

Lesson Plan

Lesson: Introduction to Methods Engineering & Operations Analysis (Ch. 8)

Timeframe: Lesson 4

After covering subjects of:
work, work flow, assembly lines, logistics, difference between operations and service

Materials needed:

Video of PB&J laboratory

Objectives:

Basic:

- 1. State the basic elements of good process design*
- 2. Express workplace layout issues given a workplace layout*
- 3. Identify opportunities for using tools & equipment given a workplace layout*

Advanced:

- 1. Choose factors in facilities design which can improve the current situation*
- 2. Discuss alternatives and predict improvement in operations*

Background:

This part of the book is a cornerstone of the profession. The techniques described in this lesson give the background to your ability to analyze work systems. This will allow you to make improvements to existing work systems, or design new work systems so they work effectively and efficiently. These are hallmarks of a “well designed” work system.

Introduction to Lesson:

This lesson deals with (1) Methods Analysis and (2) Methods Design. Analysis is concerned with the study of an existing method or process, usually by breaking it down into the work elements or basic operations that comprise it. By examining the details of the elements or operations, a systematic search can be carried out to find ways to improve the method or process. Design is concerned with either of the following situations. (1) design of a new method or process or (2) a redesign of an existing method or process based on a preceding methods analysis. Therefore, this lesson is the basis for all industrial engineering design.

Procedure [Time needed, include additional steps if needed]:

Pre-Class Individual Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective
Step 1: Recognize the <i>context</i> of work	Understand the environment of work	0.25 hour	Review homework and lectures to date
Step 2: Recognize the <i>content</i> of work	Understand the various blocks which traditionally combine to define work	0.25 hour	Review homework and lectures to date
Step 3: Read chapter 8	Basic review of methods engineering	1.0 hour	

In-Class Group Space Activities and Resources:

Steps	Purpose	Estimated Time	Learning Objective
Step 1: Quiz in class	Evaluate retention of reading chapter	10 minutes	60% +
Step 2: Review of lab work and development of process sheet Resources - previously captured video from lab	List elements from video	20 minutes	Apply chapter concepts

Step 3: Presentation by teams of elements and identification of 2 problems	Evaluation of work element concept understanding	120 minutes	Properly classify elements of work and analysis of suboptimal condition
Step 4: Identification of tools and other work aids to improve work condition	Evaluation of work method concept understanding	Included in presentation	Properly evaluate work method elements as set forth in text
Step 5: Identification of physical workplace layout to improve work condition	Evaluation of work layout concept understanding	Included in presentation	Properly evaluate work layout elements as set forth in text

Closure/Evaluation:

Evaluation of formal lab report - submitted as homework

Analysis:

<i>Element</i>	<i>Meets minimum</i>	<i>Exceeds minimum</i>	<i>Outstanding</i>
<i>Element identification / use</i>	<i>Demonstrates element ID of task derived</i>	<i>Attempts to show relationship of elements and problem</i>	<i>Clearly shows relationship of elements and problem</i>
<i>Tools work aid identification / use</i>	<i>Mentions tools as a consideration</i>	<i>Attempts to show relationship of tool and work aid use and problem</i>	<i>Clearly shows relationship of tool and work aid use and work element improvement</i>
<i>Physical workspace issue identification / use</i>	<i>Mentions physical work space as a consideration</i>	<i>Attempts to show relationship of physical workspace layout and problem</i>	<i>Clearly shows relationship of physical workspace and work element improvement</i>

Post-Class Individual Space Activities:

Write up formal lab report analyzing video as reviewed in class.

Connections to Future Lesson Plan(s):

This is the basis for evaluation of work methods for the next 8 chapters