

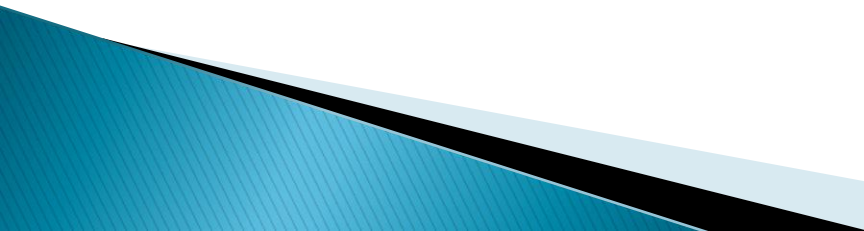
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Semester	V
Subject	Business Operations
Topic	Production planning and control



Production Planning and Control




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Production planning and control is a predetermined process which includes the use of human resource, raw materials, machines etc. PPC is the technique to plan each and every step in a long series of separate operation. It helps to take the right decision at the right time and at the right place to achieve maximum efficiency.

Production Planning and Control

PPC

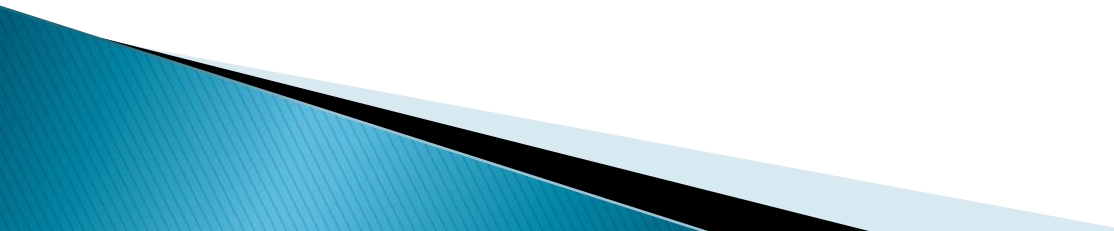


Production Planning: It is the process of forecasting ahead every step in the long process of production, taking them at right time, in the right degree and completing the operations at maximum efficiency.

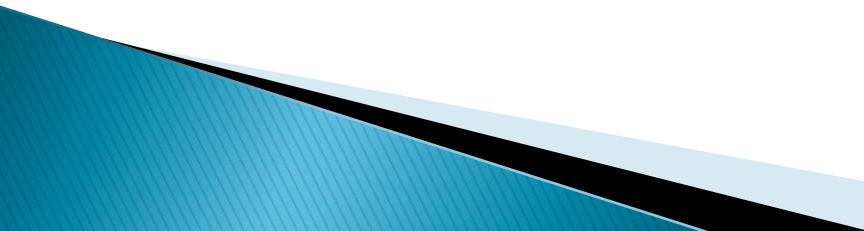
Production Controlling: It is the process of keeping watchful eye on the production flow by utilizing different types of control techniques to achieve optimum performance out of the production system as to achieve overall production planning targets.

It is the nervous system of a production operation.

The primary concern of production ,planning and control is the delivery of products to customers or to inventory stocks according to some predetermined schedule



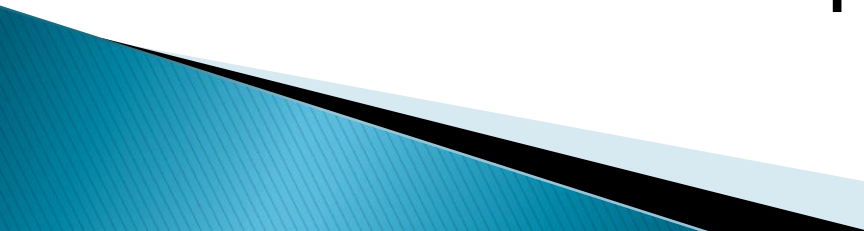
Characteristics

- ▶ Inputs like materials, men and machines are efficiently used
 - ▶ Factors of productions are integrated to use them economically
 - ▶ Division of work is undertaken carefully so that every available element is properly utilised
 - ▶ Work is regulated from the first stage of procuring raw material to the stage of finished goods.
 - ▶ Questions like what, when and how to be manufactured are decided
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Decision Making in PPC

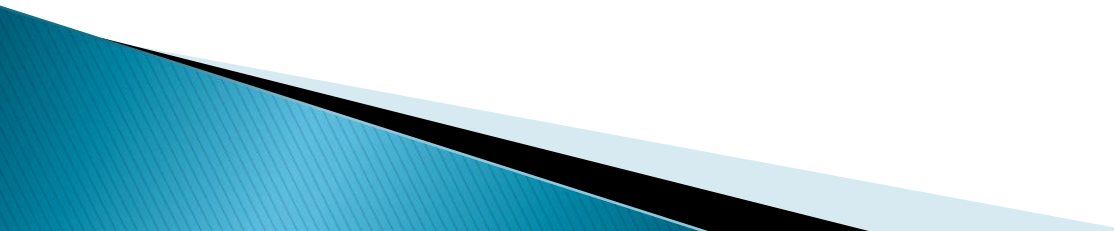
What to produce	→	Product Planning & Development including product design
How to produce	→	Material Planning , Process Planning , Tool equipment planning
Where to produce	→	Facilities planning, Capacity planning, Subcontracting
When to produce	→	Production scheduling , Machine loading
Who will produce	→	Manpower planning
How much to produce	→	Qty Planning, Economic batch size

Objectives of PPC

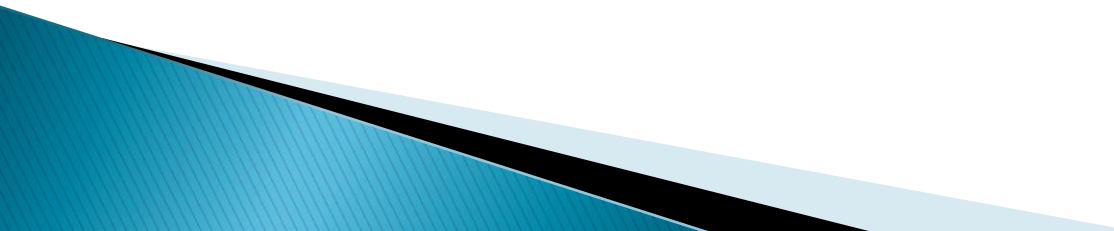
- ▶ Optimum utilization of organizational resources
 - ▶ **Continuous Flow of Production**
 - ▶ **Deliver good quality product at minimum cost**
 - ▶ **Reduce production cycle time**
 - ▶ **Flexibility in production processes**
 - ▶ **Coordination between various departments**
 - ▶ **Optimum Inventory Levels**
 - ▶ **Plan for future requirements**
 - ▶ **Remove bottlenecks of production**
 - ▶ **Customer Satisfaction**
 - ▶ **Production and Employment Stabilization**
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Scope of production, planning and control

Production planning and control encompasses the following areas:

- ▶ Material
 - ▶ Method
 - ▶ Machine and equipment
 - ▶ Manpower
 - ▶ Estimation
 - ▶ Routing
 - ▶ Loading and Scheduling
 - ▶ Dispatching
 - ▶ Expediting
 - ▶ Inspection
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Role of PPC

- ▶ Taking orders from marketing division.
 - ▶ Analyzing the orders & feeling the requirements of customer.
 - ▶ Planning for production.
 - ▶ Cost analysis & lead time.
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Function of PPC

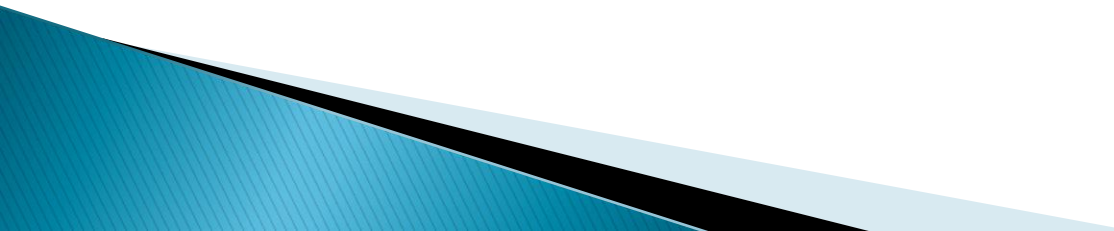
Production Planning

- ▶ Estimating
- ▶ Expediting
- ▶ Inspection
- ▶ Evaluation & Control

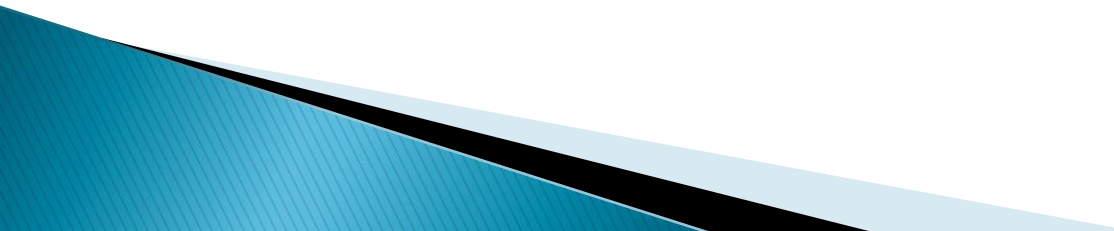
Production Control

- Dispatching
- Routing
- Scheduling
- Loading

Importance/Benefits of PPC

- ▶ Effective utilization of resources
 - ▶ Minimizing the wastage
 - ▶ Proper coordination
 - ▶ Quality products produced
 - ▶ Provide better environment
 - ▶ Estimation of resources
 - ▶ Smooth flow of production
 - ▶ Increases labour productivity
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Drawbacks of PPC

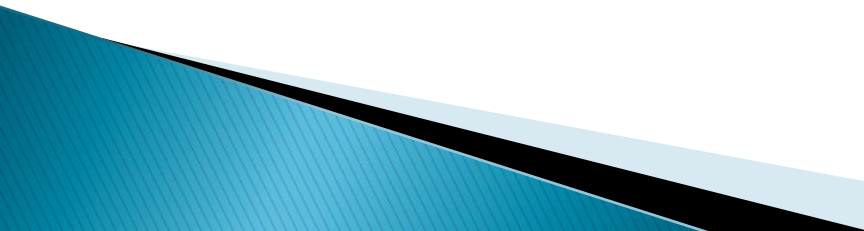
- ▶ Based on assumptions
 - ▶ Rigidity
 - ▶ Time consuming
 - ▶ Costly
 - ▶ Difficult for small firms
 - ▶ Dependence on external factors
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PRODUCTION PLANNING

Production Planning can be referred to as a technique of forecasting every step in the long process of production, taking them at right time and in the right degree and trying to complete operations at the maximum efficiency.

“The planning of industrial operations involves Three considerations, namely, what work shall be done, how the work shall be done and lastly, when the work shall be done.” (by - Kimball)

Objectives of Production Planning


- ▶ Effective utilization of resources
 - ▶ Steady flow of production
 - ▶ Estimate the resources
 - ▶ Ensures optimum inventory
 - ▶ Co ordinates the activities of departments
 - ▶ Minimize the wastages
 - ▶ Improves the labor productivity
 - ▶ Reduces the production cost
- 

PRODUCTION CONTROL

Production control is the process that keeps a watchful eye on the production flow, size of resources along with any deviation from the planned action. It also includes arrangement for the prompt remedy or adjustment in case of any deviation so that the production may run according to the original or revised schedule.

“Production control refers to ensuring that all which occurs is in accordance with the rules established and instructions issued.” (By – Henry Fayol)

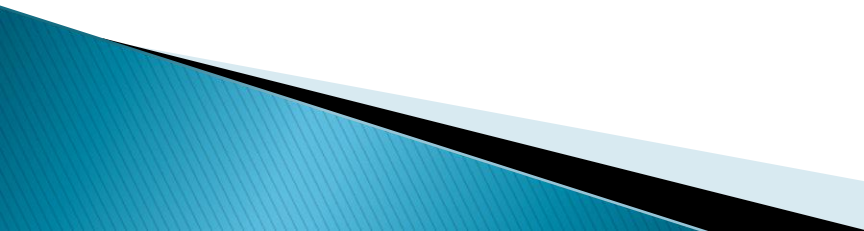
Objectives of Production Control

- ▶ To prepare production schedule in compliance with forecasted demand.
 - ▶ Optimum utilisation of resources to minimize production costs and timely delivery.
 - ▶ To reduce setup costs by determining economic production runs.
 - ▶ Establishment of better coordination among various departments.
 - ▶ To ensure supply of raw materials and when required to eliminate waiting time.
 - ▶ To examine work in progress regularly to ensure quality of product.
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Routing

- ▶ Routing is determining the exact path which will be followed in production. It is the selection of the path from where each unit have to pass before reaching the final stage. The stages from which goods are to pass are decided in this process.
- ▶ “Routing is the specification of the flow sequence of operations and processes to be followed in producing a particular manufacturing lot.”(Alford & Beatty)

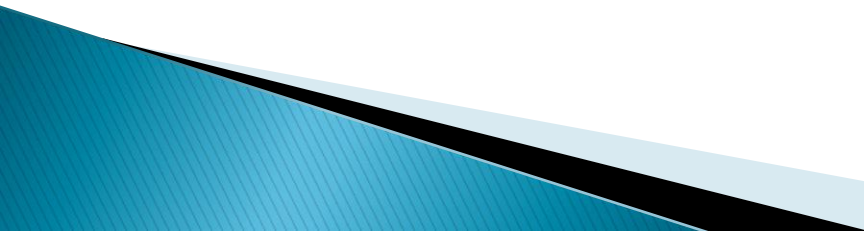
ROUTING PROCEDURE

- Deciding what part to be made or purchased (make or buy)
 - Determining Materials required
 - Determining Manufacturing Operations and Sequences
 - Determining of Lot Sizes
 - Determining of Scrap Factors
 - Analysis of Cost of the Product
 - Preparation of Production Control Forms
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SCHEDULING

- ▶ Scheduling is the determining of time and date when each operation is to be commenced or completed. The time and date of manufacturing each component is fixed in such a way that assembling for final product is not delayed in any way.
- ▶ “The determination of the time that should be required to perform each operation and also the time necessary to perform the entire series, as routed, making allowances for all factors concerned.”(Kimball)

Objectives of Scheduling

- ▶ Minimizing delay and interruption in production process.
 - ▶ Reducing waiting and cost of production.
 - ▶ Providing required inventories on right time at right place.
 - ▶ Maximising the utilisation of available resources.
 - ▶ Balancing the allocation of time among various work centres , floors and departments to reduce or eliminate idle capacity.
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LOADING

The next step is Loading which is execution of the scheduled plan as per the route chalked out. It includes the assignment of the work to the operators at their machines or work places.

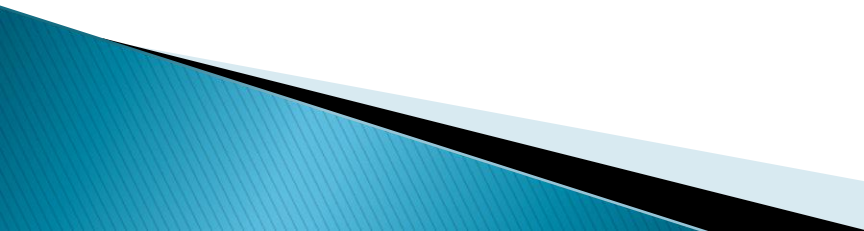
So Loading determines who will do the work.



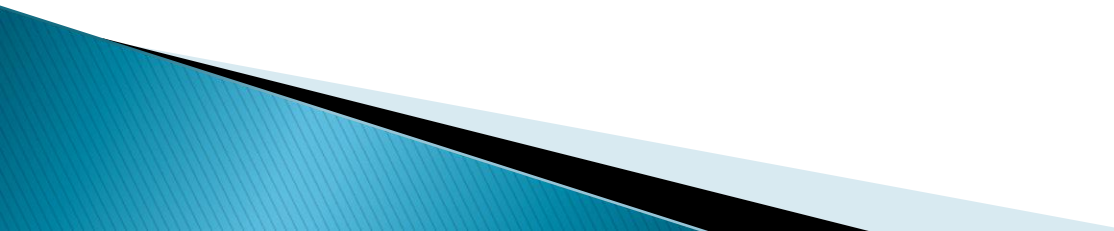
Objectives of Loading

- ▶ Balancing work load among processes and machines.
 - ▶ Fulfill delivery commitments.
 - ▶ Continuous mapping of capacity under utilization.
 - ▶ Plan new orders if there is spare capacity available.
 - ▶ Run feasibility test for production programmes.
 - ▶ Maintain consistency in work flow.
 - ▶ Identify and remove bottlenecks.
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DISPATCHING

- ▶ Dispatching refers to the process of actually ordering the work to be done. It involves putting the plan into effect by issuing orders. It is concerned with starting the process and operation on the basis of route sheets and schedule charts.
 - ▶ “Dispatches put production in effect by releasing and guiding manufacturing order in the sequence previously determined by route sheets and schedules.”(John A. Shubin)
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FOLLOW UP & EXPEDITING

- ▶ Progress may be assessed with the help of routine reports or communication with operating departments. The follow up procedure is used for expediting and checking the progress.
 - ▶ “Follow up or expediting is that branch of production control procedure which regulates the progress of materials and part through the production process.”
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INSPECTION

- Inspection is the process of ensuring whether the products manufactured are of requisite quality or not.
 - Inspection is undertaken both of products and inputs. It is carried on at various levels of production process so that pre-determined standards of quality are achieved.
 - Inspection ensures the maintenance of pre-determined quality of products.
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