

# Living Wall Sensors Code

\*\*\* Teachers can also preload this code on to the Arduinos so the students are only building the system and not messing with the code.

Here is the code for the CO2 Sensor with humidity and temperature as well. You will need to type/paste this into the Arduino IDE. Then click upload onto your Arduino. You will need to make certain that the LiquidCrystal I2C is loaded into the library.

```
#include <LiquidCrystal_I2C.h>

#include "Adafruit_HTU21DF.h"

int sensorPin = A1; // select the input pin for the potentiometer

float sensorValue = 0; // variable to store the value coming from the sensor

float co2=0;

float temp=0;

float rel_hum =0;

LiquidCrystal_I2C lcd(0x27, 16, 2); // set the LCD address to 0x27 for a 16 chars and 2 line display

Adafruit_HTU21DF htu = Adafruit_HTU21DF();

void setup() {

  // put your setup code here, to run once:

  lcd.init();

  lcd.backlight(); //turn on backlight

}

String line1;

String line2;

int loopTime = 3000;

void loop() {
```

```
// put your main code here, to run repeatedly:
sensorValue = analogRead(sensorPin);
co2=sensorValue*5.0/1023*500;
temp = htu.readTemperature();
rel_hum = htu.readHumidity();
line1=String(String(temp)+" C; "+String(rel_hum)+"%");
line2=String(String(co2)+" ppm");

lcd.setCursor(0, 0); // set the cursor to column 0, line 0
lcd.print(line1);

lcd.setCursor(0, 1); // set the cursor to column 0, line 1
lcd.print(line2);
delay(loopTime);
lcd.clear();

}
```