**CHAPTER 1**

**INTRODUCTION**

**1.1. Introduction to Robotic Arm**

Indeed the earth is vastly revolving all over and together with this are the different changes, which range from having a simple life to be more complex. On the other hand, electronics are one of the technologies being created today which are widely used all over the world. Likely the term mechatronics, a combination of electronics and mechanics are used in industries. Robotic arm is one mechatronic application that can operate autonomously to handle various industrial processes that need more physical effort. A Robotic arm is a robotic manipulator, usually programmable, with similar functions to a human arm; the arm may be part of a more complex robot. The robotic arm will be connected to the mobile phone through Bluetooth and can be controlled by using an android controller application. The robotic arm is also sometimes referred to as anthropomorphic as it is very similar to that of a human hand. Humans today do all the task involved in the manufacturing industry themselves. However, a robotic arm can be used for various task such as welding, drilling and spraying and many more. The main part of the design is ATmega328 microcontroller which coordinates and controls the product action.

Researcher have been done and implemented in order to have knowledge about mechanics and software during the operations carried out by the robotic arm which is designed to fulfill the tasks determined in accordance with predetermined commands. It was determined what function the robotic arm would be and what movements it could make. Robotic arm made of stepper motor; it can carry the desired material, mix it up and perform the commands previously determined by a user. If this project is also a designated task; the robotic arm takes a piece of material and brings it to the desired position and then records its movements and lets it do the same action until it is stopped. The servo motor is preferred in order to be able to precisely and must be at high torque. The robotic arm is composed of seven servo motors and can move in five axis directions with motors.