**DEPARTMENT OF ELECTRICAL AND INFORMATION ENGINEERING**

**UNIVERSITY OF RUHUNA**

**FINAL YEAR UNDERGRADUATE PROJECT (GROUP – 05)**

**PHYSIOTHERAPY SYSTEM FOR HUMAN ARM ANALYSIS**

In this project, a system is developed and tested for capturing, visualizing and analyzing human arm elbow joint angles. The hardware design accomplishes the functions of acquisition, filtering and Analog-to-digital (A/D) conversion. The elbow angle acquisition is done by two accelerometers placed on the upper arm and forearm. The software design includes interfaces in Visual Studio and MATLAB. The interface in Visual Studio depicts a 3D model moving parallel with the accelerometer system, and graphically represents the angle variation of measured carrying and flex angle. The interface of MATLAB is incorporated with the processed images which are relevant for measuring the carrying angle and the flex angle.