

Embedded Systems		
Topic	Subtopics	Duration
Embedded Systems Introduction of Microprocessor & Microcontroller	Introduction of Architecture of Microprocessor & Microcontroller	05th October (07:10-08:10)
Introduction of embedded system, Features of embedded system.	Application of embedded system Practical Examples Characteristics Types of Embedded Systems	06th October (07:10-08:10) 07th October (07:10-08:10)
Hardware Software Co-design	Challenges in embedded computing design Co-design Process Why co-design Architecture	08th October (07:10-08:10) 09th October (07:10-08:10)
Introduction to ATmega/Arduino	Arduino Boards, which Arduino is best? Memory map of Arduino, pin configuration ATmega328 features	12th October (07:10-08:10)
Register map ATmega328	Arduino C functions vs register commands	14th October (07:10-08:10)
Introduction to simulation software/editors	Proteus: know-how TinkerCAD introduction	16th October (07:10-08:10)
Basics Programs with Atmega/Arduino	LED interfacing in proteus and TinkerCAD Controlling LED with a Switch	18th October (07:10-08:10)
Basics Programs with Atmega/Arduino	LED with serial-port LED with switch + serial port	21th October (07:10-08:10)
Advanced Programming: Interfacing 8 LEDs with a single port of ATmega/Arduino and displaying 10+ different patterns:	All on-off First four on-off Odd-Even Left-shift and right-shift Curtain effect: left and right Converge and Diverge	24th October (07:10-08:10) 26th October (07:10-08:10)

Advanced Programming: Seven Segment Display Theory and Practical Use of millis function instead of delay and its advantages	Concept of LCD The internal architecture of LCD with pin configuration Internal registers of LCD Algorithm to send data and commands to LCD from Microcontroller Difference between 4-bit and 8-bit LCD operation	29th October (07:10-08:10) 30th October (07:10-08:10)
Advanced Programming: Interfacing LCD with Arduino to:	Displaying various patterns and Effects Process of creating custom characters on LCD Hex commands of LCD	01st November (07:10-08:10) 05th November (07:10-08:10)
Introduction to motors and actuators	Interfacing different types of motors with Arduino/ATmega	07th November (07:10-08:10)