EL-302 INSTRUMENTATION AND MEASUREMENT

COURSE PROJECT – PROPOSAL TEMPLATE

PROJECT GROUP MEMBERS (2)

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PROJECT TITLE:

Light Intensity Meter

PROJECT ABSTRACT:

Light is an essential element for modern life, promoting a sense of wellbeing for users. However, bad illumination may produce health problems such as headaches and fatigue, among other vision problems. To solve this problem, we are going to develop an intelligent light intensity meter based on IoT making the device user friendly. The meter would be consisting single chip processor as the core control device, a digital ambient light sensor that will detect light intensity and smartphone based mobile application which would provide the display. The light intensity meter, also known as lux meter, is used to measure the density of light in an area which would be measured in lux. It is used in photometry as a measure of the intensity, as perceived by the human eye of light that hits or passes through a surface. As in normal meter, the instrument measures light intensity from Sun and fluorescent light bulb with instrument model Heavy Duty Light Meter but the range of this meter has been enhanced.

PROJECT MOTIVATION:

Many light intensity meters have been developed in the society. They have been created either for commercial use or for industrial use, that are according to their requirement which costs a common man very expensive. Not only this, but other problems that have been detected are non-durable and complex materials that seems quite hard for a person to use.

To overcome this problem, we are going to introduce a smart meter which would not be cost-efficient, but it would also be user friendly having utmost durability. Furthermore, it will provide the user to easily replace the components if damaged minimizing the repairing problems.

This motivation has been identified through web page and news (electronic media).

COMPONENTS/HARDWARE REQUIRED:

1. *NodeMCU (ESP8266)*
2. *BH1750 Light Sensor*
3. *Mobile Application*
4. *Breadboard*
5. *Jumper Wires*
6. *DC Battery (9V)*

COST ESTIMATION:

Serial Number	*Components*	*Unit Price (PKR)*	*Quantity*	*Total Price (PKR)*
1	*NodeMCU*	*450.00*	*1*	*450.00*
2	*BH1750 Light Sensor*	*400.00*	*1*	*400.00*
3	*Breadboard*	*150.00*	*1*	*150.00*
4	*Jumper Wires*	*30.00*	*1*	*30.00*
5	*DC Battery (9V)*	*50.00*	*1*	*50.00*
6	*Mobile Application*	*0.00*	*1*	*0.00*

The total approximate cost is about 1100.00 PKR.