WORKSHOP ON DATA ACQUISITION USING LabVIEW

Time	Topics
9:00-10:00	**INTRODUCTION to Graphical System Design (GSD)** • What is GSD? • Why working on GSD platform? • Benefits of GSD • Text based programming Vs. LABVIEW **Hardware Interfacing Techniques** **Introduce LABVIEW Environment** • Front Panel, • Block Diagram • Tool Bar, Menu Bar • Shortcut Keys • What is VI? Parts of VI: Function & Control Palette, Icon & Connector pane
10:00-11:00	**DATA TYPES:** • **NUMERIC:** • NUMERIC CONTROL & INDICATORS • Arrow on RIGHT/ LEFT for Control/ Indicator • Color For Numeric Data Types • COERION DOT • NUMERIC CONVERSTION FUNCTIONS • UNDEFINED & UNEXPECTED DATA (NaN, infinity) DEBUGGING TECHNIQUES
	BOOLEAN: i. Introduction to Digital Electronics ii. Color For Boolean Data Types iii. Boolean Operations (AND, OR, NOT, XOR, NAND, NOR) iv. Practical Examples- Car Door Open Indicator, Washing machine
11:00-11:15	Break

11:15-12:30	➢ **STRINGS:** i. Definition of String ii. Color for String Data Types **LOOPS:** - Introduction for LOOPS - Why LOOPS are essential in programming? iii. Two kinds of loops- FOR & WHILE **FOR LOOP:** - Flowchart/ pseudo code - LABVIEW FOR LOOP - Iteration & Count Terminal **WHILE LOOP:** - Flowchart/ pseudo code - LABVIEW WHILE LOOP - Iteration & Stop Terminal
12:30-1:30	Lunch
1:30-3:00	**OVERVIEW OF TRANSDUCERS, SIGNALS AND SIGNAL CONDITIONING** i. DAQ System Overview ii. Sensors and Transducers - Temperature - Light - Sound - Force and Pressure - Fluid Flow - pH **Exercise 1. Simple Generating and Acquiring data using DAQ assistant (N samples and Continuous Samples)**
3:00-3:15	**Break**
3:15-4:00	**Exercise 2. Acquiring Data on Analog sensor value and giving alert using buzzer** **Exercise 3. Traffic Light** **Exercise 4. Performing Digital Input and Digital Output with Switch**