

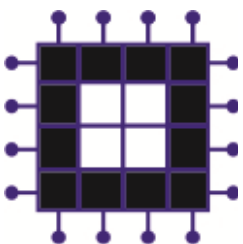
**6 Weeks Training
In
Embedded System
&
Robotics**

(With Live Project)

(A Corporate Partner of IIT Delhi)

***An Initiative by Industry Experts
from Cadence, Atrenta & Patni
with qualification from
IITs and BITS-Pilani***

***Training Partners of Cadence Design
Systems and Mentor Graphics
(Worldwide EDA Giants)***



DKOP Labs Pvt. Ltd.

Knowledge, Operations and Practices

C-53, Lower Ground Floor, Sector – 2, Noida – 201301

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Email: info@dkoplabs.com; Web: <http://www.dkoplabs.com>

MODULE TOPICS

MODULE 1: EMBEDDED SYSTEM OVERVIEW

1. Introduction
2. History of Embedded System
3. Embedded System Design Parameters(GAS)
4. Challenges and Trends in Embedded System
5. Operating System for Embedded System

MODULE 2: OPERATING SYSTEM - LINUX

1. Introduction to LINUX
2. Managing Files & Directories
3. Basic SHELL structure
4. Files System, Process Management System
5. Memory management system
6. OS Services and Kernel Architecture
7. Programming & Debugging using LINUX

MODULE 3: BASIC ELECTRONICS

1. Practical applications of Basic Components
 - Resistance
 - Capacitor
 - Inductor
 - Transistor
 - Power supply
 - Regulator
2. Basic memory structure
3. Hardware Languages (Voltages and Number System)
4. Multi Meter

MODULE 4: DIGITAL ELECTRONICS

1. Design Concepts
2. Introduction to Logic
3. Optimized Implementation of Logic Functions
4. Number Representation and Arithmetic Circuits
5. Combinational-Circuits Building Blocks
6. Flip-Flops, Registers, Counters, and Simple Processor

MODULE 5: MICROCONTROLLER & MICROPROCESSOR

1. **Introduction: Microcontrollers and Microprocessors**
2. **Microcontroller w.r.t Computer (Arch of Comp)**
3. **RISC & CISC**
4. **Microcontroller Architecture**
5. **Memory Organization (in comparison with CPU)**
6. **Addressing modes w.r.t Instruction set**
7. **Programming in Assembly and C**
8. **Hands on Keil uvision Compiler and Flash Magic**
9. **Special Function Registers**
10. **Addressing Modes**
11. **Instruction Set**
12. **Timers and Counters**
13. **Interrupt Handling**
14. **Serial Communication**
15. **Serial Communication with diff Baud Rates Tx and Rx**

MODULE 6: INTERFACINGS AND IMPLEMENTATIONS

1. **LED, Keypad, 7-Segment, LCD interfacing**
2. **Various types of Sensors**
3. **DC geared motors**
4. **Stepper motor**
5. **Motor Driver (H-Bridge)**
6. **Basic Op-amp Circuits (Comparators)**
7. **Designing line detecting sensors**
8. **ADC/DAC**
9. **PWM Rx and Tx**

MODULE 7: INTRODUCTION TO ROBOTICS AND BASICS OF ROBOT CONSTRUCTION

1. **Anatomy of a Robot**
2. **Overview of controller-less Robots**
3. **Robot construction material**
4. **Actuators and Control Drivers**

In this session, participants will be introduced to the world of robotics; different robot construction materials and construction techniques will be investigated and compared

MODULE 8: INTRODUCTION TO PCB DESIGNING

1. **Circuit Simulation**
2. **Schematic Designing**
3. **Net Listing**
4. **Auto routing**
5. **Multi-layer PCB Designing**
6. **Layout Designing**

1. Project Study
2. Document submission & Evaluation of Project

PROGRAM DETAILS

Batches Commence on	:	1 st May, 2012
Total Seats	:	30 Students/Batch
Duration	:	6 Weeks 3 Days/Week 3 Hours/Day
Fees	:	Rs 7500/- (Inclusive of Service Tax)

BENEFITS FOR THE STUDENTS

- Helps you in understanding the practical and industrial applications of academic curriculum
- Build your knowledge to develop innovative projects during their final year of engineering
- Enhances the Skill-Set in your resume for better placement prospects within the semiconductor industry
- Helping build knowledge and expertise for the aspirants of higher studies abroad to face the stiff competition from students of other countries
- Build your confidence through hands on exposure to various tools & technologies

DKOP TEAM

- **Manu Lauria:**

- **Qualification:** *M.Tech. in Computer Science & Engineering* from **IIT Delhi** (1989-90) and *B.Tech. in Electrical Engineering* from **IIT Delhi** (1980-1985)
- **Experience:** More than **22 years** in the Industry with 18 years in the Semiconductor industry at Cadence Design Systems and 4 years at ONGC. Rich experience in EDA software tools development - responsible for many products from concept to reality. Was part of the core leadership team of Cadence's Noida Center for 13 years. Has managed or been part of teams that developed products in the areas of **Synthesis, Simulation, Custom IC Design, Rule checking, Model Development & Web based component/design** management.

- **Sandeep Gupta:**

- **Qualification:** *M.Tech. in Computer Applications* from **IIT Delhi** and *M.Sc. Mathematics* from **IIT Delhi**
- **Experience:** More than **Eighteen years** in Semiconductor industry with Thirteen years in Cadence Design Systems. Have worked in the R&D of **HDL Simulation** tools and **Virtuoso platform**. Highly experienced in developing Software for Engineering Applications in addition to EDA tools. Proficient in C,C++, Perl, TCL-Tk languages as well as HDLs like VHDL, Verilog & SystemVerilog.

- **Devender Khari:**

- **Qualification:** *M.E. Computer Science* from **BITS, Pilani** and *B.Tech in Computer Engineering* from **Shivaji University**.
- **Experience:** More than **11 years** of experience in software and EDA industry with 8 years in Cadence Design Systems. Have worked in the R&D of **OrCAD suite** of tools, **Allegro Design Editor** and **Virtuoso Composer**. Expert in developing Software for Engineering applications as well as Web Technology and Mobile based applications. Proficient in C, C++, PHP, .NET and JAVA Languages.

- **Chandrakant Sakharwade:**

- **Qualification:** *M.Tech. in Advanced Electronics* from **IIT Chennai** (1978) and *B.Tech. in Electronics & Communication Engineering* from **Visvesvaraya Regional College of Engineering** (1976)
- **Experience:** More than **31 years** of professional experience. Have worked as Engineering Manager with increasingly responsible positions in Engineering Design, Project Management and Engineering Management in **Telecom, Embedded Systems, Electronic Component Databases (Content), and Electronic Design Automation (EDA)**

and Product Engineering Services domains. Applied engineering principles for successful development of multiple products and content. Have worked at **Patni Computer Systems, Cadence Design Systems, Aspect Development, C-DOT & Tata Institute of Fundamental Research.**

- **Ajay Sharma:**

- **Qualification:** *M.Sc.* In Electronic Science from *Electronic Science Department, Kurukshetra University*(2003)
- **Experience:** 6+ years of Research Experience in the field of **ASIC Design**. Spent 3 years in research on *Smart Sensor ASICs* at *SRL, University of Warwick, UK*. Contributed in the whole flow from Circuit Design to Tapeout. Handled MIT (Ministry of Information Technology) initiative project, SMDP-II, at *NIT, Jalandhar* for year and a half. Played an instrumental role in taking designs from Circuit to Layout. Guided Masters and Bachelors Projects.

- **Ravi Bhardwaj:**

- **Qualification:** *B.Tech.* In ECE from *LPU*
- **Experience:** Started his career at DKOP Labs as Assistant Design Engineer. Handling multiple projects in VLSI Design and FPGA.

- **Abhishek Goel:**

- **Qualification:** *B.Tech* In Electronics and Communication Engineering from *MMU*
- **Experience:** 2+ years of experience in Embedded System and Robotics. Handling multiple projects in Embedded and Robotics

- **Jatin Garg:**

- **Qualification:** *B.Tech* In Electronics and Communication Engineering from *MMU*
- **Experience:** Started his career at DKOP Labs as an Embedded Engineer. Handling multiple projects in Embedded and Robotics

- **Vinit Saddyan:**

- **Qualification:** *B.Tech* In Electronics and Communication Engineering from *MMU*
- **Experience:** Started his career at DKOP Labs as an Embedded Engineer. Handling multiple projects in Embedded and Robotics

PARTNERSHIPS

IIT DELHI CORPORATE PARTNER

DKOP is selected as Corporate Partner of IIT Delhi for R&D, Innovation & Training

CADENCE DESIGN SYSTEMS

DKOP is Certified Training Partner of Cadence for whole of North India

MENTOR GRAPHICS CORPORATION

DKOP is Vanguard Partner and HEP (Higher Education Program) Partner of Mentor Graphics Corporation.

AGNISYS

DKOP is Spark Higher Education Program partner of Agnisys. DKOP students are given live projects from Agnisys to work and deliver in tight deadlines.

DKOP PLACEMENTS

Companies where we have placed our students

ST MICROELECTRONICS, GREATER NOIDA

Kavita Sharma, Banasthali Vidyapeeth

CADENCE DESIGN SYSTEMS, NOIDA

Sorabh Dung, LIT, Lovely Professional University

Ruchi Mittal, CDAC

Rachna Raj, Banasthali University

Saloni Goel, Banasthali University

Sachin Kumar, LIT, Lovely Professional University

Jupinder Kaur, LIT, Lovely Professional University

Manvi Goel, Banasthali University

Balveer Singh Koranga, GB Pant Engineering College, Pauri, Uttarakhand

MENTOR GRAPHICS, NOIDA

Vikas Tomar, ITM, Gurgaon

Jitendra Aggarwal, Amity University, Noida

AGNISYS, NOIDA

Sandeep Thakur, Lovely Professional University

Amit Kapoor, SSIET, Dera Bassi

Nitin Ahuja, BSAITM, Faridabad

NSYS, DELHI

Nidhi Gupta, M.P.C.T., Gwalior

Prishkrit Abrol, DAVIET, Jalandhar

Pankaj Talwar, LCET, Ludhiana

Richa, Banasthali University

Mamta Rana, Jiwaji University

CIRCUITSUTRA TECHNOLOGIES, NOIDA

Parvinder Pal Singh, Lovely Professional University

DKOP LABS, NOIDA

Rahul Kumar, Rai University

Pushpinder Singh, SVIET – Banud

Amitav Banerjee, UPTU

RF SILICON, NOIDA

Nirmal Singh, UPTU

HP, BANGALORE

Hariom Pandey, UPTU

SASKEN, BANGALORE

Sumit Gupta, Thapar - Patiala

Sumit Kumar, Thapar - Patiala

PHOENIX, NOIDA

Akhilesh Singh, Jiwaji University

RELIANCE, PUNE

Ajay Gupta, Jiwaji University

OM NANOTECHNOLOGY, GREATER NOIDA

Mohammed Sharique, Jiwaji University

UNIVERSITIES IN USA, CANADA & GERMANY

Smriti Gurung

Subeg Singh

Binipal Wadhwa

Hasan Karkara

Note: Our competitors also hire our graduates!

RECOMMENDATIONS

1. Mr Jitin Sahni
Manager, HR & Recruitment
Freescale Semiconductors, Noida
2. Mr. Harish Pandey
Marketing Head
AMD, Bangalore
3. Mr. Upender Bhati
Marketing Head
AEM India Pvt. Ltd., Noida
4. Mr Anupam Bakshi
CEO, AgniSys
Noida
5. Mr Umesh Sisodia
CEO, CircuitSutra Technologies Pvt Ltd
Noida
6. Mr Sanjay Chakravarty
VP, ITAAS Inc
Noida
7. Dr. S.N. Saran
Director
GNIT, Greater Noida

DKOP TOUCHED FOLLOWING COLLEGES

We have conducted on-campus programs (Workshops/Trainings/Conferences) at following colleges:

1. LOVELY PROFESSIONAL UNIVERSITY, PHAGWARA
2. GREATER NOIDA INSTITUTE OF TECHNOLOGY, GREATER NOIDA
3. NIT, JALANDHAR
4. VISHWESHVARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, DADRI
5. LIET (LAXMI DEVI INSTITUTE OF ENGINEERING & TECHNOLOGY), ALWAR
6. SHEKHAWATI ENGINEERING COLLEGE
7. ST. MARGARET ENGG. COLLEGE, NEEMRANA
8. ITM, BHILWARA
9. YMCA, FARIDABAD
10. BANASTHALI VIDYAPITH
11. CHITKARA INSTITUTE OF ENGG & TECH, RAJPURA
12. DAV INSTITUTE OF ENGG & TECH, JALANDHAR
13. KUMAON ENGINEERING COLLEGE, DWARAHAT
14. GB PANT ENGG COLLEGE, PAURI
15. INSTITUTE OF TECHNOLOGY, PANTNAGAR
16. SACHDEVA COLLEGE OF ENGG, MATHURA
17. COLLEGE OF ENGG, ROORKEE
18. JSS, NOIDA
19. JIIT, NOIDA
20. BS ANANGPURIA, FARIDABAD
21. GRAPHICS ERA UNIVERSITY, DEHRADUN
22. MITRC, ALWAR
23. SIDDHI VINAYAK, ALWAR
24. NC COLLEGE OF ENGG, PANIPAT
25. BITS, BHIWANI
26. SRI SUKHMANI INSTITUTE, DERABASSI
27. SVIET, BANUD
28. LUDHIANA COLLEGE OF ENGG & TECH
29. DESHBHAGAT ENGG COLLEGE
30. SSIET, PATTI
31. RAI UNIVERSITY, FARIDABAD
32. COLLEGE OF ENGG & TECH, KAPURTHALA
33. RIET, JAIPUR
34. ITS, GREATER NOIDA