Arduino
WORKSHOP 101

TRAINING: INTRODUCTION TO ARDUINO & C PROGRAMMING WITH FOCUS ON SOFTWARE

Communica will host a monthly Arduino 101 Workshop.

Due to popular demand, we have replaced our previous syllabus to include new content to focus on software coding and interfacing instead of debugging breadboard wiring problems. Starting August 2021.

Target Group
- Students with an interest in Arduino and C Programming

Training For Ages 12 And Up

Requirements
- **Basic Electronics 101 or basic knowledge of electronics**
- **Bring own notebook/laptop.**

What you will learn
✓ Introduction to Arduino board and C Programming using Arduino hardware
✓ C Programming
✓ Practical Session

Price:
R2,220-00 Per student

Dates:
As per Communica Website: www.communica.co.za

Time:
Saturday, 8H00 – 13H00

Course Duration: 2 Days
The course will be divided In two day sessions:
- **Saturday 1** - 5 hours (8:00 – 13:00)
- **Saturday 2** - 5 hours (8:00 – 13:00)

Includes:
- Each student will receive an **Arduino Workshop Kit** to take home
- Training Slide Manual
- Certificate of Attendance

TRAINING ONLY AVAILABLE @ COMMUNICA SAMRAND BRANCH
HEAD OFFICE - SAMRAND

Communica Building
53 Landmarks Avenue,
Samrand, Centurion

Send your enquiries to
✉ training@communica.co.za

For More Information Call:
☎ 061 940 8143 - Theunis

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A World Of Electronics

NEW Course Content

- **Arduino Integrated Development Environment**
  ✓ Software Installation
  ✓ USB / Board Driver Installation
- **Arduino Boards**
  ✓ Arduino Nano
  ✓ Arduino Uno
  ✓ Arduino Mega
  ✓ Arduino Shields
- **Number Systems**
- **Coding**
- **Flowchart**
- **Arduino C**
- **Development Cycle**
- **Arduino IDE Example Program**
- **Arduino C Programming**
- **Arduino I/O Pins**
  ✓ Digital Pins
  ✓ Analogue Pins
- **Practical C Programming with Hardware**
- **Hardware - Shield for in-class training**
- **Hardware - Setup Arduino Nano for home exercise**
- **Statements**
  ✓ if statement
  ✓ if else statement
  ✓ case statement
  ✓ for statement

  ✓ for inside a for statement
    – nested loop
  ✓ Infinite loop
  ✓ while loop
  ✓ do while loop
- **Functions**
- **Libraries**
- **Hands-on Practical with some Sensors and Actuators**
  ✓ Introduction to Pulse Width Modulation (PWM)
  ✓ Hobby Servo
  ✓ Stepper
  ✓ Why to use a Relay with an Arduino
  ✓ Liquid Crystal Display
  ✓ analogRead()
- **Sensors**
  ✓ LM35 Temperature Sensor
  ✓ HC-SR04 Ultrasonic Sensor
- **Multi-tasking**
- **State Machine**
- **Interrupts**
- **Object Oriented Programming (OOP)**
  ✓ Class, Constructer, Update
  ✓ Arduino Uno Breadboard Wiring
  ✓ Example Code: Blinker_OOP.ino
  ✓ Example code: ThreeLeds_TwoServos_Button
- **END**