

**Course Title: Microcontroller for Data Communication**

**Course Code: EEA 164**

**Course Background / Summary:**

Data communication is an important medium for Engineering and control application when systems are complex and requires data to be transferred from one subsystem to another system. Such example is a remote system. Communication can be done through parallel and serial data communications. A microcontroller is one of the main components of data communication whereby it uses its communication features to communicate. This course will expose participants on how to use PIC microcontroller for communication through serial communication such as USART, SPI etc. The communication is done through microcontroller to microcontroller or microcontroller through PC or vice versa.

**Course Objectives:**

- Construct controller from scratch for data communication application.
- Control UART and SPI to allow data transfer and receive.
- Write C code algorithm to control data communication application.

**Target Audience:**

- Electricians, Research assistants, Research officers, Researchers, Academicians
- Technicians, Hobbyist
- Engineers & Instructors

**Course Duration: 3 Days**

**Course Contents**

**1.0 Introduction to Data Communication Theory**

**2.0 Theory on PIC Microcontroller for Data Communication**

**3.0 Write C Code Control Algorithm for Data Transfer and Receive**

**4.0 Commissioning and Testing with Oscilloscope**