

ME-312F

PPT-3

- Work Measurement:

It is the application of techniques designed to establish the time for a qualified worker to carry out a specific job at a defined level of performance.

- Objectives of work measurement:

- i) Estimate target time

- ii) Comparison of methods

- iii) Balancing of work

- iv) Wage incentive schemes.

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v) Man and machine utilisation

vi) Production planning and scheduling.

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- Procedure for time study:
 - i) Select the work/job
 - ii) Analyse
 - iii) Record all relevant data
 - iv) Examine
 - v) Measure
 - vi) compile
 - vii) Define

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- Limitations of Time Study:
 - i) Stds. Cant be established for jobs not well defined.
 - ii) Where quality cannot be defined precisely standards may deteriorate quality.

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- Techniques of work measurement:
 - Work sampling
 - Stop watch time study
 - Predetermined time standards(PTS)
- Work Sampling:
 - A large no of instantaneous observations are taken
 - at random intervals over a time of a group of
 - workers, machines and processes.

- It is a method of finding percentage of occurrence of some activity by statistical sampling and random observations.

Activity of a long duration cannot be timed economically as per stop watch study, work sampling technique is very useful and gives accurate results.

- Normal frequency distribution:

- Procedure for work sampling:

- Define problem

- Describe the elements.

- State the desired accuracy limits

- Develop properly randomized times of observation.

- Observing activity and recording data

- Evaluate validity .

- Analyse and present the results.

- Determination of sample size:

The formula for sample size is given by $P.S = K\sigma = K\sqrt{p(1-p)}/\sqrt{n}$ where

P= percentage occurrence of an activity measured in fraction.

S= Error in fraction

K= Confidence level factor. e.g; for confidence level Of 95%, K=1.96

n=no of observations required.

- How to find value of n
- Procedure for selecting random observations:
 - Use of random table
- Errors in work sampling:

- Work sampling record sheet.
- Some of the uses of work sampling:
 - To study time utilization
 - To aid in job evaluation