

### ***ABSTRACT***

Stability is the things that must be realized in creating control system. So many ways can be used for learning about control system. One of the most popular topic to learn control system at higher education level is controlling about Inverted Pendulum. Inverted Pendulum representing the unstable system. Giving the suitable control force to the system is needed in order to maintain the stability of Inverted Pendulum system.

The control of Inverted Pendulum system will be created from two stages there are swing-up control and stabilization control. In this final project will only focused on making the swing-up control for the Inverted Pendulum system. Fuzzy Logic method will be applied to control the Inverted Pendulum system.

The result of this final project is the pendulum rod can reach the set-point position at  $180^\circ$  for the specific time with the *error* average values for the sensor about 0,15.

**Kata Kunci:** Balancing, Swing-Up, Inverted Pendulum, Fuzzy Logic