

## Arduino Programming

### Semester - 1

Session Nos.	Concept / Component	Learning Target	Project / Real Life Application
Session 1	Introduction to Arduino	Learning the concepts of Arduino	
Session 2	LED	Learning about breadboard and how different components can be connected to it	LED Blinker
Session 3	Variables and Data type	Learning about variables and datatypes in C++	
Session 4	Conditional Statements	Learning if and if else.. statements	Door Bell
Session 5		using C++ Syntax	
Session 6	Switch Statement	Learning Switch case Statement	
Session 7		Learning how switch statements can be used for controlling LED(s)	Car Parking Management System
Session 8	Seven Segment display (CC)	Learning about 7 segment display and programming it	
Session 9		Programming Seven Segment to display any single digit number	Digit Counter
Session 10	Photoresistor	Learn how to program Photoresistor along with Arduino for creating automatic street light	Automatic street Light
Session 11	For Loop	Learning For Loop coding	Fading LED
Session 12	Quiz	Revision and Test	
			<b>Projects = 6</b>

## Semester - 2

Session Nos.	Concept / Component	Learning Target	Project / Real Life Application
Session 1	Temperature and Humidity	Learn how to monitor temperature and humidity using DHT11 sensor	Weather Monitoring
Session 2	LCD Interfacing with Arduino	Learn how to display text on LCD Screen	LCD Display
Session 3	LCD Interfacing with Arduino	Learn how to display text on LCD Screen	Scrolling Text Display
Session 4	Keypad Interfacing with Arduino	Learn how to input data using Keypad	Keypad Interface
Session 5	Keypad Interfacing with Arduino Smart Attendance Solution	Learn how password validation can be done using keypad Learn how to program RFID reader	Smart Attendance
Session 6			
Session 7	Smart Attendance Solution Smoke Detector	Learn how to program RFID reader Learn how smoke sensor can be used to detect smoke	Smoke Detector
Session 8			
Session 9	Sound Sensor	Learn how to program Sound Sensor	Clap On Clap Off
Session 10	Functions	Learn how to write program using function	RGB Led
Session 11	Functions	Learn how to write program using function	
Session 12	Quiz		
			<b>Projects = 8</b>

### Extra

Sessions	Concept / Component	Learning Target	Project / Real life Application
Session 13	Water Level Indicator	Learn how to program water level indicator to buzz when the water reaches a particular level	Water level indicator
Session 14	Vibration Sensor	Learn how vibration sensor works	
Session 15	Reed Switch	Learn how magnet can be used control electronic devices	Magnet as Switch
Session 16	Car parking Management sys	Learn how to create program to display empty slot on Sven segment using Keypad	Car parking Management sys
Session 17	Car parking Management sys	Learn how to create program to display empty slot on Sven segment using Keypad	
Session 18	Colour Sensor	Learn to program colour sensor to identify different colours	Colour Detector
			<b>Projects = 5</b>