# 7 IE TOOLS

~To improve the production market~

Have Kaizen activities been carried out smoothly at your company's production site?

- Your factory leaders and staff have basic understanding of Kaizen, but don't know where and how to start your Kaizen activities?
- The result of waste elimination activities does not meet your company's expectation?
- You have little opportunities to take part in courses focusing on useful and effective tools for Kaizen?

### CONTENT

#### Part 1: Basic principles of Kaizen (Improvement) and IE

- The definition of IE (Industrial Engineering)
- The 7 wastes in manufacturing activities
- ECRS Principle

#### Part 2: Productivity improvement with 7 IE tools

• 1. Process analysis

~ Analyze whole production process from raw materials to final product, in order to eliminate wastes and carry out Kaizen activities~

• 2. Motion analysis

~ Analyze motions tao eliminate wasted movements and to rearrange the movements' order and co-ordination with less laborconsuming and higher economic effectiveness ~

• 3. Time Study

 $\sim$  Analyze movements from work time perspective to eliminate wastes and improve productivity  $\sim$ 

4. Operation analysis

~ Analyze the movements of man and machines to calculate the timeconsuming ratio of each activities to the entire process ~

• 5. Combination work analysis

~ Analyze the time-consuming relationships between combined movements (between Man and Machines or among Men) to rearrange the process with higher productivity ~

6. Line balancing analysis

 $\sim$  Design a harmonious production flow which could remove the differences of necessary time-consuming between each stages  $\sim$ 

• 7. Material handling

 $\sim$  Analyze the product transfer flow process to reduce time-consuming and wastes  $\sim$ 

#### Part 3: 7 IE tools applications and action plan for Kaizen activities

- IE tools applications to PDCA cycle (Plan Do Check Act)
- 7 steps to conduct improvement activitie

#### Part 4: Summary and Action Plan

## **OBJECTIVES**



- Have a basic knowledge of 7 Industrial Engineering (IE) tools and their applications.
- Be able to apply 7 IE tools to production site.
- Be able to conduct Kaizen activities by using 7 IE tools.





**30%** theory, **70%** practice through group discussions, presentations,

group discussions, presentations, case studies, role-playing, games, etc.





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