



SKILL LAB

ON

Introduction to Arduino UNO For 3rd Semester Students



KLS GOGTE INSTITUTE OF TECHNOLOGY, BELAGAVI Department of Computer Science & Engineering

Overview:

The 36-hour hands-on course introduces students to embedded systems using Arduino UNO, covering fundamental hardware/software concepts, sensor interfacing, communication protocols, and IoT applications. Students gain practical experience through mini projects, bridging the gap between software and hardware by exploring their interaction in real-world devices. The course reinforces theoretical knowledge in electronics, control systems, and programming, developing problem-solving skills in design, testing, and troubleshooting. By introducing IoT applications and enabling sensor integration with internet connectivity, the course prepares students for careers in embedded systems, IoT development, and prototyping roles, with a focus on innovation in automation, smart agriculture, and Industry 4.0.



Mode of Conduction of each Module: Offline

Theory:	10 Hours,
Demo:	10 Hours,
Lab Sessions:	16 Hours
Total duration:	36 Hours
Certification exam:	03 Hours

Module 1: Getting Started with Arduino UNO

Basics of embedded systems and microcontrollers. Digital I/O Fundamentals, basic programming concepts.



Module 3: Actuators and Communication

Controlling actuators, Basic Communication Interfaces, Projects.

Module 2: Sensor Integration and Data Acquisition

Working with sensors like DHT11, LDR, Ultrasonic sensor interfacing, data processing & visualization.

Module 4: IoT Basics and Real- World Project

Introduction to IoT, Connecting Arduino to the Internet , Real life projects

Terms and Conditions

Students who have paid a skill lab fee to the institution are eligible for training. The students must maintain 90% attendance for obtaining the skill lab certificate.

Students must attend training as per scheduled time.

Acceptance

In order to accept and start the training program, students are required to register with the respective department. Details to be provided by the student to the department include:

Name, USN, UID, Mobile No, Email id

Coordinator:

Name: Dr. Sharada M. Kori
Dept. of CSE
Phone: 7026389654
E-mail: smkori@git.edu

Outcomes

- Enhanced understanding of microcontroller-based systems.
- Improved ability to prototype hardware projects.
- Exposure to IoT and smart systems.