



**JSS MAHAVIDYAPEETHA
JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA**

FACULTY DEVELOPMENT PROGRAMME
On
ANALOG /EMBEDDED TECHNOLOGIES



5th September – 10th September, 2016

LAST DATE FOR REGISTRATION : 31st August 2016

Organized by:
DEPARTMENT OF ELECTRONICS ENGINEERING
JSS ACADEMY OF TECHNICAL EDUCATION
C-20/1, SECTOR-62,
NOIDA-201301
Ph: +91-0120-2400115, www.jssaten.ac.in

Affiliated to
DR. A.P.J. ABDUL KALAM TECHNICAL UNIVERSITY
LUCKNOW



ORGANIZING COMMITTEE

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Programme Chair:

Prof. K. Kamal, Principal, JSSATE, Noida.

Programme Coordinator:

Prof. Sampath Kumar V., Head of Department, Department of Electronics Engineering,
JSSATE, Noida.

Deputy Coordinator:

Ms. Rashika Anurag

Organizing Committee:

Mr. Chandra Shankar

Ms. Anju Agarwal

Ms. Suvarna NA

Mr. Sumit Kumar Khandelwal

Ms. Jyoti Baswal, Assistant Manager, SAPIENCE Consulting

RESOURCE PERSONS

Speakers /Trainers from TEXAS INSTRUMENTS, INDIA

PARTICIPANTS

Faculty Development Programme is open to faculty members of AKTU affiliated engineering colleges.

REGISTRATION FEE

Send Demand Draft of Rs. 1000 in favour of “JSS Academy of Technical Education”, payable at Noida.

ABOUT THE COLLEGE

JSS Academy of Technical Education Noida (JSSATEN) is one of the leading Technical Institutions in the National Capital Region in the State of Uttar Pradesh. Established in the year 1998 by JSS Mahavidyapeetha, Noida, the Institution has set benchmarks every year, and grown into an Institution of Excellence in Technical Education. JSSATEN is proud to mention that it has created necessary manpower and infrastructure to implement Outcome

Based Education from the year 2014-15. Today, JSSATEN has total student strength of over 4000, who are mentored by more than 250 Faculty Members. Website: <http://jssaten.ac.in>.

ABOUT THE DEPARTMENT

Commissioned in the year 1998, to offer graduate level programme in 'Electronics and Communication Engineering', the Department has seen remarkable growth in terms of quality of student intake, inclusion of post-graduate programme 'Advance Electronics and Communication with specialisation in VLSI Design' from 2008, applauding achievements of the students during and after graduation, faculty specialization and upgradation in several domain areas and infrastructure to provide the latest technical lab facilities e.g. Texas Instruments Centre of excellence, e-Yantra Laboratory Setup Initiative (eLSI) –IIT Bombay and Cadence Center of Excellence in microelectronics by Entuple Technologies, Bangalore are unique facilities for research and project work. B.Tech programme of Electronics and Communication Engineering accredited (**Outcome Based Education**) for two years by NBA from 1st July 2015. Department has been identified as a research centre in the field of electronics engineering for the Dr. Abdul Kalam technical university. <http://jssaten.ac.in/Academics/ECE/>

AIM AND SCOPE OF THE FDP

- To develop faculty mentors who will work with academic community in educating them and help in creating a team of experts around TI technology.
- 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.

ABOUT THE WORKSHOP

Analog Module: This module will help participants learn real world concepts and complement it with a unique hands-on experience in Analog domain. Analog applications like Video signal processing, Portable battery-powered instruments, DSL/Cable modems, Distributed power systems, Industrial control, Telecom and other analog applications require general-purpose operational amplifiers, wide-bandwidth precision analog multipliers, parallel-input multiplying digital-to-analog converters, wide-input non-synchronous buck-type DC/DC controller, and a low dropout regulator. ASLK Pro kit is designed to support all the features to realize above applications and projects. During this workshop participants will be exposed to complete application-building concept using ASLK Pro. The workshop will be designed to give hands-on experience so that every participant will get expertise in using ASLK Pro.

Embedded Module: Embedded applications like automation and control, consumer electronics, test and measurement equipment's, HVAC and building control, remote monitoring and other embedded applications require Low power CPU's with more GPIO's, in-build ADC and dedicated Embedded protocols. MCU workshop is based upon Low power 16-bit MSP430 series platforms. Participants will be exposed to

complete application-building concept using 16-bit MSP430 series MCUs. The workshop will be designed to give hands-on experience so that every participant will get expertise in using MSP430 platform. From Standalone applications to Embedded Networking applications (Embedded Wi-Fi) will be covered with exposure to real world interfacing techniques.

PROGRAMME

This six day workshop consists of two modules:

- Linear Integrated Circuits- a system approach (3 days)
- Embedded System design using MSP430 (3 days)

Day 1: 5 September 2016, MONDAY

Introduction to Analog Curriculum: framework, concept map and role of faculty mentors	60 min
Typical Signal chain in an Electronic System	30 min
Introduction to ASLK pro and its various building blocks	60 min
Basic op-AMP concepts: Differential voltage, CMRR, Regenerative oscillator	60 min
Implementing Inverting and non-inverting amplifier using ASLK pro	60 min
Voltage Follower configuration, Negative feedback amplifier	90 min

Day 2: : 6 September 2016, TUESDAY

Implementation of Integrator, Differentiator and comparator circuits	60 min
Applications of Comparator (LED, buzzer and potential driver circuit)	60 min
Load cell sensor application demonstration using Instrumentation amplifier	60 min
Theory of function generator Introduction to MULTISIM & simulation of Function Generator Circuit & Various filters (Low pass, high pass, band pass and band stop)	90 min
Implementation of Function Generator	90 min

Day 3 : 7 September 2016, WEDNESDAY

Introduction to Filters: Sallen Key vs UAF topology, Hardware Implementation of second-order universal filter design	60 min
Applications of multipliers in Communication domain – AM, ASK, implementation using simulation tool	60 min
Simulation of VCO using function generator FSK implementation using simulation tool	90 min
Mini-project discussions	60 min
Feedback and Valedictory	90 min

Day 4: 8 September 2016, THURSDAY

Introduction to Embedded Curriculum: framework, concept map and role of faculty mentors	30 min
Embedded Systems and role of TI platforms	30 min
Introduction to MSP430 series platforms: scope, application and tools in Embedded ecosystem	30 min
Programming MSP430 using CCS	30 min
MSP430's Internal Architecture and Programmer's model	60 min
Various Configuration registers of in-build modules and their programming (GPIO, PWM, ADC)	180 min
1. Clock tree structure and its role 2. Interfacing Analog sensors	

Day 5: 9 September 2016, FRIDAY

Enabling Low power modes and understanding Interrupt based programming techniques.	60 min
Using ULP advisor in MSP430	30 min
Various Serial Communication Interfaces : UART / I2C / SPI	120 min
UART programming and data logging applications	30 min
Programming SPI Interface	60 min
Programming I2C Interface	60 min

Day 6: 10 September 2016, SATURDAY

Embedded Wi-Fi and Internet of things	60 min
Implementing Embedded Wi-Fi using CC3100 booster pack	120 min
Introduction to Digital Sensor Hub Booster Pack (BOOSTSENSHUB)	30 min
Real-time data gathering (humidity, temperature, pressure etc.) and remote monitoring, for Wireless Sensor Network applications and related use cases	90 min
Project case studies based upon MSP430 MCU platform	60 min

REGISTRATION FOR THE FDP:

- Participant can register themselves in any one Module (Linear Integrated Circuits- a system approach/ Embedded System design using MSP430).
- Fill the registration form along with DD details, and send the scanned copy of registration form and Demand draft at texasjssfdp@gmail.com on or before 31/08/2016

NOTE:

- Certificate will be issued by Texas instruments only to those participants who attend the complete session of respective module.

CONTACT PERSONS:

- Ms. Rashika Anurag : 9871644060
- Mr. Chandra Shankar : 8800959255



JSS MAHAVIDYAPEETHA
JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA

FACULTY DEVELOPMENT PROGRAMME

On

Linear Integrated Circuits – a system approach

Under

Sapience TI – University Program

(5th – 7th September 2016)

REGISTRATION FORM

Name:

Designation:

Institution:

Qualification:

Area of Specialization:

E-mail:

Telephone / Mobile No.:

Payment Details:

Draft No.....Issuing Bank.....

Amount.....in favour of.....Dated.....

Declaration

The information furnished above is true to the best of my knowledge.

Applicant's Signature

(Please send filled registration form along with Demand Draft of Rs. 1000/- in favour of “JSS Academy of Technical Education,” payable at Noida, latest by 31st August 2016. Email the scanned copy of registration form with Demand Draft)

Address for Correspondence:

Mrs. Rashika Anurag (Deputy Coordinator)

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Mobile: 9871644060 / 8800959255

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**JSS MAHAVIDYAPEETHA
JSS ACADEMY OF TECHNICAL EDUCATION, NOIDA**

FACULTY DEVELOPMENT PROGRAMME

On

Embedded System Design using MSP 430

Under

Sapience TI – University Program

(8th – 10th September 2016)

REGISTRATION FORM

Name:

Designation:

Institution:

Qualification:

Area of Specialization:

E-mail:

Telephone / Mobile No.:

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