Course Title: Instrumentation and Microprocessor Laboratory Work
Course Code: EEEG 306
Credit Hours: 1

Course Description:
The course intends to reinforce the concepts learned in microprocessor and measurement & instrumentation lecture classes that have a strong practical applications emphasis, by a series of relevant experiments carried out in the laboratory.

Course Contents:

A series of experiments to reinforce the subject matter taught in 'EEEG314: Microprocessors' and 'EPEG317: Measurement and Instrumentation'.

The following experiments can be performed for Measurement and Instrumentation:

1. Calibration of voltmeter, ammeter, wattmeter, Energy meter
2. Measurement of power using Instrument transformers (CT and PT)
3. To understand Hall sensor and its use for motor speed control
4. To provide knowledge about feedback control systems and its components
5. To provide knowledge about Thermistor property and Schmitt trigger comparator in temperature control.
6. To observe the performance of a solar photovoltaic module
7. To provide knowledge about optical encoder and use of IR LED and photodiode as motion sensor
8. Study of important sensors that are available in a vehicle

The following experiments can be performed for Microprocessor:

8-bit Microprocessor (Intel 8085)

1. Use of data transfer, arithmetic and machine control instructions and related programs
2. Use of logical and branch instructions and related programs
3. Use of stack & subroutines and related programs
4. Program for code conversion,

16-bit Microprocessor (Intel 8086)

5. Familiarization with 8086 simulator
6. Use of branch instructions and related programs
7. Use of INT 21h and INT 10h and related programs

Evaluation:
In-Semester Evaluation: 80%
End-Semester Evaluation: 20%