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Mini-Project Report

On

“ROBOTIC ARM USING ARDUINO”

Submitted in partial fulfillment of the requirements for the award of degree of

BACHELOR OF ENGINEERING

in

ELECTRONICS AND COMMUNICATION ENGINEERING

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CERTIFICATE

Certified that the mini project work entitled **“ROBOTIC ARM USING ARDUINO”** carried out by **Sanjeev Sreedhar (1BI19EC132), Srivathsa S.V. (1BI19EC143), Srivatsa P. (1BI19EC144) and Thakshak S. Nakshatri (1BI19EC156)** Bonafede students of **VI semester** in partial fulfilment for the award of **Bachelor of Engineering** degree in **Electronics and Communication Engineering** of the **Visvesvaraya Technological University, Belagavi** during the year **2021-22**. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the department library. The Mini project report has been approved as it satisfies the academic requirements in respect of Mini Project work prescribed for the said degree.

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To establish and develop the Institute as a centre of higher learning, ever abreast with expanding horizon of knowledge in the field of engineering and technology, with entrepreneurial thinking, leadership excellence for life-long success and solve societal problem.

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- Nurture **innovative concepts** and problem **solving skills**.
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PSO2: Soft Skills: An ability to use latest hardware and software tools in Electronics and Communication engineering.

PSO3: Successful Career: Preparing Graduates to satisfy industrial needs and pursue higher studies with social-awareness and universal moral values.

ABSTRACT

With the world evolving faster every day, there has been a need to automate production and other related activities in the supply chain. Robotic Arm is one such innovation that is constantly proving to be a worthy investment for facilities implementing them. Robotic arms are widely used to lift heavy loads and place them precisely, welding components in auto mobile facilities to name a few. They have variable working envelopes and can operate in toxic environments which has drastically improved their applicability. In this project we, have implemented simple four-axis articulated robotic arm that can be controlled via an Android device with Bluetooth facility. Also, the cheap and robust design makes it a very useful tool in multiple industries. This is a working field of research in which there are a number of outstanding open problems and an area of exploration. This report concentrates on the development of a robotic arm which is functional to do a pick and place operation and controlled by using a mobile application via Android phone. Designed to work on predetermined commands, the robot arm has the ability to move in 3 degrees of freedom; upward, downward, left and right direction at a specified angle with 4 servo motors and according to the mobile app specifications. Designed and realized, the robotic arm control is through the use of a mobile application, via Bluetooth module, that has been programmed through Arduino UNO microcontroller.

