

PRODUCTION FUNCTION

1

PAPER

4

TOPIC

PRODUCTION PLANNING

Meaning of production planning.

- After a business has decided on the production management system they will use, they then need to plan the production process.

Outline/Mention/Explain/Discuss aspects that must be considered during production planning e.g. planning, routing, scheduling and loading.



1. Planning

- This process will include the layout of the factory to suit the production system.
- It will determine the flow of materials to optimise the process.
- It must include decisions on the purchasing of the materials, machinery, and equipment.
- The process must include budgets, machines, and the calculation of how many workers will be required to achieve the expected output.

2. Routing

- Routing involves the planning of the sequence in which the operation will take place.
- Management must determine what the best and cheapest way to sequence the production process will be.
- Routing will look at the following questions:
 - What quality and type of raw materials will be used?
 - In what sequence will the manufacturing process take place?

3. Scheduling

- Scheduling involves the timing of the production process.
- It will also prioritise certain jobs and determine which jobs need to be completed before the next one can start.
- Scheduling will consider the following aspects:
 - The routing and loading of both labour and machinery.
 - Calculation of time required to perform each activity in the manufacturing process.

4. Loading

- Loading involves the allocation of every person to a specific task and/or machine.
- It is linked to the output required to fulfil orders, and the prevention of overloading employees and machines.
- The following aspects will be considered during loading:
 - It allocates every person to his/her task and machine.
 - It also indicates which machines are not being used to their full capacity.

Explain/Discuss the advantages of production planning.

- Planning allows businesses to ensure that every machine and worker is used to their full capacity and not left with nothing to do.
- A business can ensure that it has the correct amount of supplies and stock at a given time.
- Planning reduces wastage and unnecessary storage costs.
- Planning will prevent time from being wasted and will increase the number of final products.

PRODUCTION CONTROL

Meaning of production control.

- Production control will control each individual task and action during the production process.
- It will also establish the starting and finishing of each task.

Outline/Mention/Explain/Discuss aspects that must be considered during production control e.g. dispatching, following up, inspection and corrective action.



1. Dispatching

- This stage of the process involves issuing production orders to start production.
- It converts planning into action.
- Dispatch will provide orders for:
 - the movement of materials, tools and equipment to the necessary locations
 - checking the time and costs involved in the process

2. Inspection

- Inspection involves checking the quality of the process and the final product.
- It can be done at regular intervals during the production process, and at the end.
- Inspection methods include the following:
 - random selection and testing of products
 - sampling and testing of products.

3. Follow-up

- During the follow-up process, the business makes sure the scheduling and production systems are running according to plan.
- The follow-up process will evaluate the following aspects:
 - unplanned issues or problems
 - any misunderstandings in terms of job process requirements
 - indicating whether the activities are happening as planned.

4. Corrective action

- Corrective action must involve any adjustments to the planning process.
- Corrective actions can include activities like:
 - service and repairing of machines
 - adjustments on routing, scheduling and loading
 - training of workers and sorting out other staff issues

HEALTH AND SAFETY

Explain the reasons why businesses must manage safety in the workplace.

- Workplace accidents can result in injuries and deaths, and can result in possible financial trouble for the business.
- The publicity of workplace accidents will negatively impact a business' image.
- Regular or serious workplace accidents may even cause investors to withdraw their money and invest it in another company.
- Employees may lose confidence in the business and leave it to join safer companies.

Explain/Discuss the requirements for a safe environment e.g. safety policy, visible warning signs, first-aid kit, safe working environment etc.

- a safety policy
- visible warning signs
- first aid kits
- safe working environment
- precautionary measures when handling machinery.

Explain/Discuss/Recommend precautionary measure that businesses should take when handling machinery.

- Every employee must be familiar with the safety procedures of the business.
- The business must ensure that all machinery and equipment are correctly installed and safe to use.
- All the workers must be properly trained on how to use machinery, and must be informed about the risks when using the machinery.
- Hard hats should always be worn on construction sites by all persons on the site.

Explain the purpose of the Occupational Health and Safety Act.

- Protect the health and safety and welfare of employees.
- Outlines the roles and responsibilities of employers, employees manufacturers and suppliers regarding health and safety in the workplace.

Recommend/Suggest ways in which businesses can comply with the Occupational Health and Safety Act.

- Provide workers with protective gear to protect themselves against potentially dangerous situations.
- Ensure that first aid boxes are readily available at the workplace and in the factory.
- Make fire extinguishers available at the workplace or in the factory. These fire extinguishers need to be serviced regularly.
- Machinery must be maintained at regular intervals and repaired promptly

QUALITY

Define quality control

- the process of ensuring that goods or services are made to consistently high standards
- the inspecting of final products to ensure that it meets the required standards.

Explain Total Quality Management (TQM) as part of quality management system.

- TQM involves every part of the business, and quality is everyone's – including every department and employee – responsibility.
- The main aim of TQM is to improve the quality of products and services to satisfy the needs of customers beyond their expectations.
- It is the responsibility of each employee to take care of his/her quality.
- Machines and equipment are checked regularly.

SABS – South African Bureau of Standards

- Sets and publishes national standards.
- Provides training regarding all aspects of standardisation.
- Provides information on international and national standards
- Promotes design excellence.



ISO – International Organisations of Standardisation

- ISO9000 is a set of internationally recognised standards set for different industries.
- ISO standards are used in many countries all over the world.
- Industries can measure their quality management system against the se international standards.
- Accreditation with ISO acts as a signal to customers that the business takes its quality commitments seriously and continually strives to improve its operations.



Quality Circles

- Quality circles are groups of employees who work in different departments, for example, production, marketing, purchasing, and financial, but who deal directly or indirectly with the same product or service.
- They meet regularly to discuss how quality, efficiency, and productivity could be improved.
- They analyse problems with the production process and brainstorm solutions.
- The ideal size of a quality circle is three to twelve members.
- Quality circles form part of TQM in the business.