

AMRITA VISHWA VIDYAPEETHAM
Department of Electronics and Communication Engineering
VLSI Design Lab 2, AB2, Second Floor
B. Tech. (Electronics and Communication Engineering and Computer and
Communication Engineering)

19ECE181 Electronics Systems Lab

List of Experiments

Course Outcomes

CO1: Able to understand both analog and digital sensor interfacing with a programmable hardware platform

CO2: Able to analyze various communication protocols used in the design of portable devices

CO3: Able to develop graphical front end using processing IDE

CO4: Able to design and develop embedded systems using Arduino and Processing IDE

Exp 1: GPIO and ADC Programming using Arduino

- a) LED blinking using Arduino
- b) Controlling LED with Switch
- c) Controlling Relay with LDR Module
- d) Controlling Relay with Potentiometer

Exp 2: Serial Communication Protocols (UART & SPI) using Arduino

- a) Serial Transmission using UART
- b) Serial Reception and Transmission using UART
- c) Device Control using UART in Arduino
- d) Device Control with Bluetooth Module using UART

Exp 3: WebServer and IoT Cloud Communication using Arduino

- a) Identification of available Wifi Networks
- b) IoT Cloud Communication using Thingspeak and NodeMCU

Exp 4: Graphical Front End Development using Processing IDE

- a) Display Text
- b) Slider Control using ControlP5 Library
- c) Graphical Front End Development using ControlP5 Library
- d) Display Image

- e) Display Image using Pixel Array
- f) Threshold Image using Pixel Array

Exp 5: Arduino Interfacing with Processing IDE

- a) Serial Reception using Processing IDE
- b) Device Control using Button in Processing IDE
- c) Servo Motor Control using Knob in Processing IDE

Lab Schedule CCE

Experiment	Date	Time
Experiment 1	25/03/2022	08:40 am – 10:40 am
Experiment 2	26/03/2022	08:40 am – 10:40 am
Experiment 3	28/03/2022	08:40 am – 10:40 am
Experiment 4	29/03/2022	08:40 am – 10:40 am
Experiment 5	30/03/2022	08:40 am – 10:40 am
End Semester	04/04/2022	08:40 am – 10:40 am
End Semester	05/04/2022	08:40 am – 10:40 am
End Semester	06/04/2022	08:40 am – 10:40 am