



# **WORK METHODS DESIGN**

IENG 301

FUNDAMENTALS OF  
WORK STUDY AND  
ERGONOMICS

# [ WORK METHODS DESIGN ]

The over-all process of putting a new product into production can be divided into three parts or phases:

- **Planning.**
- **Pre-production.**
- **Production.**

# [ 1. Planning ]

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There are six basic planning functions.

1. The design of the product results in drawings showing the size, shape, weight, material, and ultimate use.
2. The design of the process consists of determining the production system- the operations required and their sequence; dimensions and tolerances, machines, tools, gauges, and equipment required.
3. The design of work method consists of the establishment of operator-job relationships by determining how the person is to perform the operation, the work place, flow, and economic evaluation.

# [ 1. Planning ]

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4. The design of tools and equipment consists of determining the jigs, fixtures, dies, gauges, tools, and machines which will be needed to perform the operations.
5. The design of the plant layout consists of determining the total space required in terms of overall location of equipment, stock supply, service centers, work space, material-handling equipment, and the operator-machine relationship.
6. The determination of the standard time for the operation consists of measuring the work content of the job.

# [ 1. Planning ]

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- Planning is a decision-making process in that a goal or objective has been determined and a choice has been made from alternatives. The result is a specific product or part and specifications for its actual manufacture.

# [ 2. Pre-production ]

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- This is the transition phase. The planning information is transferred to the production organization.
- Tools, machines, and equipment are purchased, installed, and tried out.
- The routing for labor control is released.
- Operators are selected and trained for specific tasks.
- The planned operator method is carefully checked against the method being used, and the actual time taken is checked against the original estimate.
- This is a period during which the individual operations that go to make up the over-all manufacturing activity are tried out.

# [ 3. Production ]

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- It is the continuing operation of the manufacturing activity established in the planning and pre-production phases.
- It involves the use of operators, machines, and materials for the most effective manufacture of the product.
- There is necessity of
  1. preventing the methods from deteriorating or deviating adversely from the planned methods, and
  2. constantly examining the current methods for improvement and, when a better method is found, putting it into effect.