

EL-302 INSTRUMENTATION AND MEASUREMENT

COURSE PROJECT – PROPOSAL TEMPLATE

PROJECT GROUP MEMBERS (2)

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PROJECT TITLE:

IoT Monitoring Device

PROJECT ABSTRACT:

A smart city enables the effective utilization of resources and better quality of services to the citizens. To provide services such as air quality management, weather monitoring and automation of homes and buildings in a smart city, the basic parameters are temperature, humidity, and CO₂.

PROJECT MOTIVATION:

In this modern era, a new disaster has been discovered named as climatic change. The affect produced by this can produce massive destruction to human lives as well as other living things if not considered seriously. It includes some basic factors such as temperature, humidity, and gas quality. If these factors are not monitored correctly, it can cost huge loss.

To overcome this problem, an IoT based monitoring device is going to be developed which would not only be cost-efficient, but it would also be user friendly having utmost durability. The reason of these betterments is that a complete product would be provided with modules embedded in the system.

This motivation has been identified through articles, research papers and also it is included in our FYP project.

<https://ieeexplore.ieee.org/abstract/document/7562757>

<https://ieeexplore.ieee.org/abstract/document/5565120>

<https://ieeexplore.ieee.org/abstract/document/7218144>

COMPONENTS/HARDWARE REQUIRED:

- | | |
|--|---|
| 1. <u>NodeMCU (ESP8266) Micro-controller</u> | 4. <u>OLED Display 0.96 Inch 128x64 I2C</u> |
| 2. <u>DHT11 Temperature and Humidity</u> | <u>SSD1306 LED Screen</u> |
| <u>Sensor</u> | 5. <u>Printed Circuit Board (PCB)</u> |
| 3. <u>MQ135 Air Quality Detector Sensor</u> | 6. <u>DC Battery (9V)</u> |

COST ESTIMATION:

<i>Serial Number</i>	<i>Components</i>	<i>Unit Price (PKR)</i>	<i>Quantity</i>	<i>Total Price (PKR)</i>
1	<i>NodeMCU</i>	<i>500.00</i>	<i>1</i>	<i>500.00</i>
2	<i>DHT11</i>	<i>300.00</i>	<i>1</i>	<i>300.00</i>
3	<i>MQ135</i>	<i>300.00</i>	<i>1</i>	<i>300.00</i>
4	<i>OLED 0.96 Inch</i>	<i>400.00</i>	<i>1</i>	<i>400.00</i>
5	<i>PCB</i>	<i>150.00</i>	<i>1</i>	<i>150.00</i>
6	<i>DC Battery (9V)</i>	<i>50.00</i>	<i>1</i>	<i>50.00</i>
7	<i>Miscellaneous</i>	<i>300.00</i>	<i>1</i>	<i>300.00</i>

The total approximate cost is about 2000.00 PKR.