



PTU Sponsored

One Week Faculty  
Development Programme

on

**LabVIEW and its application  
in Engineering**

at

Gian Jyoti Group of Institutions,  
ShambhuKalan

from

23<sup>rd</sup>~27<sup>th</sup> January 2012

**COORDINATORS**

Ms. Ramandeep Sandhu(09463643648)

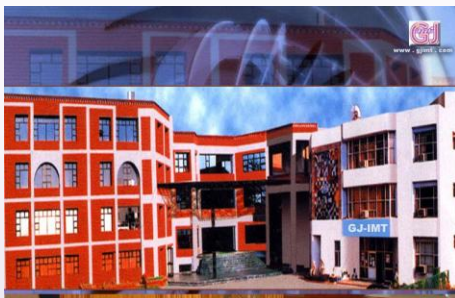
Ms. Preeti Viridi (09501695156)

## Objectives

World needs high-quality engineers for the implications of globalization such as innovation as the basis of competitiveness. India has huge amount of raw talent to address these needs. However, the rapid expansion of engineering educational institutions in India in recent years has created serious problems of maintaining quality engineering education and research to sustain and fuel economic growth in India itself. Keeping this in mind, Gian Jyoti Group of Institutions is organizing a one week Faculty Development Programme on "LabVIEW and its Applications in Engineering" to achieve sustained excellence and leadership by introducing innovative techniques of computer based design, analysis, measurement and control. This will enable faculty to develop skills on the latest technologies for research and teaching. This program will not only stresses upon indigenous development of measurement techniques using hardware and software components, but at the same time provides world class sophisticated instruments for advanced research and consultancy.

## Gian Jyoti Group

With glorious and credible track record, Gian Jyoti is a name that stands for disciplined education offering a platform to provide quality education.



- ❖ **1998:** Gian Jyoti Institute of Management & Technology (GJIMT), Mohali.
- ❖ **2003:** Gian Jyoti School of Total Quality Management and Entrepreneurship (PGSTE).
- ❖ **2008:** Gian Jyoti Global School (GJGS), Mohali.
- ❖ **2010:** Gian Jyoti Institute of Engineering and Technology (GJIET) and Gian Jyoti School of Management (GJSM), an integrated campus Gian Jyoti Group of Institutions (GJGI) Shambhukalan.
- ❖ **2011:** Gian Jyoti NI LabVIEW Academy (1<sup>st</sup> in North India), GJIET Shambhukalan.

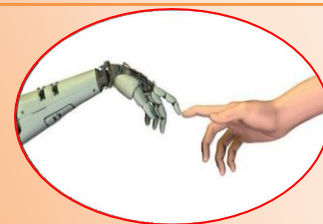
## NI LabVIEW Academy

Gian Jyoti Group of Institutions has put up a stepping stone towards its achievement by establishing North India's First NI LabVIEW Academy. It was inaugurated by Dr R.S. Khandpur, Director, Pushpa Gujral Science city, on April 2, 2011.

### Hardware and Software:

NI LabVIEW Academy houses:

NI Academics Site License.	:	30
NI USB-6351, X Series DAQ (16 AI, 24 DIO, 2 AO), 1.25 MS/s single-channel sampling rate	:	10
Robotics sbRIO starter Kit	:	01
PCs with Intel Core 2 Extreme Processor QX9770	:	30
Sensors and other electronic components	:	As per req.
Multimedia for computer based training courses	:	01



## Why LabVIEW....

LabVIEW is a graphical programming environment used by millions of engineers and scientists to develop sophisticated measurement, test, and control systems using intuitive graphical icons and wires that resemble a flowchart.

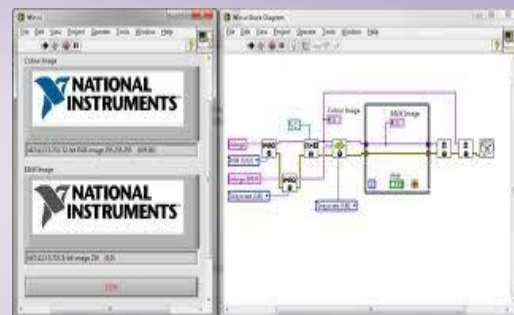
- ❖ **Simplify Control:** Manage Multiple Instruments from a Single Development Environment.
- ❖ **Integrate Hardware:** Simulate Variables in a Virtual Environment to Ensure Product Quality.
- ❖ **Code Reuse:** Save Time and Effort.
- ❖ **Deliver Projects Faster:** Create Elegant Applications.
- ❖ **Simulate Systems:** Reduce Test Time no matter how complex your Product.
- ❖ **Visualize Parallel Code:** Build your Application the same way you see.
- ❖ **Faster Programming:** Graphical Programming & Dataflow Representation.
- ❖ **Data Display and User Interfaces:** Providing built-in & Custom Controls
- ❖ **Multicore Programming:** Providing Automatic Multithreading & Execution Highlighting.
- ❖ **Hardware Integration:** Providing I/O and Communication, Plug-and-Play Hardware.
- ❖ **Data Storage and Reporting:** Providing File I/O Designed for Engineering Data & Flexible Reporting Tools.
- ❖ **Advanced Analysis:** By Built-In Analysis & Inline Signal Processing.

## Where can you Use....

### Data Acquisition (DAQ)



- ❖ Acquiring Data and Processing Signals
- ❖ Automating Test and Validation Systems
- ❖ Designing Embedded Systems
- ❖ Industrial Measurements and Control
- ❖ Academic Teaching and Research



## What will you Learn....

- ❖ **Navigating LabVIEW**
  - Virtual Instruments (VIs)
  - Project Explorer: Front Panel & Block Diagram
  - Dataflow & Building a Simple VI
- ❖ **Troubleshooting and Debugging VIs**
  - Debugging Techniques
  - Error Checking and Error Handling
- ❖ **Implementing a VI**
  - Front Panel Design
  - Loops and Case Structures
  - Timing a VI & Plotting Data
- ❖ **Relating Data**
  - Array and Cluster
  - Type Definitions
- ❖ **Managing Resources**
  - Understanding File I/O
  - DAQ Programming
  - Instrument Control Programming
  - Using Instrument Drivers
- ❖ **Developing Modular Applications**
  - Understanding Modularity
  - Building the Icon and Connector Pane
  - Using Sub VIs
- ❖ **Common Design Techniques and Patterns**
  - Using Sequential Programming
  - Using State Programming
  - State Machines
- ❖ **Using Variables**
  - Parallelism
  - Variables
  - Functional Global Variables
  - Race Conditions

# **Gian Jyoti** Group of Institutions

## **Who can Attend....**

Faculty from all Engineering Institutes is invited.

## **Resource Persons:**

Eminent personalities from the Industry and Academic world will share their views about NI LabVIEW and knowledge with the audience.

## **Registration:**

There will be no registration fees. All the participants need to get registered by login at [www.gjiet.com](http://www.gjiet.com). No TA/DA will be paid in this regard.

## **Certificate:**

All the participants will receive a certificate of participation in Faculty Development Programme from Gian Jyoti Group of Institutions



# **Gian Jyoti** Group of Institutions

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Faculty Development Programme on “**LabVIEW and Its Applications in Engineering**” from 23<sup>rd</sup> Jan-27<sup>th</sup> Jan, 2012 at GJIET Sponsored by PTU

**REGISTRATION FORM**

Last date for Registration: 20<sup>th</sup> Jan, 2012

**CONTACT INFORMATION**

Full Name in capital letters: .....

Designation: ..... Department.....

Institute: .....

Address: .....

.....

Contact No: ..... Email address: .....

Experience:    Teaching: .....                      Research: .....                      Industrial: .....

Acquaintance with NI LabVIEW:

Unfamiliar       Beginner       Intermediate       Expert

Accommodation Required:       Yes                       No

I hereby, declare that the information mentioned is correct and I shall attend the one week FDP.

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Date:

Signature

I hereby, allow the above employee to attend the FDP from 23<sup>rd</sup> Jan-27<sup>th</sup> Jan, 2012.

Signature of Head of Institute with Seal: