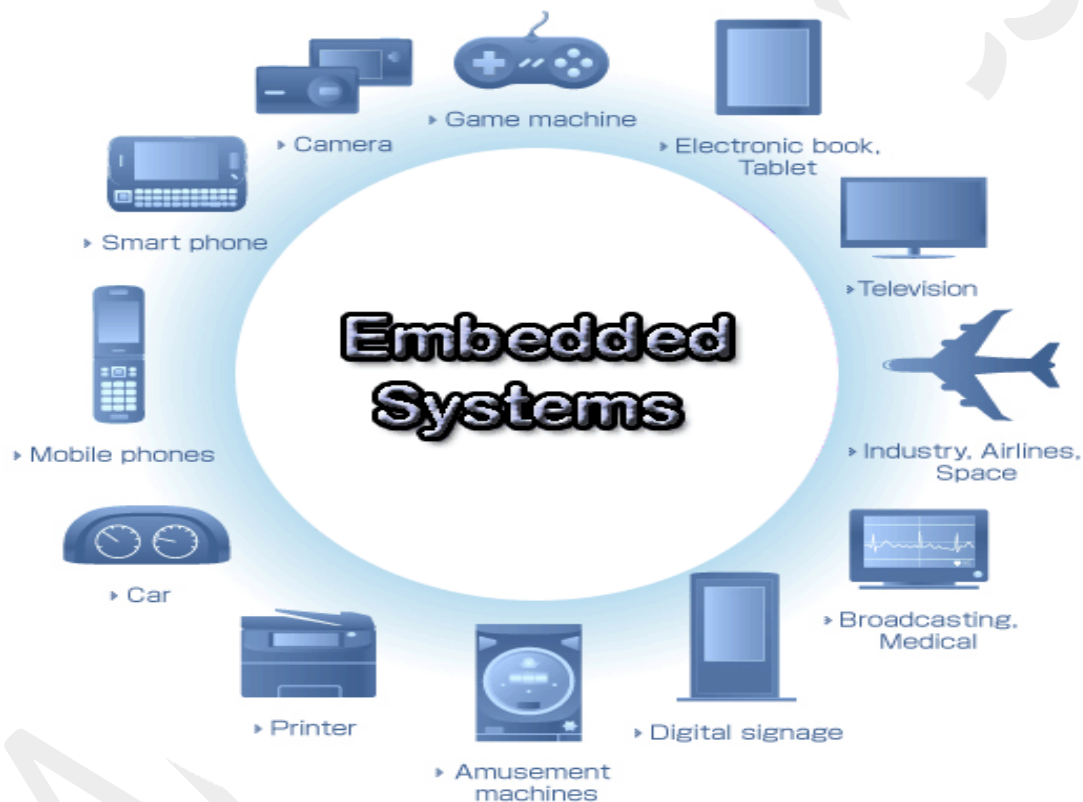


Embedded Systems:

Embedded Systems is simply the brain of most of the electronics based systems to access, process, and store and also control the data. Embedded systems is a multidisciplinary field, requiring skills from control and signal processing theory, electronics, computer engineering and science, telecommunication etc., as well as application domain knowledge. Demand for embedded systems engineers has motivated a growing interest in the question of educating specialists in this domain. As Embedded Systems designs grow more complex and the time to market diminishes, quality Embedded Systems education becomes more and more important.



Embedded Systems:

This is a 4 Days Training that introduces students to the world of embedded technology using the Avr studio/Win AVR platform and Atmega8/16/32 microcontroller. The workshop is tailor-made to give participants hands-on experience in working with microcontrollers and building projects based on microcontrollers. The workshop will now

focus on microcontroller programming in developing application using IDE (AVR Studio).All the programs written will be practically executed on custom made AVR development board.

Workshop Schedule:

Topics	
	Introduction to Embedded System
	Difference Between μc and μp
	Arduino Series Micro-Controllers
	Introduction to ATMEGA 328 Micro-Controller
	Introduction to different programming tools
	Arduino IDE – A Quick Coverage
	Software Installation
	Kit distribution
	Overview on Arduino Development Board
	Programming in C – A Quick Coverage
	Introduction to I/Os
	Overview of Digital I/Os
	Working with Digital I/O
	Hands Dirty With Programming – Simple Programs
	Practical: program to switch on off LEDs
	Practical: led blinking in different patterns
	Introduction to LCD
	Sending Command and Data to the LCD
	Practical: Displaying characters on LCD
	Practical: Displaying String on LCD
	Interfacing Buzzer with Arduino
	Practical: Generating Beep through Buzzer
	Introduction to Motors
	Practical: Running Robots and the DC Motors

		Introduction to Sensors
		working with built-in ADC present in arduino controller
		Working with Analog Inputs & temperature sensor
		Practical: interfacing temperature sensor and display it in the LCD
		Practical: Digital Thermometer
		Practical: Gas detection
		Practical: Alcohol Detection
		<i>Introduction to Relay</i>
		Interfacing relays to arduino
		Practical: Home automation through sensors
		Introduction to Accelerometer sensor
		Practical: Moving Robot through Accelerometer
		Interfacing Bluetooth with Arduino
		Practical: Mobile controlling home appliances
		Project: Home automation system using IOT
		Q& A Session

Workshop Highlights:

- Target and optimize 8 bit microcontrollers by using Embedded C
- Programming the microcontroller using Embedded C.
- Interfacing and controlling various devices like LED, Buzzer, Motors, Sensors, etc. with microcontrollers.
- Usage of internal peripherals of a microcontroller such as Timers, Interrupts and UART.
- Create and Manage Designs by using the Arduino Design Environment.
- Interface external peripherals such as Motor Driver, LCD, etc.
- Making serial communication with PC using HyperTerminal and UART communication Protocol.
- Exposes to the different software's require for building an Embedded System.

Details:

Eligibility: All students from the branches ECE, EEE, EIE and ECM can attend this workshop

Schedule: 4 days (10hrs)