

**WORK ANALYSIS AND DESIGN
IE 342
LABORATORY MANUAL**

LAB #3

METHOD IMPROVEMENT



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LAB #3 METHOD IMPROVEMENTS

Objective:

The objective of this laboratory activity is to develop the students' practical experience in observing and designing a new method (including workstation layout) that reduces or eliminates ineffective motions.

Lab Procedures:

1. Observe the bolt and washer assembly task performed by the person in front of you in Lab #2.
2. Analyze the final charts made in Lab #2 for non-value-adding activities (i.e. unnecessary movements, storage, inspection, etc.).
3. Review the current method for opportunities of improvement and describe the aspects of the current method that can be improved.
4. Describe modified work method:
 - a. Draw a sketch of the layout of workstation for revised method.
 - b. Create an operation chart for revised method.

When designing a new workstation layout or a method, keep in mind the principles of motion economy. The following are some suggestions:

- a. There should be a definite and fixed place for all tools and materials.
- b. Tools, materials, and controls should be located close to the area of use.
- c. Gravity feed bins and containers should be used to deliver materials close to the area of use.
- d. Materials and tools should be properly located in order to permit the best sequence of motions.
- e. The main objective is to eliminate idle or hold time for any of the hands.
- f. Jigs and fixtures should be used wherever possible to improve productivity.

Format of the Lab Report:

- Cover page is title page in any format.
- Introduction to operations analysis and methods improvement.
- Revised method information as explained above:
 - Sketch of layout.
 - Operator process chart (operation chart).
 - Determine the value adding and non-value adding activities.
- Analysis: compare the current and revised method on the basis of principles of motion economy. Explain why you expect the revised method to improve productivity.
- Conclusion: what is concluded from operations analysis and method improvement.

Lab #3 Operation Analysis Work Sheet

Layout of bolt and washer assembly (improved method):

