentation Centre provides engineering design and planning services in the field of Electrical & Instrumentation to various industrial sectors. Following is a list of services offered:

- Electrical Network Planning & Design
- Power Quality Analysis
- Industrial Electrical Billing Analysis and Optimization
- Power Factor Improvement for Industries: Regulations, Design & Installation
- Energy Audit
- Instrument Selection
- Solar Power
- Generator Installation
- Proficiency Testing/ILC
- ISO 17025 Calibration System deployment
- Calibration & Testing: Best Laboratory Practices
- Quality Document Preparation for ISO 17025:2005



POWER QUALITY ANALYSIS & ENERGY MONITORING

We offer **power quality & energy monitoring equipment** from leading brands such as Fluke, Yokogawa and Ideal. In addition we can design, install, commission and support metering systems for both Continuous Energy Monitoring and Continuous Power Quality Monitoring.

Instrumentation Centre have a range of Portable Power Analysers (IEC61000-4-30 Class A equipment) and our expert engineering teams deliver **Power Quality Studies, Power Factor/Load Profile Surveys** and **Harmonic Studies**.

We provide a quick response in getting to site and liaise with clients throughout the entire process of problem identification to solution. **Energy Efficiency Measurements** can be performed on installed equipment. We also provide solutions for **Demand Control, Power Factor Correction** and **Harmonic Filtering**.



ENERGY OPTIMIZATION SOLUTIONS

Motor and Drive optimization

Unfortunately, the vast majority of motors are inefficient, causing wastage of a significant fraction of their annual running costs. As a result, up to 95% of the lifecycle cost of a motor is typically associated with the energy it consumes in operation. Taking into account the whole life cost of equipment, we conduct a prioritized review of your motors and drives on-site and recommend upgrades or replacements that ensure the efficiency and reliability of the application. Once new equipment is in place, savings may be verified through sub metering or temporary energy meters.



Power Factor Improvement

To make good use of your purchased supply capacity and reduce energy losses due to over loading/heating of cables and distribution gear, the overall power factor of your site should be near 0.99 or 99%. Furthermore, to avoid power factor cost penalties it should be greater than 0.90 or 90%.



Improving your power factor will lead to cost savings from:

- Avoidance of power factor penalty
- Reduction in the maximum demand
- Reduced maintenance costs
- Improved security of supply
- Minimizing the Line Losses, thus saving Power Consumption
- Longer life for Electrical circuits, cables etc

Taking a systematic approach, we first assess your site's overall power factor and estimate the cost benefits of installing Power Factor Correction.

Electricity Tariff Optimization

We adopt a 2 step process:

1. We check your historic invoices for any supplier billing errors
2. We evaluate the options and benefits of changing shift patterns or operating patterns of certain equipment, to reduce maximum demand, or avoid peak period and capacity charges. We prioritize strategy adoption and also check savings made post tariff change and plan a future re-assessment review.

Energy Efficient Lighting

After an initial review of your lighting installation, if there are opportunities for improvement, we will carry out a detailed lighting survey and produce a written report, highlighting the following:

- Existing running costs
- Breakdown, by area, of recommendations
- Lamp/luminary type and mode of control
- Improvements to lighting quality and levels
- Maintenance requirements (lamp change frequency etc.)
- Energy, cost and CO2 reductions



PRODUCT DEVELOPMENT

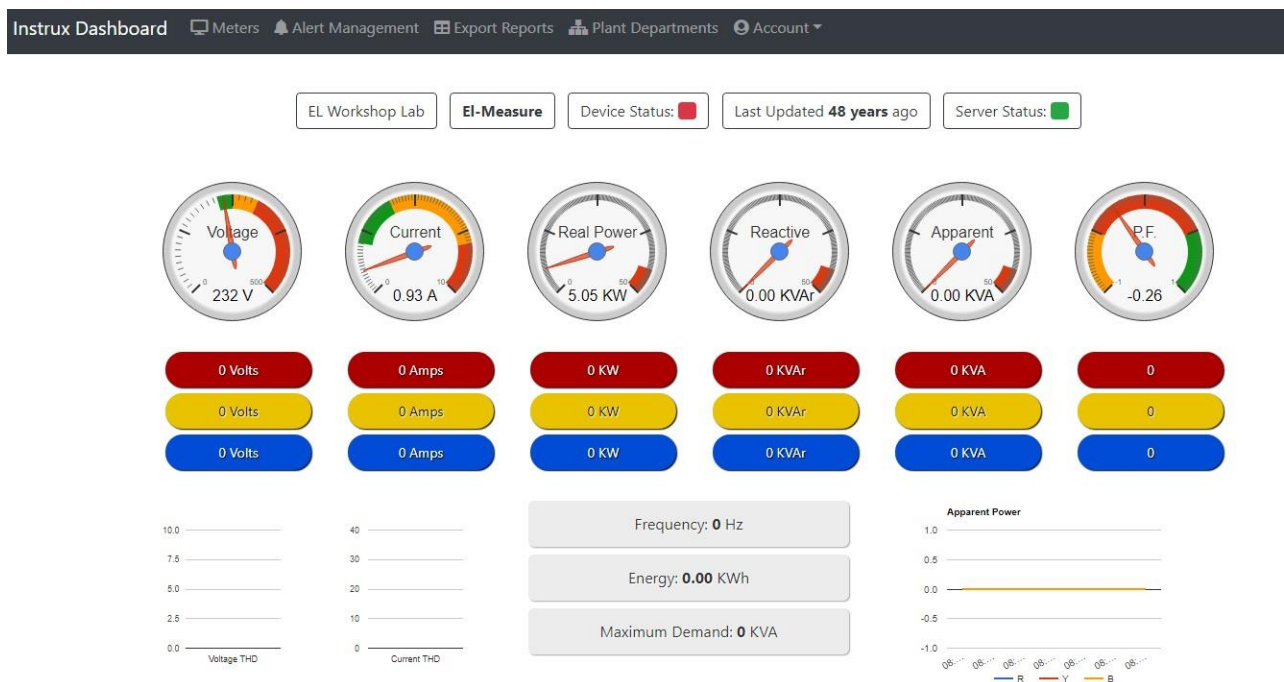
Instrumentation Centre is striving to transform concept to reality using innovative technology. Our mission is to resolve the national technological and challenging issues at hand to provide robust, reliable and economical solutions through locally develop products & solutions. Following are the product development divisions we have:

1- Innovative Technologies

- a. Robotics
- b. CNC Machines
- c. User Customize Electronic Products
- d. Embedded systems
- e. Data Acquisitions systems for remote monitoring

2- Energy Divisions

- a. Web based Remote Energy Monitoring Applications for Industries & Buildings
- b. Mobile applications for Air Conditioning Energy usage



FACILITIES

Electrical & Electronic Calibration Lab	Process Instrumentation Lab	Equipment Testing Lab
Fluke 5500 Calibrator 7.5 digits	Bemax MC5 multifunction Calibrator	Noise Doso meter & calibrator
Circuit Breaker Tester	Dry Bath calibrator, Ametek	Vibration Meter
Cable Fault Locator	Cal gauge XP caltros	Bench mount range conductivity TDS meter
Cable identifier WT500	Fluke Current loop simulator 4 - 20 mA	Moisture Meter Model: CA
Cable Insulation Tester	Calibration Test Bench Make Nagman	PH Calibrator HI931001 HANNA
Phase Sequence Tester	Fluke Documenting Process Calibrator	Water purity indicator PH meter
Electrical Power Analyzers Fluke 43B, Ideal 800 series, Yokogawa	Simulator Handled Pt-100	Bench Top Thermohygro Meter Hi- 8564
Resistivity Tester-H700	IR Calibrator FLUKE	Communicator Fieldbus Emerson
Elect/Magnetic Field Meter/Detector	Precision absolute manometer	Tacho meter
Meter Volt /MA calibrator, Fluke 715	Precision Glass Thermometer- 1 to 2010 C	LUX meter
	Test Pressure gauges 0 TO 10000 psi	Fusion Splicer

CLIENT LIST

- ❖ Nestle Pakistan Ltd
- ❖ K-Electric
- ❖ Maritime Technologies Complex, Pakistan Navy
- ❖ ZIAFCO Engineers & Contractors
- ❖ Telenor Pakistan Ltd.
- ❖ ZOR Construction Chemicals
- ❖ Electro Power Consultants
- ❖ Comsats Institute of Information Technology, Islamabad.
- ❖ PAF KIET, Karachi
- ❖ Usman Institute of Technology
- ❖ PPOE Pvt. Ltd.
- ❖ SalTec Power Link Karachi, Pakistan
- ❖ Power Professional & Engineers
- ❖ Intertex Corporation Karachi, Pakistan

