

EMBEDDED SYSTEMS

TRAINING & PLACEMENTS

**Learn Latest Technologies
(ARM, Embedded Linux & Android)**



Products & Services:

- Embedded Trainings
(University & Corporate)
- Placement & Consultancy Services
- Linux & Android Software Development
- Embedded Product Development
- Industrial Control & Automation
Solutions & Services

Embedded Career Path



Product
Development

Application
Programming

Middleware
&
Stack

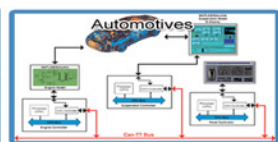
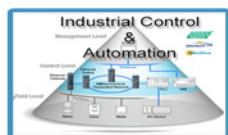
Embedded OS

Micro Controller
Programming

C Programming

Basic
Electronics

Embedded Verticals



Embedded Technologies

ARM Cores

Embedded

- Cortex-M7
- Cortex-M4
- Cortex-M3
- Cortex-M0+
- Cortex-M0

Real Time

- Cortex-R7
- Cortex-R5
- Cortex-R4

Classic

- ARM11
- ARM9
- ARM7

Cortex

- Cortex-A15
- Cortex-A9
- Cortex-A8
- Cortex-A7
- Cortex-A5

Embedded Linux System Architecture

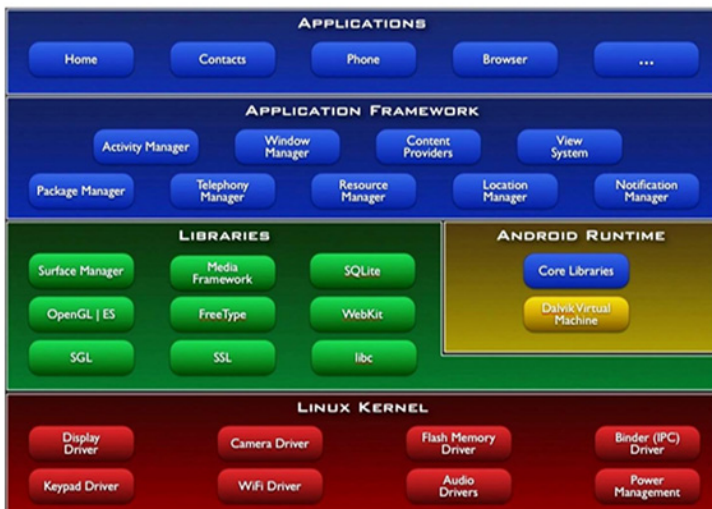
RootFS
(Libraries, Tools, Applications & Data)

BootLoader

Kernel

Hardware

Android Architecture



Advanced Embedded C & ARM Programming

Advanced Embedded C Programming

Training Outline:

- Basic C Brush-Up (Datatypes, Function, Arrays, Pointers, Storage Classes, File Handling, Dynamic Memory Mgmt)
- Type casting
- Typedefs
- Enums
- Type Qualifiers
- Bit Fields
- Function Pointers
- Header Files
- Command Line Arguments
- Variable Arguments
- Error Handling
- Other C Libraries

Hardware Programming:

- Accessing Parallel Port
- Accessing Serial Port
- Accessing USB Port, Accessing Network Port (Ethernet / Wireless)
- Accessing Bluetooth, Accessing VGA Port
- Accessing Keyboard, Accessing Mouse

Interfacing Hardware Modules:

- GSM, GPS, Bluetooth, ZigBee, WiFi
- Smart Card Reader, RF-ID Reader, Magnetic Card Reader (ATM Cards)
- Finger Print Reader, Sensor Module (Temp / Humidity / Accelero / Gyro)
- BarCode Reader, Printer, Camera

ARM Programming & Device Interfacing

Training Outline:

- Basics of ARM Arch
- ARM Cores & ARCH versions
- SOC's by Semiconductor companies

Programming on ARM7 / Cortex-M0 / Cortex-M3:

- GPIO Programming
- UART Programming
- Interrupt Programming
- Timer & Counters Programming
- RTC Programming
- ADC Programming
- PWM Programming
- I2C Protocol & Driver implementation
- SPI Protocol & Driver implementation

Devices Interfacing:

- GSM, GPS
- Bluetooth, Zigbee, Wifi
- RFID, Smart Card
- Finger Print Sensor
- Barcode Reader
- SDCard
- Printer
- Keypad, LCD, ADC, DAC
- Sensor Interfacing (Temp, Humidity, Accelero, Gyro)

Minimum of three projects on Microcontroller

Embedded Linux & Android Programming

Embedded Linux, Linux Porting & Device Driver Programming

Training Outline:

- Linux Installation & Partition Creation
- Linux Basic Commands
- Shell Scripting
- Makefiles
- Library Creation
- Boot Process
- Linux File System
- Process Management
- Memory Management
- Multi Thread Programming
- Inter Process Communication
- Linux Socket Programming
- Debugging Techniques using GDB & other tools

Linux Porting & Device Driver Programming

- Embedded Linux based hardware knowledge
- ARM Toolchain basics & Creating Toolchain
- Bootloader Basics (U-Boot, BareBox)
- Modifying Bootloader
- Porting Bootloader on ARM hardware

Linux Porting & Device Driver Programming

- Bootloader Commands
- Linux Kernel Directory Structure
- Linux Kernel Code Flow
- Linux Kernel Configuration System
- Linux Kernel Compilation
- Linux Kernel Porting on New ARM Hardware
- Writing Board file for new Board
- Pin Muxing for given ARM Board
- Drivers Configuration & Modifications
- Kernel Module Programming
- Char Driver Programming
- Interrupt Handling in Linux Kernel
- Bottom Half (Tasklets, Workqueues & SoftIRQ)
- Block Drivers Basics
- Network Drivers Basics
- BuildSystem usage and adding new packages and creating RootFile system
- Build System experience (BuildRoot, Yacto)

Minimum of three projects on Embedded Linux on ARM Hardware

Internet of Things(IoT)

Training Outline:

- Introduction to the Internet of Things

IoT Wireless Network Protocols

- Introduction to Wireless protocols
- Bluetooth Low Energy
- 6LoWPAN

IoT Node (phyWAVE-CC2650) Programming

- Introduction to phyWAVE-CC2650
- CC2650 SOC H/W & S/W architecture
- phyWAVE-CC2650 Programming for BLE
- phyWAVE-CC2650 Programming for 6LoWPAN (Contiki RTOS)
- Multiple-Sensors Interfacing (Temp, Humidity, Accelerometer..etc)

IoT Node (phyWAVE-CC2650) Programming

- phyGATE-AM335x H/W & S/W architecture
- phyGATE-AM335x Programming (Sensors & Cloud)
- Cloud communication protocols (MQTT, CoAPP)
- Android Client Application (phyMQTT)

AES Trained Employees from Top Multinational Companies

 Leading Innovation >>>					
					
					
					
					
					
					
					
					
					