THE DESIGN OF PRODUCTION FACILITY LAYOUT
USING MODULAR LAYOUT APPROACH
(CASE STUDY AT PT. MECO INOXPRIMA)

Name : FITRIA DEWI
NRP : 2502 100 030
Program : Industrial Engineering FTI-ITS
Conseling Lecturer 1 : Dyah Santhi Dewi, S.T, M.EngSc
Conseling Lecturer 2 : Arief Rahman S.T

Abstract
The design of facility layout has an important role in supporting the flow process of production that gives impact to the on-time order execution. PT. Meco Inoxprima is a job-order company that produces vessel and heavy equipments, made from stainless steel and mild steel with a vary components. At the present time, PT. Meco I using the process layout type in the production floor. The big variance of product routing causes problems in the process layout: huge material handling activities.

This research using modular layout with string matching and clustering tools to grouping the machines and analyses the similarity of vary operation routing to be a layout configuration that could minimize the distance of total moving and minimize the material handling cost. The arrangement machine in the module is using the modular layout method. While the arrangement of layout module and other supporting facilities are implementing corelap algorithm and 2-OPT algorithm to be alternatives layout.

From both layout alternatives, the first layout (corelap algorithm) is considered as a chosen layout. The layout improvement leads to decease the total distance of moving materials with a percentage value 56,07 % and the efficiency of material handling cost for a month with a nominal value Rp. 1,727,579.

Key words : Job order, Modular layout, Operation sequence analysis, cluster analysis, Corelap, 2-OPT