**

Connect Shiksha IoT Academy

15-Day IoT & Robotics Program

Transforming Engineering Students into IoT Professionals

Programming a NodeMCU ESP8266 using the Arduino IDE :

Step 1: Install Arduino IDE

If you haven't already, download and install the Arduino IDE.

Step 2: Add ESP8266 Board to Arduino IDE

1. Open Arduino IDE.
2. Go to **File > Preferences**.
3. In the **"Additional Board Manager URLs"** field, paste this URL:

   ```
   http://arduino.esp8266.com/stable/package_esp8266com_index.json
   ```

4. Click **OK**.

Step 3: Install the ESP8266 Board

1. Go to **Tools > Board > Boards Manager**.

2. Search for **"esp8266"**.
3. Click **Install** on the package named *esp8266 by ESP8266 Community*.

Step 4: Select the NodeMCU Board

1. Go to **Tools > Board**.
2. Select **NodeMCU 1.0 (ESP-12E Module)**.

Step 5: Connect the NodeMCU

- Use a **micro USB cable** to connect the NodeMCU to your PC.
- Go to **Tools > Port**, and select the COM port corresponding to your NodeMCU.

> If no port shows, make sure you have the **CH340 or CP210x USB driver** installed (depending on your board).

Step 6: Write or Load a Sketch

Example: Blink the onboard LED (usually on GPIO 2 / D4):

```
void setup() {
  pinMode(2, OUTPUT); // D4
}

void loop() {
  digitalWrite(2, HIGH);
  delay(500);
  digitalWrite(2, LOW);
  delay(500);
}
```

Step 7: Upload the Code

1. Click the **Upload** button (right arrow icon).
2. Wait for it to compile and upload.
3. You'll see "Done uploading" when successful.

Optional: Open Serial Monitor

- Go to **Tools > Serial Monitor**.
- Set the baud rate to **115200** (common default for NodeMCU).

Would you like help writing code for a specific project using the NodeMCU (e.g., controlling LEDs, reading sensors, or IoT tasks)?