**ABSTRACT**

*Scheduling methods are developed because* *scheduling is an important. No one scheduling method always excels on all criteria, however each method has advantages over certain criteria. That matter affected by some factor as number of machine, number of job, job arrival, shop floor, and scheduling methods. The several of researchers had study of factor effect to scheduling performance. There was study among the number of machine effect, number of job effect and job arrival effect.*

*Variation of duration be expected effect to scheduling performance, no one research about variation of duration effect to scheduling performance. The research is nedded to find out effect variation of process time to scheduling performance, with the result that choose method of scheduling base.*

*The base research is Design of Experiment. The main factor is variation of duration. The number of job and scheduling method is nuisance faktor. Latin square design with five level factor is design of experiment in this research. Generating variation and due date data with Ms. Excel. In this study, variation as range with 30 minutes of mean and response variable is lateness.*

*Variation effected to scheduling performance significantly. Analysis of scheduling method efectivity compared to First Come First Serve method in various condition of duration and number of job. It was to find out how far effect process time variation would be base of choosing scheduling method.*

*Procesing time variation should be think properly when choose scheduling method process. In condition of low process time variation with number of small job, scheduling method efectivity had not significantly diverse. In condition of advanced process time variation regardless of the amount job, scheduling method efectivity had significantly diverse. In addition to Earleast Due Date method, Slack method would be second alternative for minimizing lateness.*

*Key Words : Scheduling Methods, Process Time Variation, Latin Square Design*, *Anova, Lateness*