



Associations @ M.I.E.T Group of Institutions



CHIEF PATRON

Shri Vishnu Saran
Chairman
M.I.E.T. Group of Institutions

PATRON

Shri Puneet Agarwal
Vice Chairman
M.I.E.T. Group of Institutions

MOTIVATOR & GUIDE

Prof. Vinay Kumar Pathak
Vice Chancellor
A.K.T.U., Lucknow

PROGRAM CHAIRS

Lt. Gen. J. M. Garga
Director General
M.I.E.T. Group of Institutions

Dr. Mayank Garg
Executive Director
M.I.E.T., Meerut

COURSE COORDINATOR

Dr. D. K. Sharma
Prof. & Head, Department of ECE
Meerut Institute of Engineering and Technology, Meerut
Mob.: 9412551886
Email id: devendra.sharma@miet.ac.in

CO-COORDINATORS

Mr. Priyank Sharma
Asst. Prof., ECE
priyank.sharma@miet.ac.in
9837087423

Mr. Vishal Verma
Asst. Prof., ECE
vishal.verma@miet.ac.in
9897112966

Ms. Mohini Preetam Singh
Asst. Prof., ECE
mohini.singh@miet.ac.in
9627999590

3-Days Faculty Development Program on “Microcontroller Design”



under

Texas Instruments Center of Excellence
MIET Meerut Campus

A Lab Sponsored by
Dr. A.P.J. Abdul Kalam Technical University,
Lucknow

7 - 9 December, 2017

Organized by



Department of Electronics and Communication
Engineering

Meerut Institute of Engineering & Technology
NH-58, Baghat crossing, Delhi- Roorkee bypass,
Meerut, Uttar Pradesh, Pin code-250005
Tel: 0121-2439019, 2439057,
Fax: 0121-2439058
Website: www.miet.ac.in

OBJECTIVE OF THE WORKSHOP

- Inculcate and learn application/project oriented teaching methodology in current academic framework.
- Understand systems approach for building applications around TI Technologies.
- Empower faculties with necessary knowledge, skills, and expose them to TI technologies and thereby bridging the gap between industry and academia.

WORKSHOP SCHEDULE

DAY 1

Embedded Systems and role of TI platforms, Introduction to MSP430 series platforms: scope, application and tools in Embedded ecosystem.

Programming MSP430 using CCS, MSP430's Internal Architecture and Programmer's model, Enabling Low power modes and understanding Interrupt based programming techniques.

Various Configuration registers of in-built modules and their programming (GPIO, PWM, ADC)

1. Clock tree structure and its role.
2. Watchdog Timer Concept and Application.
3. GPIO Configuration.

DAY 2

Interfacing LCD display to MSP430, Timing based measurements using MSP430 timers, Pulse Width Modulation Concepts using Timers:

- Led brightness control using PWM technique.
- Servo motor interfacing.

ADC Programming:

- Interfacing analog sensors.
- Serial Communication Interface: UART.
- Loop Back Testing of UART.

- Bluetooth interfacing with MSP430.

DAY 3

Serial Communication Interface: SPI

- Master Slave communication with MSP430 launch pads.
- SD Card Interfacing with MSP430.

Introduction to TI's Sensor Hub Booster Pack

Serial Communication Interface: I2C

- MPU9150 interfacing with MSP430 using BOOSTXL-SENSHUB.

Embedded Wi-Fi and Internet of things. Implementing Embedded Wi-Fi using CC3100 booster pack. Email Application Case Study: Sending email from MSP430F5529 using CC3100 Booster Pack.

Real-time data gathering (humidity, temperature, pressure etc.) and remote monitoring, for Wireless Sensor Network applications and related use cases using Energia.

LEARNING OUTCOMES

At the end of the workshop participant will be able to learn/understand

- Embedded C programming techniques for 16-bit platform
- Embedded protocols and its interfacing techniques
- Embedded Wireless networking concepts and its implementation with application oriented projects and case studies.

RESOURCE PERSONS

Speakers / Trainers will be from Texas Instruments.

NUMBER OF PARTICIPANTS

35 (Thirty Five only)

ELIGIBILITY OF PARTICIPANTS

Faculty from AICTE approved colleges / institutes are eligible to participate in this course.

PREREQUISITE

Must have exposure to:

- Building embedded applications for 8-bit platforms
- Basic knowledge of C language programming
- Digital Electronics fundamentals.

DEADLINE FOR REGISTRATION

22 November, 2017

REGISTRATION AND ACCOMODATION

- There is **no registration fee** for faculty /teachers of AICTE approved colleges/institutes.
- No TA/DA will be provided.
- Arrangements are made in advance for accommodation in the institute hostel on sharing basis with nominal charges.
- **Please mail the scanned copy of enclosed Nomination form duly filled to both devendra.sharma@miet.ac.in and jjyoti@sapiencelearning.com on or before last date. Hardcopy can be submitting on the spot at program venue.**
- Registration will commence at 8:30 am on 7th December, 2017.
- Venue: Azim Prem Ji block (M Block), Room No. 602, Seminar Hall.

CERTIFICATE

Participation Certificate shall be awarded by Texas Instruments to those who attend the course for all 3 days.