

## **ABSTRACT**

*The laboratory of Industrial Engineering University of Telkom is one of the facilities to support students in learning sciences industrial engineering including data processing and statistical analysis, the depiction of digital map, simulation of business processes, product design, graphic design, and machining processes products and scientific presentation which the implementation is always used a computer. The laboratory of manufacturing process is a new laboratory which is located at the industrial engineering that has room undersized 11,89 x 4,90 m and used for the activity of lab work. Under observation directly, the physical environment (level of temperature, noise levels and the level of illumination) in the room not optimal and the facilities used causes the layout in the lab not optimal and thus causing space to do movement out of the recommended standards.*

*In designing the layout of laboratory facilities using BLOCPLAN Algorithm and ergonomics approach. BLOCPLAN algorithm works by building and change the layout based on the degree of proximity or Activity Relationship Chart (ARC). This research analysis comparing the initial layout of several alternative layouts are generated from the BLOCPLAN algorithm. The result in this study proposed a more optimal layout using the BLOCPLAN algorithm as evidenced by the R-Score of 0.82 and then done adjustment by using the ergonomic approach to the layout of the facilities in Manufacturing Process Laboratory.*

**Keywords:** *Laboratory, Ergonomics, Physical Environment, Layout, Activity Relationship Chart, Algorithms BLOCPLAN, R-Score.*