

ABSTRACT

Rancang Bangun Alat Peraga Lengan Robot Sebagai Modul Pembelajaran Robotikadan Mikrokontroler, NURUL AISYIYAH ROHMAH AGSANDA, Nim E3211528, 2014. Computer Engineering Program, Department of Information Technology, Federal Polytechnic Jember. Commission Advisor, Chairman: Nurul Zainal Fanani, S.ST., MT. Nugroho Setyo Wibowo, ST.,MT.

The purpose of "Rancang Bangun Alat Peraga Lengan Robot Sebagai Modul Pembelajaran Robotikadan Mikrokontroler" is to design a robotic arm that can follow the movement of a human arm by combining function of potentiometer as input which proceed by microcontroller to get servo motor motion as output. This robotics arm is intended for instructional media on the robotics and microcontroller courses.

There are several stages in completing this thesis including learning literature, system design, programming design, manufacture systems, systems programming, operating instructions and system testing and making a report. Testing is done by moving the display arm at certain angels

In the testing, the upper and center arm are moved at 0° , 30° , 60° , 90° . For a while the forearm is moved at an angle of 45° , 60° dan 90° . From the result of experiments that have been done on the arm robot props, middle and lower servo motors can work maximally. Whereas the upper servo error occurs when the position of arm on 90° and servo showed 75° . This error is caused by the lack of precise construction oh the servo motor at the top of the joints which causes the servo's workload exceeds the maximum workload.

Keyword: Robot arm, servo, arm, microcontroller,