

Industrial Engineering-ME

312F

Text Books:

- 1. Production and operations management-
Charry
- 2. Management Information Systems-
Sadagopan
- 3. Modern Production Management-
S.S. Buffa

Reference Books:

- Available in library

Syllabus & Books

- Definition:

It is also engineering approach to the detailed analysis of the use and cost of the resources of an organization.

Definition, Objectives, History

- Objective:
- Industrial Engineer carries out analysis to increase productivity and profit of organizations.

Definition, Objectives, History

- History:
- Had its roots in Industrial revolution (around 1750 AD)
- These led to establishment of factories with large no of workers and factory system.

Definition, Objectives, History

- F.W.Taylor, a mechanical engineer, proposed approach to the problems of production and shop management.
- Another engineer F.B.Gilbert worked in improving the efficiency.

Definition, Objectives, History

- Later world war II demanded increased production providing stimulus to IE. Concepts of predetermined time standards, value engineering, systems analysis, and operations research came to existence.

Definition, Objectives, History

- Productivity:
- Ratio of output produced to input resources utilized in production.
- Here we shall focus on enterprise level productivity.

Productivity and Workforce Management

- Output and input factors in an enterprise:
 In a manufacturing concern products
are expressed
 in numbers and value after conforming
to quality.

Productivity and Workforce Management

- The inputs used by enterprise are
- Land and building
Materials
Machines and equipment
Human resources
Capital

Productivity and Workforce Management

- How to measure productivity:
Profit productivity = Profit / Investment
Labour productivity
Materials productivity

Productivity and Workforce Management

- Factors affecting productivity:
 - i) External
 - ii) Internal factors
- External factors are:
 - . Natural resources
 - . Political conditions etc.

The external factors are not within the control of management.

Productivity and Workforce Management

- Internal factors are:
 - .Manpower
 - .Plant machines and equipment
 - .Materials
 - .Land and building

The internal factors are within control of management.

Productivity and Workforce Management

- How to improve Productivity(strategy):
- The following major items need control
 - Materials
 - Machines
 - Manpower
 - Computerization

Productivity and Workforce Management

- Main contributors to productivity improvement:
 - i) Human relations
 - ii) Incentive to workers
 - iii) Awareness about productivity
 - iv) Cost control
 - v) Proper planning
 - vi) Product design

Productivity and Workforce Management