COURSE SYLLABUS

Name of the Group: *Embedded System Group*

Name of the Course: *Certificate Course on Embedded Product Design*

Course Code: *ED505*

Starting Date: *9th December 2019*

Course Description

- **Product Development Process**
    - System level design using hardware and software
    - Hardware and software integration issues and testing
    - Hardware and software co-verification
    - Component cost and costing in product design

- **Programming Aids**
    - Flowchart Techniques
    - Flowchart Symbols Meaning
    - How to Draw a Flowchart
    - Flowchart Best Practices
    - Common Mistakes Made when Drawing Flowcharts

- **Embedded Protocols and Interfacing**
    - Overview of Embedded Protocols,
    - I2C protocols, SPI, CAN Processor Bus, USB
    - GSM, GPS, RFID, RF Module, zigBee and Bluetooth Modules Interfacing with Microcontrollers

- **Microcontroller Based Design**
    - ORCAD Schematic and PCB Layout
    - Embedded Hardware Design with Microcontroller

Learning Outcomes

After successful completion of the module, the students shall be able

- Apply product development process for realization of the product
- Design and develop a standalone Embedded System using Microcontrollers through conceptual design, PCB Desig, Testing, Integration etc.

Reading List

1. Product Design & Development - Karl T Ulrich & Steven D. Eppinger; Mc GrawHill
2. Relevant Data sheets and application notes