

- A product must fully meet *design requirements* and specifications.
- A product must be manufactured by the most *economical* methods in order to minimize costs.
- *Quality* must be built into the product at each stage, from design to assembly, rather than relying on quality testing after the product is made.
- In a highly competitive environment, production methods must be sufficiently *flexible* so as to respond to changing market demands, types of products, production rates, production quantities, and on-time delivery to the customer.
- New developments in *materials*, *production methods*, and *computer integration* of both technological and managerial activities in a manufacturing organization must constantly be evaluated with a view to their timely and economic implementation.
- Manufacturing activities must be viewed as a large *system*, each part of which is interrelated to others. Such systems can be modeled in order to study the effect of factors such as changes in market demands, product design, material and various other costs, and production methods on product quality and cost.
- The manufacturing organization must constantly strive for higher *productivity*, defined as the optimum use of all its resources: materials, machines, energy, capital, labor, and technology. Output per employee per hour in all phases must be maximized.