

## ABSTRACT

The workshop is designed to provide participants with a foundational understanding of Arduino microcontroller programming and basic electronics principles. Over the course of two days, participants will engage in both theoretical learning and hands-on practical sessions to grasp fundamental concepts and develop essential.



## TARGET AUDIENCE

Students at 10+2 level with basic knowledge of physics and mathematics.



## PREREQUISITE AND OUTCOME

### Prerequisite:

- Experience of using Windows or Linux operating system
- Basic concept of computer programming (especially C/C++) is preferable.

**Outcome:** By the end of the workshop, participants will have a foundational understanding of Arduino, basic electronics principles, programming concepts, and the ability to create simple Arduino-based projects.



## DURATION

This is a 2-Days workshop (Total 8 hours). Each day there will be two sessions. Each session has a duration of 2 hours.



## SPEAKERS



### Mr. Amit Ghosh

Assistant Professor  
Department of Electronics and  
Communications, RERFGI

### Mr. Avik Ghosh Dastidar

Assistant Professor  
Department of Basic Science and  
Humanities, RERFGI



## VENUE

Regent Education and Research Foundation  
Group of Institutions  
Barakanthalia, Barrackpore  
Kolkata, PIN 700121



## RERF

Group  
of  
Institutions

# AUTOMATIONXTREME

A new way of the electronic world

## RULES AND REGULATIONS

1. This 2-day (8 hours) workshop is divided into four sessions. The workshop is furnished with hands-on training along with the theoretical ideas. The concept of any computer programming language is preferable. The mode of communication will be in English / Bengali during the workshop.
2. The registration and the workshop is free of cost. Certificates will be provided to the participant after the successful completion of the workshop.
3. A school can send only one team. The team can have a minimum of 4 students and a maximum of 6 students. The students' details must be provided during registration. All the students must be from 11th or 12th standard.
4. School must identify one teacher or staff as a SPOC (Single Point Contact Person). Our team will contact him/her whenever necessary. He/She will be present and help the student during the workshop. The details of the SPOC must be given during the workshop.
5. After the final date of registration is over, our team will allot the exact dates of the workshop to your school which will be within the month of April. The date, however, may change under unavoidable circumstances which will be informed to you well ahead.
6. This is an offline workshop. All the participants and the SPOC must be at the venue at the given time.

## CONTACT



**Dr. Arindita Saha**



**[rerf.in/automation-xtreme](http://rerf.in/automation-xtreme)**



**[roboticsclub@regent.ac.in](mailto:roboticsclub@regent.ac.in)**



**+91-8787472437**

## COURSE OUTLINE

### ▶ DAY1 SESSION 1

What is a microcontroller?

Introduction to Arduino:

- What is Arduino?
- Different types of Arduino board
- Applications and significance.

Understanding Arduino UNO Board:

- Components of the board.
- Input/output pins.
- Power supply options.

Introduction to Sketch:

- Installing and understanding Sketch.
- Compiling and uploading a program
- Installing new library

### ▶ DAY1 SESSION 2

Programming with Sketch:

- Setup()
- Loop()
- pinMode()
- digitalWrite()
- digitalRead()
- analogWrite()
- analogRead()
- delay()
- Serial.begin()
- Serial.println()

Introduction to TinkerCad

- Constructing circuit and coding using TinkerCad
- Blink program

### ▶ DAY2 SESSION 1

Sensors and Actuators:

- Types of sensors (e.g., light, temperature, motion).
- Introduction to actuators (e.g., motors, servos).

Interfacing Components:

- Connecting and configuring sensors and actuators with Arduino.

Project: Automated weather station using DHT11

- DHT11 pin configuration
- LCD 16 x 2 pin configuration
- Circuit diagram
- Code

### ▶ DAY2 SESSION 2

Project: Automated weather station using DHT11

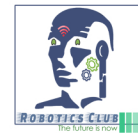
- Hands-on training



Last Date of Registration: **MAY 06, 2024**



**ORGANISED BY:**



Robotics Club,  
RERFGI

In association with

