

Embedded Systems Course Syllabus

- **Certified Embedded Engineer [15 Days]**
- **Embedded Systems Programmer [30 Days]**
- **Embedded Application Development Engineer [45 Days]**
- **Post Graduate Diploma In Embedded Systems [60 Days]**

Certified Embedded Engineer [15 Days]

Module 1: Embedded System Introduction

- Introduction about PLDs
- Introduction about Microprocessors
- Introduction about Signal processing and Data processing
- Introduction about Micro controllers
- Microcontroller classifications
- Introduction about 8051 Microcontroller
- Introduction about ARM Controllers

Module 2: Application Development

- Introduction about 805X and Interface
- Introduction to Advance RISC Machine

Module 3: Language and Tools

- Introduction to Embedded C programming
- Intro about KEIL IDE

Embedded Systems Programmer [30 Days]

Module 1: Embedded System Introduction

- Introduction to PLDs
- Introduction to Microprocessors
- Introduction to Signal processing and Data processing
- Introduction to Mixed signal Processing
- Introduction to Micro controllers
- Microcontroller classifications
- Introduction to 8051 Microcontroller
- Introduction to PIC Microcontrollers
- Introduction to MSP430 Microcontroller
- Introduction to ARM Controllers
- Introduction to System On Chip(SoC)

Module 2: Application Development on 8051

Applications using External Peripherals

- Interfacing of LEDs
- Interfacing seven segment display,
- Interfacing of LCD
- Matrix Key-pad scanning
- I2C device Interfacing.
- External RTC
- External EEPROM

Module 3: Application Development on ARM-7

Internal Peripheral Applications

- Introduction to Advance RISC Machine
- JTAG
- SPI
- UART
- I2C
- PWM
- Vectored Interrupts
- On-Chip ADC/DAC
- RTC

Module 4: Language and Tools

- Introduction to Embedded C programming
 - Data types, Qualifiers and Operators
 - Loop control and Functions
 - Array, Strings and Classes
 - Pointers and Structures
 - Arithmetic operations, and Type casting,
 - Call by Value, Call by Reference and Dynamic memory allocation.
- Intro to KEIL IDE
- Servo motor Drive Interface
- Stepper Motor Drive Interface
- Interfacing of LCD Interface
- Interfacing of LEDs Interface
- Matrix Key-pad Interface

Embedded Application Development Engineer [45 Days]

Module 1: Embedded System Introduction

- Introduction to PLDs
- Introduction to Microprocessors
- Introduction to Signal processing and Data processing
- Introduction to Mixed signal Processing
- Introduction to Micro controllers
- Microcontroller classifications
- Introduction to 8051 Microcontroller
- Introduction to PIC Microcontrollers
- Introduction to MSP430 Microcontroller
- Introduction to ARM Controllers
- Introduction to System On Chip(SoC)

Module 2: Application Development on 8051

Applications using Internal Peripherals

- Architecture
- Memory
- Addressing Modes
- Instruction set
- Timers/Counters
- Stop watch
- UART

Applications using External Peripherals

- Interfacing of LEDs
- Interfacing seven segment display
- Interfacing of LCD
- Matrix Key-pad scanning
- I2C device Interfacing.
- External RTC
- External EEPROM

Module 3: Application Development on ARM-7

Internal Peripheral Applications

- Introduction to Advance RISC Machine
- JTAG
- SPI
- UART
- I2C
- PWM
- Vectored Interrupts
- On-Chip ADC/DAC

- RTC

Module 4: Language and Tools

- Introduction to Embedded C programming
 - Data types, Qualifiers and Operators
 - Loop control and Functions
 - Array, Strings and Classes
 - Pointers and Structures
 - Arithmetic operations, and Type casting,
 - Call by Value, Call by Reference and Dynamic memory allocation
- Intro about KEIL IDE
- Servo motor Drive Interface
- Stepper Motor Drive Interface
- Interfacing of LCD Interface
- Interfacing of LEDs Interface
- Matrix Key-pad Interface

Module 5: Real Time Operating System

- Define Real Time Operating Systems (RTOS)
- Comparison between normal (traditional) OS and Real Time OS
- Why RTOS is required in Embedded systems

Post Graduate Diploma In Embedded Systems [60 Days]

Module 1: Embedded System Introduction

- Introduction to PLDs
- Introduction to Microprocessors
- Introduction to Signal processing and Data processing
- Introduction to Mixed signal Processing
- Introduction to Micro controllers
- Microcontroller classifications
- Introduction to 8051 Microcontroller

- Introduction to PIC Microcontrollers
- Introduction to MSP430 Microcontroller
- Introduction to ARM Controllers
- Introduction to System On Chip(SoC)

Module 2: Application Development on 8051

Applications using Internal Peripherals

- Architecture
- Memory
- Addressing Modes
- Instruction set
- Timers/Counters
- Stop watch
- UART

Applications using External Peripherals

- Interfacing of LEDs
- Interfacing seven segment display,
- Interfacing of LCD
- Matrix Key-pad scanning
- I2C device Interfacing.
- External RTC
- External EEPROM

Module 3: Application Development on ARM-7

Internal Peripheral Applications

- Introduction to Advance RISC Machine
- JTAG
- SPI
- UART
- I2C
- PWM
- Vectored Interrupts

- On-Chip ADC/DAC
- RTC

External Peripheral Applications

- Interfacing Relay
- Interfacing Buzzer
- Interfacing pushbuttons
- Power electronics drives control
- DC motor Drive
- Servo motor Drive
- Stepper Motor Drive
- Sensors

Module 4: Language and Tools

- Introduction to Embedded C programming
 - Data types, Qualifiers and Operators
 - Loop control and Functions
 - Array, Strings and Classes
 - Pointers and Structures
 - Arithmetic operations, and Type casting,
 - Call by Value, Call by Reference and Dynamic memory allocation
- Intro to KEIL IDE
- Servo motor Drive Interface
- Stepper Motor Drive Interface
- Interfacing of LCD Interface
- Interfacing of LEDs Interface
- Matrix Key-pad Interface

Module 5: Real Time Operating System

- Define Real Time Operating Systems (RTOS)
- Comparison between normal (traditional) OS and Real Time OS
- Why RTOS is required in Embedded systems
- How RTOS helps to increase the scalability



- Basic architecture
- Types and features
- Hard time systems
- Real time kernels
- Multitasking techniques
- Time and memory management
- Real time scheduling.

Greens Technology



Like and follow with us for more details