

## **Module: Temperature Measurement and Programming in Labview February, 2011**

### **Course Description**

This module provides students with an overview of temperature Measurement and Programming in Labview. It includes theory of thermocouples, thermistors and IC temperature sensors. Computer interfacing with real world measurements with a personal computer, Labview software and USB data acquisition hardware will be discussed.

### **Prerequisites**

Completed Bachelors Degree

### **Learning Outcomes**

Upon successful completion of the Introduction to Temperature Measurement and Programming in Labview, students will have demonstrated the ability to:

1. Setup and understand the use of personal computers for real world measurement of temperature.
2. Have an understanding of the error and limitations of data acquisition
3. Demonstrate the ability to setup a program and be able to edit and customize for the project needs.
4. Consider the safety and precautions for trouble free operation of monitoring and control systems.

### **Delivery**

module will be comprised of 5 weeks of 2 hour lectures including hands on lab time. There is an additional time expectation of approximately 1 hour per week of independent lab time.

### **Assessment**

Assessment of this module will be in the form of weekly assignments and a single report to be submitted at the end of module. The single report will consist of a real world problem with defining the problem constraints, creating and documenting a electronic/thermocouple interface, writing a labview program, evaluating program performance and discussion of the system. A written report will be submitted and a brief oral presentation will be made.

50% Assignments/lab exercise, 50% final report/presentation