



e NEX

Embedded Training

DIPLOMA IN EMBEDDED SYSTEM

Confidential: eNex



eNex, a Pioneer Organization Engage in the field of embedded solution. As the name suggests, we at eNex constantly make an efforts to achieve the goals of provides next generation of Electronics to mankind by virtue of being innovative and creative.

Trained Engineer in the field of Electronics & Communication, Instrumentation & Control and Electrical & Electronics Engineering often lack practical exposure, real time logic management and troubleshooting which causes them to struggle in getting a reputed job or vertical growth. The problem faced by the such engineer is more aggravated due to escalating number of process industries under the circumstances, hence knowledge of embedded products not only improves the employment graph but also increase growth in the industries.

eNex provides Quality knowledge with practical industrial embedded training on latest platform and technologies with modern tools of teaching. Our training modules are industrial Oriented and help student to understand the industry to excel. We offer standard and custom made training courses for fresh & working Engineers. We also provide an opportunity to have hands on training on live Industrial projects.

Course	<ul style="list-style-type: none">• 15 Weeks
Eligibility	<ul style="list-style-type: none">• B.E. /B.Tech. M.E./M.Tech., Msc. In EE,E&C,CE,IT and IC.
Course Timing	<ul style="list-style-type: none">• Official Lectures Presentations and Labs will be conducted every day, six days Week.• Lab facilities Provided all Week for extra work and assignments completion.



Module Title	• What You Learn
Introduction To Embedded C	<ul style="list-style-type: none"> • Introduction to C Programming, Structure of C program, The Compilation Process of C Program • Data types & Operators – C base types Precedence & associability. Arithmetic and Logical Operation. • Control Flow – Logical operations and expressions. Decision making .Loop. • Pointer – Introduction • Bit Manipulations and Hardware Access - Access Hardware using Pointer and Bit operation using operator. • Functions – Function Declaration , Definition and Function call techniques .Parameter passing techniques
Advance Embedded C for Real Time System	<ul style="list-style-type: none"> • Use of Array and Pointer in real time Embedded system • Big Indian and Little Indian reorientation of data as per Controller require. • The C Pre Processor and Macro, Dynamic allocation of Controller Memory technique. • Data type Declaration and Definition. Variable type and its Scope.
Microcontroller (8051),(PIC),(AVR)	<ul style="list-style-type: none"> • Introduction to Microcontroller Family and its Architecture. • Detail Information of its peripherals and its operation. E.g. ADC, DAC, Timer, Serial. • Introduction of External peripherals and its interfacing with Controller. E.g. EPROM, RTC. • Brief introduction to necessary Hardware Circuit and its operation. E.g. Power Supply, Crystal Circuit, Power on Circuit. • Introduction of serial interface Protocol. E.g. SPI, I2C • Different Types of Programming and Debug technique. E.g. ISP, JTAG, Boot loader
ARM Microcontroller	<ul style="list-style-type: none"> • ARM 7 Processor Architecture • Introduction of different mode of ARM 7. • Introduction of LPC2148 ARM 7 base microcontroller and its Architecture. • Introduction of LPC2148 System peripherals • Programming and Debug technique. E.g. ISP, JTAG, Boot loader



PracticalSession	What You Learn
Introductory Session	<ul style="list-style-type: none"> • Embedded System Development Process • Text Editors/Compilers/Programmers/ Development tools/IDE • Debugger Information.
Practical Session I	<ul style="list-style-type: none"> • Oscillators and Power supply. • Two pin and Four pin Crystal Oscillators. • Clock Divider Circuit.
Practical Session II	<ul style="list-style-type: none"> • Enabling LED Connected to Port of all Microcontroller. • LED Flasher • Interfacing of Seven segment Display with all Microcontroller using Multiplexing technique. • LED Bilinking Using Timer Module of all Microcontroller. • Interfacing a 16 Characters X 2 Rows Backlit LCD. • Interfacing Graphic LCD.
Practical Session III	<ul style="list-style-type: none"> • Key Switch Connection to all Microcontroller.
Practical Session IV	<ul style="list-style-type: none"> • Audio Buzzer interface with all Microcontroller.
Practical Session V	<ul style="list-style-type: none"> • Controlling an Electromagnetic Relay.
Practical Session VI	<ul style="list-style-type: none"> • RS232 Serial Communication with PC and Microcontroller. • USB Communication with PC Using all Microcontroller.
Practical Session VII	<ul style="list-style-type: none"> • Hardware and Software I2C. • Inter-Integrated Circuit Bus (I2C Bus) Programming using EEPROM. • Inter-Integrated Circuit Bus (I2C Bus) Programming using RTC.
Practical Session VIII	<ul style="list-style-type: none"> • Analog to Digital Conversion using on-chip ADC with 12-bit resolution. • Digital to Analog Conversion using on-chip DAC with 12-bit resolution.
Practical Session IX	<ul style="list-style-type: none"> • Hardware and Software SPI. • Serial Peripheral Interface (SPI) using 12 Bit ADC MCP3202 to ATmega32.
Practical Session X	<ul style="list-style-type: none"> • PWM Generation using all Microcontroller. • Capture and Compare Programing.
Practical Session XI	<ul style="list-style-type: none"> • Interfacing With RF Module.
Practical Session XII	<ul style="list-style-type: none"> • Interfacing With GSM Module.
Course Material	<ul style="list-style-type: none"> • Soft copy of the Data sheets, Circuit Diagrams, Source Code & IDE are provided in CD-ROM.

Course Fees: -

