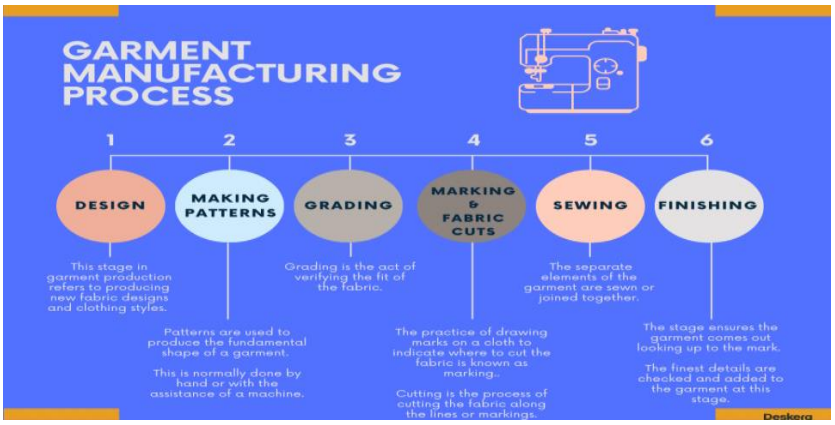
GARMENT PRODUCTION

LEVEL – IV

Based on November, 2023 Curriculum Version II



Module Title: Organizing Garment production process

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Acronyms

JIT……..just in time
SMART…… ……Specific, Measurable, Achievable, Relevant, and Time-Bound
Production Order……PO
Bill of Materials…….BOM
Letter of Credit ……..L/C

INTRODUCTION OF THE MODULE

The module can be delivered in a variety of formats, such as a classroom course, an online course, or a self-paced learning program. The module should be tailored to the specific needs of the audience, such as the size and complexity of their garment production operation.

Organizing the garment production process is essential for producing high-quality garments on time and to budget. A one-unit module on organizing the garment production process can teach participants the skills and knowledge they need to organize their production process in an efficient and effective way.

This module is designed to meet the industry requirement under Garment Production occupational standard, particularly for the unit of competency Organize Garment production process

Module units

- Setting objectives
- production requirements
- Prioritize work and Sequence production
- Organizing team and resources
- production plan and Implementation
- Monitoring work flow

Learning objectives of the Module

At the end of this session, the students will able to:

- Set objectives of Garment production process
- Determine production requirements
- Prioritize work and Sequence production
- Organize team and resources
- Implement variations to production plan
- Implement and monitoring work flow

Module Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described below.
3. Read the information written in the information Sheets
4. Accomplish the Self-checks

Unit one: Setting objectives

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Over view of setting objectives
  - Reflecting objectives
  - Planning Objectives
  - just in time (JIT)
- SMART objectives

This unit will also assist you to attain the learning outcomes stated in the cover page. Specifically, upon completion of this learning guide, you will be able to:

- Plan and Setting objectives
- Stat and clear objectives
- Reflect objectives
- Identify SMART objectives

1.1 Over view of setting objectives

The objectives of garment production can vary depending on the specific needs of the manufacturer and their target market. However, some common objectives include:

i. To produce high-quality garments: that meet customer expectations. This includes using high-quality materials, construction techniques, and quality control procedures.

ii. To produce garments efficiently and cost-effectively: This includes using efficient production processes and minimizing waste.

iii. To produce garments those are sustainable and environmentally friendly: This includes using sustainable materials and production processes, and reducing the environmental impact of the garment production process.

iv. To produce garments that is socially responsible: This includes ensuring that workers are treated fairly and paid fairly, and that the garment production process does not contribute to social problems such as child labor or forced labor.

In addition to these general objectives, garment manufacturers may also have specific objectives related to their target market.

Example, a manufacturer that produces luxury garments may focus on producing garments that are fashionable and high-quality, while a manufacturer that produces budget-friendly garments may focus on producing garments that are affordable and durable.

Garment manufacturers can achieve their objectives by implementing a variety of strategies, such as:

1. Investing in new technologies and equipment. Help to improve efficiency and quality, and reduce costs.
2. Training workers on new skills and techniques. This can improve the quality of the finished product and increase productivity.
3. Implementing sustainable production practices. Reduce the environmental impact of the garment production process and improve the company's reputation.
4. Partnering with ethically responsible suppliers. To ensure that the garment production process is socially responsible. Implementing these and other strategies, garment manufacturers can achieve their objectives and produce high-quality, sustainable, and socially responsible garments.

1.1.1 Reflecting objectives

Production planning and control is a vital part of the garment industry. Accuracy in planning equates to timely shipment of orders, better utilization of operators and guarantees that proper supplies and machineries are available for each style and order.

The main objective of production management is to produce goods and services of the right quality, right quantity, at the right time and at minimum cost. It also tries to improve the efficiency. An efficient organization can face competition effectively.

1.1.2 Planning Objectives

The objectives of planning in garment industry

Production planning and control is a vital part of the garment industry. Accuracy in planning equates to timely shipment of orders, better utilization of operators and guarantees that proper supplies and machineries are available for each style and order

1.1.3 Just in time (JIT)

Just in time (JIT) is a production and inventory management philosophy that aims to minimize inventory and production costs by producing and delivering goods or services at the exact time they are needed. JIT can be used to organize garment production processes

I. **By reducing inventory levels**: JIT aims to reduce inventory levels to the bare minimum. This can be achieved by producing garments in small batches and delivering them to customers as soon as they are finished.
II. **Improving forecasting:** JIT requires accurate forecasting of demand in order to ensure that the right number of garments is produced at the right time.
III. **Streamlining production:** JIT aims to streamline the production process by eliminating waste and inefficiencies. This can be achieved by using lean manufacturing techniques and by closely coordinating with suppliers.

JIT can be a very effective way to improve the efficiency and profitability of garment production processes. However, it is important to note that JIT can be challenging to implement and requires a high level of coordination between all stakeholders involved in the production process.

Examples JIT used to organize garment production processes.

A. **Production scheduling**: JIT production schedules are based on customer orders and demand forecasts. This ensures that garments are only produced when they are needed, which reduces inventory costs.

B. **Material procurement:** JIT material procurement systems ensure that raw materials and components are delivered to the production line just in time to be used. This reduces inventory costs and the risk of obsolescence.

C. **Quality control**: JIT quality control systems focus on preventing defects from occurring in the first place. This can be achieved through training employees on quality control procedures and by using statistical process control (SPC) methods to monitor the production process. Implementing JIT principles and practices, garment manufacturers can reduce inventory costs, improve quality, and increase customer satisfaction.

Benefits of using JIT in garment production

I. **Reduced inventory costs**: JIT helps to reduce inventory costs by reducing the amount of raw materials, work-in-process, and finished goods inventory that needs to be held.
II. **Improved quality**: JIT can help to improve quality by focusing on preventing defects from occurring in the first place.
III. **Increased customer satisfaction**: JIT can help to improve customer satisfaction by ensuring that garments are delivered on time and in the correct quantities.

Challenges associated with using JIT in garment production, such as

A. **Increased complexity:** JIT can be more complex to implement and manage than traditional production methods.
B. **Reduced flexibility:** JIT production schedules are typically very tight, which can make it difficult to respond to unexpected changes in demand.
C. **Increased risk:** JIT production systems are more vulnerable to disruptions, such as supplier problems or equipment failures.

Overall, JIT can be a very effective way to improve the efficiency and profitability of garment production processes. However, it is important to carefully consider the benefits and challenges of JIT before implementing it.

Aim: The main objective of planning in apparel industry is to align material availability, planned Cut date (Cutting start date) and required delivery.

Quick response

Quick response and fast fashion are terms used to describe a retailer's ability to react to market trends and have their supply levels better match the un- predictable demand.

Quality circles: the concept of the quality circle is applicable in all kind of business whether it is a manufacturing or service industry.

Team processes: the process of manufacturing garments involves product design, fabric selection and testing, pattern making, grading, marking, distribution, cutting, folding, sewing, compression or folding, finishing and specifying, dyeing and washing, QC etc.

1.2. SMART objectives

SMART objectives are specific, measurable, achievable, relevant, and time-bound.

SMART objective give an example

SMART Goal Components: Specific: I need to be more productive every day, so I have at least five hours to work on my side hustle every week.

Measurable: I'll track the hours worked on my side hustle every week.

Achievable: I have extra time every day, but spend that time on social media or watching TV

Self-check-1

Part I

True or false:

1. Just-in-time (JIT) production is a production system in which raw materials and supplies are delivered to the factory just in time to be used in the production process.
2. Quick response (QR) production is a production system that is designed to reduce the time it takes to bring a new product to market.
3. Quality circles are groups of employees who meet regularly to identify and solve problems related to quality.
4. Team processes involve teams of employees working together to complete tasks.
5. Benchmarking is the process of comparing the performance of a company to the performance of other companies in the same industry.
6. Reflect objectives are objectives that are aligned with the overall goals of the organization.
7. SMART objectives are specific, measurable, achievable, relevant, and time-bound.

Part II

Multiple choices:

1. Which of the following is NOT an objective of garment production?
   A. To produce high-quality garments that meet customer expectations.
   B. To produce garments efficiently and cost-effectively.
   C. To produce garments those are sustainable and environmentally friendly.
   D. To produce garments those are socially responsible.
   E. To produce garments those are fashionable and stylish.
2. Which of the following is NOT a benefit of just-in-time (JIT) production in the garment industry?
   A. Reduced inventory costs
   B. Improved flexibility
   C. Reduced waste
   D. Increased throughput
   E. Increased costs
3. Which of the following is NOT a type of quality circle in the garment industry?
   A. Process quality circle
   B. Product quality circle
   C. Service quality circle
   D. Management quality circle
   E. Team quality circle
4. Which of the following is NOT a benefit of team processes in the garment industry?
   A. Improved efficiency
   B. Reduced costs

C. Improved quality
D. Increased employee satisfaction
E. Increased conflict

5. Which of the following is NOT a benefit of benchmarking in the garment industry?
   A. Improved performance
   B. Reduced costs
   C. Increased innovation
   D. Increased customer satisfaction
   E. Decreased employee satisfaction
6. Which of the following is NOT a SMART objective for garment production?
   A. Specific
   B. Measurable
   C. Achievable
   D. Relevant
   E. Time-bound

UNIT TWO: PRODUCTION REQUIREMENTS

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Over view Production requirements
- project quantity and quality
- production process
  - overall plan
- Establishing resource
- Maintaining repetitive production runs
- Stock services replenishment

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Identify project quantity and quality
- Identify production process
- Establish overall plan
- Establish required resource
- Maintain repetitive production runs
- Stock services replenishment

2.1 Over view Production requirements

The production requirements in organizing the garment production process vary depending on the size and complexity of the operation. However, there are some general requirements that all garment production companies must meet.

Production planning: The first step in organizing the garment production process is to develop a production plan. This plan should outline the steps that need to be taken to produce the garments, the resources that will be needed, and the timeline for completion. The production plan should be based on customer orders, inventory levels, and production capacity.

Material sourcing: Once the production plan is in place, the next step is to source the materials needed to produce the garments. This includes fabric, trims, and accessories. The materials must be of the highest quality to meet customer expectations and to ensure that the garments are durable and long-lasting.

Cutting: Once the materials have been sourced, the fabric is cut into the individual garment pieces. This can be done manually or using automated cutting machines. The accuracy of the cutting process is critical to ensure that the garments are sewn together correctly.

Sewing: The garment pieces are then sewn together to create the finished garments. This can be done manually or using automated sewing machines. The sewing process must be done carefully to ensure that the garments are of the highest quality.

Finishing: Once the garments have been sewn together, they are finished to give them the desired look and feel. This may involve washing, pressing, and ironing the garments. The finishing process is also important for quality control purposes.

Packing and shipping: garments have been finished; they are packed and shipped to customers. The garments must be packed carefully to prevent damage during shipping.

Factors that garment production companies such as:

I. **Quality control**: Garment production companies must have a quality control system in place to ensure that the garments meet customer expectations. This involves inspecting the garments at various stages of the production process.

II. **Compliance**: Garment production companies must comply with all applicable laws and regulations. This includes regulations related to labor practices, environmental protection, and product safety.

III. **Sustainability**: Garment production companies are increasingly being held accountable for their environmental and social impact. As a result, many companies are adopting sustainable practices in their production processes.

2.2 Project quantity and quality

Start by identifying the quality expectations of the stakeholders. the quality expectations, create a quality checklist and share it with your team. Assign tasks and delegate responsibilities to the right team members.

Start the process of identifying quality requirements and/or standards for the project and its deliverables and documenting how the project will demonstrate compliance with quality requirements.

Quality control: the first step in project quality management. It consists of determining quality requirements for project deliverables and testing, inspecting and reporting to make sure they're met.

Quality Planning: The process of identifying the quality standards relevant to the project and deciding how to meet them.

Quantity is the determined or estimated and quantified resources needed to complete an activity stated in measurable units for control purposes.

2.3 Production process

The garment production process is the process of converting raw materials into finished garments. It is a complex process that involves many different steps, including:

A. **Design**: The first step is to design the garment. This involves creating a sketch or rendering of the garment, as well as developing the technical specifications for the garment, such as the materials to be used and the construction methods.
B. **Pattern making:** Once the design has been finalized, a pattern maker will create a pattern for the garment. The pattern is a template that is used to cut the fabric into the individual garment pieces.
C. **Grading**: the pattern has been created; it needs to be graded to create patterns for all of the different sizes of the garment.

D. **Marker making**: the patterns have been graded; a marker maker will create a marker. The marker is a layout of the garment pieces on the fabric. It is used to maximize the efficiency of the cutting process.
E. **Cutting:** The fabric is then cut into the individual garment pieces using the marker.
F. **Sewing:** The garment pieces are then sewn together to create the finished garment.
G. **Finishing:** Once the garment has been sewn together, it is finished to give it the desired look and feel. This may involve washing, pressing, and ironing the garment.
H. **Quality control:** The garments are then inspected to ensure that they meet the required quality standards.
I. **Packing and shipping:** The garments are then packed and shipped to customers.

The garment production process is a complex one, but it is essential for the production of high-quality garments. By understanding the different steps involved in the process, garment production companies can ensure that they are producing garments that meet customer expectations and comply with all applicable laws and regulations.

Overall plan

Production planning is the act of developing a guide for the design and production of a given product or service. Production planning helps organizations make the production process as efficient as possible. Production planning has the purpose of ensuring all necessary preparation is completed before a production cycle begins, so it can run smoothly. This involves allocating resources effectively so that everything is in place for each stage of production to start.

Stages of production planning: In the manufacturing world, production planning and control are defined by four stages: Routing, Scheduling, Dispatching, and Follow-Up.

In production planning, the components are facility location, facility layout, materials-requirement planning (MRP), and inventory control.

Production Planning in 5 Steps

- Step 1: forecast the demand for product.
- Step 2: determine potential options for production.
- Step 3: choose the option for production that use the combination of resources more effectively.
- Step 4: monitor and control.
- Step 5: Adjust.

Example:

1. Simple production planning and control
2. A factory produces handbags.
3. Management plans the production of a number of bags based on demand forecasts for each design seasonally.
4. Using the right material and resources, such as leather for each item, the bags are made in the factory.

Resource

The resource requirement planThe process of converting the production plan or the master production schedule into the impact on key resources, e.g., man hours, machine hours, storage, standard cost dollars, shipping dollars and inventory levels.

Basic requirement for garment manufacturing: The machinery and equipment required for setting up a garment manufacturing business include sewing machines, cutting machines, ironing and pressing machines, stitching machines, buttonhole and eyelet machines, and other ancillary machines.

Example the resources used in the production of dress

The resources used to produce the dresses could include:

Raw materials: such as fabric (e.g., cotton, silk, and polyester), thread, buttons, zippers, and other embellishments.

Labor: skilled workers, such as designers, pattern makers, cutters, sewers, and quality control personnel. Various activities that are to be involved to produce a particular garment

Garment production is an organized activity consisting of sequential processes such as laying, marking, cutting, stitching, checking, finishing, pressing and packaging. This is a process of converting raw materials into finished products.

2.4 Repetitive production runs

Repetitive manufacturing is the factory process function in which products are produced for rapid production flow. A distinguishing property of repetitive manufacturing is its primary utilization of assembly and/or production lines, specializing in repetitive production.

Continuous process manufacturing is very similar to repetitive manufacturing because it runs 24/7, creates the same or similar products repeatedly, and creates larger order quantities. The key

difference here is that the raw materials used are gases, liquids, powders, and slurries, instead of solid-state components.

2.5 Stock services replenishment

Replenishment is typically triggered when the inventory level hits the reorder point (also called reorder trigger level), a setting from the system. When the reorder point is hit, an order matching the economic order quantity (EOQ) is produced. Again, ERPs typically provide some support for the calculation of the EOQ.

Production replenishment: Overview With production order based replenishment; you can move input products from your warehouse area to your production area based on the quantities required for each production order.

Difference between replenishment and stock: Stock replenishment helps ensure that the right amount of inventory is available for sale at the right time. Its aim is to keep inventory holding costs as low as possible for the company and optimize stock levels to fulfill customer orders, with no overstock or stock outs.

Replenishment method of inventory management: The inventory replenishment meaning, otherwise known as stock replenishment, refers to the process of inventory moving from reserve storage to primary storage, then onto picking locations.

Stock replenishment process: Stock replenishment is the process of ordering and allocating inventory to replace missing products on store shelves. Replenishing stock is a key facet of inventory management which helps to balance inventory levels during a selling period.

Self-check-2

Part I: True or false:

1. Repetitive production runs can lead to decreased efficiency and increased costs.
2. It is important to have a plan for stock services replenishment in order to avoid stock outs.
3. Resources are used in the garment production process to produce garments.
4. The overall plan for the garment production process is to produce high-quality garments that meet customer expectations efficiently and cost-effectively.
5. It is important to assess the production process in garment production regularly to identify areas for improvement.
6. Customer requirements, production capacity, and budget are all important factors to consider when determining project quantity and quality in garment production.

Part II: Multiple choices:

1. Which of the following is NOT a factor to consider when planning for stock services replenishment in garment production?

   A. Demand forecasts
   B. Lead times
   C. Inventory levels
   D. Safety stock
   E. Production capacity

2. What are the benefits of repetitive production runs in garment production?

   A. Increased efficiency
   B. Reduced costs
   C. Improved quality
   D. All of the above

3. Which of the following is NOT a resource that is used in the garment production process?

   A. Materials
   B. Labor
   C. Equipment
   D. Energy
   E. Time

4. What is the overall plan for the garment production process?

A. To produce high-quality garments that meet customer expectations efficiently and cost-effectively.

B. To produce garments those are sustainable and environmentally friendly.

C. To produce garments those are socially responsible.

D. All of the above

5. Which of the following is NOT a factor to consider when assessing the production process in garment production?

   A. Efficiency
   B. Quality
   C. Cost
   D. Customer satisfaction
   E. Sustainability

6. Which of the following are the most important factors to consider when determining project quantity and quality in garment production?

   A. Customer requirements
   B. Production capacity
   C. Budget
   D. All of the above

UNIT THREE: PRIORITIZE WORK AND SEQUENCE OF PRODUCTION

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Work sequence of production
- work Prioritization
- work process and Product documentation

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Prioritize work
- Identify work process steps
- Prepare Production document

3.1 Work sequence of production

Garment production is an organized activity consisting of sequential processes such as laying, marking, cutting, stitching, checking, finishing, pressing and packaging. This is a process of converting raw materials into finished products.

Workflow of the garment industry: Garment production is a Well-organized process that includes various steps this is the process of transforming raw materials into final goods.

1. laying,	2. marking	3. checking,
4. Cutting	8. Seam finishing	12. checking
5. Pinning	9. Trimming	13. packaging
6. Basting	10. Pressing	
7. Stitching	11. Finishing	

All of these techniques are used in sewing over and over no matter what it making. While there is a general order of construction to follow, and some guidelines, there happen to be a lot of exceptions too.

Workflow in production: A production workflow is a step-by-step process that allows to understand how components must come together to produce a finished product. Production workflows are important for training new team members, scaling of business, and doing good work without having to reinvent the wheel.

The 3 basic components of workflow

Every workflow is composed of three common elements: a trigger, the work (or a series of tasks), and the result. Below, we walk through each of these elements to understand and recognize them in your own flow.

Production demand

Meaning of in demand: needed or wanted by many people. Tickets for concerts are always in great demand. Good plumbers are in demand.

i. **Demand for clothing**

There is pent-up demand after two years of lockdowns and cancelled holidays. And data suggests that, outside of Christmas, the change of seasons sees the highest volume of consumers in the market for apparel and accessories.

ii. Meaning of on-demand fashion

On-Demand fashion means that a brand only starts making a garment when an order has been placed; made-to-order and made-to-measure also have those same principles.

Manufactured when needed and in quantities required.

i. Customer request

Full meaning of CIF in garments: Cost, Insurance and Freight (CIF) is a shipping agreement under which the seller is responsible for the cost of the goods in transit, providing insurance with the buyer's name as the beneficiary.

ii. Resource requirement

The fashion and textile industries use vast amounts of natural resources - water, oil and land through out their entire lifecycle, from production of fibers, manufacturing, distribution, consumer use (imagine all that washing, drying, ironing and dry cleaning) to the clothes' end-of-life at disposal.

Basic requirement of garment manufacturing

The machinery and equipment required for setting up a garment manufacturing business include

i. sewing machines
ii. cutting machines
iii. ironing and pressing machines
iv. stitching machines
v. buttonhole and eyelet machines
vi. Other ancillary machines.

Natural resources required for the production

It takes a lot of water to produce textile, plus land to grow cotton and other fibers. It is estimated that the global textile and clothing.

The two main sources of clothes

Clothes are made from many materials, with four main sources: animal (wool, silk), plant (cotton, flax, jute, bamboo), mineral (asbestos, glass fiber), and synthetic (nylon, polyester, acrylic, rayon).

Main areas of manufacturing requirements

- Product safety.
- Workplace health and safety laws.
- Quality standards.
- Environmental protection standards.
- Export controls.
- Data security and protection.
- Employment laws.
- Taxation and company finance regulations.

A. Production requirement

The process of manufacturing garments involves product design, fabric selection and testing, pattern making, grading, marking, distribution, cutting, folding, sewing, compression or folding, finishing and specifying, dyeing and washing.

B. The basic requirement for garment manufacturing

The machinery and equipment required for setting up a garment manufacturing business include sewing machines, cutting machines, ironing and pressing machines, stitching machines, buttonhole and eyelet machines, and other ancillary machines.

C. Lead time or delivery date

While lead time pertains to the overall duration or interval of processing the order until the customer receives it, delivery time is the time it takes for the product or service to be transported to the customer.

D. Lead time in garments industry

A lead time is the latency between the initiation and execution of a process. In apparel industry, lead time is the total amount of time required for completing a product beginning from the date of receiving the order to the shipment of the goods to customer.

E. The ex-factory date

Ex-factory date is the date on which the supplier (here a garment manufacturer) needs to keep the shipment ready and need to move the shipment out from the factory and hand it over to the shipment forwarder.

F. PCD date in garment industry

In garment production, PCD stands for Planned Cut Date. The date at which the bulk fabric cutting is planned to start Merchants or planning department prepares the time and action calendar for each order they received from buyer.

G. ETD and ETA in merchandising

ETD stands for Estimated Time of Delivery (shipment delivery schedule) ETA stands for Estimated Time of Arrival (Shipment arrival schedule) Like in other industries, ETD and ETA terms are often used in the garment industry.

3.2 Work Prioritization

Prioritizing work in the garment industry involves identifying and focusing on key areas that have the most significant impact on production efficiency, quality, and overall business success. Here are some key areas to prioritize in the garment industry:

Production Planning and Scheduling: Efficient production planning and scheduling are crucial for timely delivery and optimal resource utilization. Prioritize creating a well-defined production plan that considers factors such as order quantities, production capacities, material availability, and lead times. Implement effective scheduling techniques to minimize idle time, reduce bottlenecks, and ensure smooth production flow.

Quality Control: Prioritize maintaining high-quality standards throughout the production process. Implement comprehensive quality control measures, including inspections, testing, and adherence to quality assurance protocols. Pay close attention to critical quality checkpoints, such as fabric inspection, cutting accuracy, stitching, and finishing. Invest in training and skill development programs for workers to enhance their understanding of quality requirements.

Supply Chain Management: Efficient supply chain management is essential for timely sourcing of materials, components, and trims. Prioritize establishing strong relationships with reliable suppliers, ensuring timely deliveries, and maintaining optimal inventory levels. Implement effective inventory management techniques to minimize stock outs, reduce lead times, and improve cost efficiency.

Cost Management: Prioritize cost management to ensure profitability and competitiveness. Analyze and optimize costs at various stages of production, including materials, labor, overheads, and wastage. Implement cost control measures such as efficient material utilization, labor productivity improvement initiatives, and effective overhead cost management. Regularly review and analyze cost data to identify areas for cost reduction and process improvement.

Worker Welfare and Training: Prioritize the well-being and skill development of workers. Ensure compliance with labor laws, provide a safe and healthy working environment, and promote fair wages and working conditions. Invest in worker training programs to enhance their skills, productivity, and job satisfaction. Prioritize fostering a positive and inclusive work culture that promotes teamwork, communication, and continuous learning.

Sustainability and Ethical Practices: Prioritize integrating sustainable and ethical practices into garment production. Embrace environmentally friendly production processes, materials, and waste management practices. Ensure compliance with social and ethical standards, including fair

labor practices, worker rights, and responsible sourcing of materials. Implement transparency initiatives to provide visibility into your supply chain and engage in responsible business practices.

Innovation and Technology Adoption: Prioritize staying abreast of industry trends, technological advancements, and innovation opportunities. Embrace automation, digitalization, and data analytics to enhance operational efficiency, reduce errors, and improve decision-making. Explore new technologies, such as 3D prototyping, virtual sampling, and RFID tracking, to streamline processes and enhance product development.

Customer Relationship Management: Prioritize building strong relationships with customers and understanding their requirements. Focus on effective communication, responsiveness, and delivering on customer commitments. Obtain customer feedback to identify areas for improvement and exceed customer expectations in terms of quality, delivery, and service.

By prioritizing these key areas, garment industry businesses can improve productivity, reduce costs, enhance quality, and build a sustainable and competitive advantage in the market.

3.3 Work process and Product documentation

A. Work process

Step-by step guide to garment production:

Pre- Production. Pre-production consist of fabric and trim sourcing, fabric development, pattern making and sampling.

- Fabric and Trim Sourcing.
- Pattern Making.
- Production Planning.
- Cutting Process.
- Manufacturing and Quality Control.
- Delivery.

B. Production Documentation

A garment merchandiser has to maintain below files and documents**:**

- Production File.
- Production Order (PO)
- Bill of Materials (BOM)
- Specification Sheet/Tech Pack.
- Letter of Credit (L/C)
- Order Status Report.
- Check list.
- Packing List.

The document that provides a detailed description of how and where to take garment measurements called

A tech pack is also known as a specification sheet. Tech packs contain detailed information about your garment design like the size measurements, care label instructions, art-work placement, fabric specifications, packing instructions etc. Factories use tech pack to quote price and make samples.

Self-check-3

Part I **Multiple choices:**

1. Which of the following is NOT a factor to consider when preparing documents in the garment production process?

   A. Work sequence
   B. Production demand
   C. Customer request
   D. Resource requirement
   E. Production requirement
   F. Delivery date
   G. Process steps
   H. Profit margin

2. Which of the following documents is NOT typically prepared in the garment production process?

   A. Production plan
   B. Cutting record
   C. Sewing record
   D. Finishing record
   H. Marketing brochure
   E. Quality control record
   F. Shipping record
   G. Sales invoice

3. Which of the following is NOT a benefit of preparing documents in the garment production process?

   A. Improved efficiency
   B. Reduced waste
   C. Improved quality
   D. Increased costs
   E. Reduced risk of production delays
   F. Improved communication and collaboration
   G. Reduced risk of disputes

Part II True or false:

1. It is important to consider all of the following factors when preparing documents in the garment production process: work sequence, production demand, customer request, resource requirement, production requirement, delivery date, and process steps.
2. It is important to prepare documents in the garment production process before the production process begins.

3. Preparing documents in the garment production process can help to improve efficiency, reduce waste, improve quality, reduce the risk of production delays, improve communication and collaboration, and reduce the risk of disputes.

UNIT FOUR: ORGANIZE TEAM AND RESOURCES

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Selecting work team
- facility, equipment and material

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Select work team
- Identify facility, equipment and material

4.1 Selecting Work team

A work team in garment manufacturing is a group of people who work together to produce garments. The team may include people with a variety of skills and experience, such as

- designers
- pattern makers
- cutters,
- sewers
- Finisher

Work teams in garment manufacturing are important because they allow for the efficient production of high-quality garments. By working together, team members can share their knowledge and expertise, and they can help to identify and resolve problems quickly.

Here are some of the benefits of using work teams in garment manufacturing:

A. **Increased productivity**: Work teams can lead to increased productivity because team members can work together to identify and eliminate bottlenecks in the production process.

B. **Improved quality**: Work teams can lead to improved quality because team members can inspect each other's work and identify and correct defects early on.

C. **Reduced costs:** Work teams can lead to reduced costs because team members can share resources and tools, and they can help to reduce waste.

D. **Increased employee satisfaction:** Work teams can lead to increased employee satisfaction because team members have more opportunities to learn and grow, and they have more input into the decision-making process.

To be effective, a work team in garment manufacturing needs to be well-organized and well-managed. The team leader should be responsible for setting goals, delegating tasks, and providing feedback. The team leader should also create an environment where team members feel comfortable sharing their ideas and working together to solve problems.

Here are some tips for managing a work team in garment manufacturing:

1. **Set clear goals and expectations:** Make sure that team members understand the team's goals and expectations. This will help to ensure that everyone is working towards the same objectives.
2. **Delegate tasks effectively:** Delegate tasks to team members based on their skills and experience. This will help to ensure that tasks are completed efficiently and effectively.
3. **Provide regular feedback**: Provide team members with regular feedback on their performance. This will help them to identify areas where they can improve.

4. **Encourage communication and collaboration:** Create an environment where team members feel comfortable communicating and collaborating with each other. This will help the team to work more efficiently and effectively.

4.2 Facility, equipment and material

Garment manufacturing facilities typically include a number of different areas, such as:

Facility

A. Design studio: This is where the initial designs for the garments are created.
B. Pattern making room: This is where the patterns for the garments are created.
C. Cutting room: This is where the fabric is cut out according to the patterns.
D. Sewing room: This is where the garment pieces are sewn together to create the finished garment.
E. Finishing room: This is where the garments are finished with tasks such as pressing, ironing, and attaching labels.

Equipment and materials that are used in garment manufacturing:

i. **Sewing machines:** Sewing machines are used to sew the garment pieces together. There are different types of sewing machines, each designed for a specific purpose.
ii. **Cutting machines:** Cutting machines are used to cut out the fabric according to the patterns. There are different types of cutting machines, including manual cutting machines and automated cutting machines.
iii. **Pressing machines:** Pressing machines are used to press and iron the garments. There are different types of pressing machines, each designed for a specific purpose.
iv. **Fabric:** Fabric is the raw material that is used to make garments. There are many different types of fabric, each with its own unique properties.
v. **Thread**: Thread is used to sew the garment pieces together. There are many different types of thread, each designed for a specific purpose.
vi. **Trims** and accessories: Trims and accessories are used to decorate and embellish garments. There are many different types of trims and accessories, such as buttons, zippers, and appliqués.

In addition to the **equipment and materials** listed above, garment manufacturing **facilities** also need to have a number of other resources, such as:

1. **Work tables**: Work tables are used by team members to assemble and finish the garments.

2. **Storage racks**: Storage racks are used to store fabric, thread, and other materials.
3. **Lighting and ventilation**: Good lighting and ventilation are essential for a safe and healthy work environment.
4. **Safety equipment:** Safety equipment, such as safety glasses and gloves, is used to protect team members from injuries.

   By having the right facilities, equipment, and materials in place, garment manufacturing facilities can produce high-quality garments efficiently and effectively.

Self-check-4

Part I True/false

1. Work teams in garment manufacturing are important because they allow for the efficient production of high-quality garments.
2. Work teams in garment manufacturing can lead to increased productivity.
3. Work teams in garment manufacturing can lead to improved quality.
4. Work teams in garment manufacturing can lead to reduced costs.
5. Work teams in garment manufacturing can lead to increased employee satisfaction.

Part II
Multiple choices

1. Which of the following is NOT a benefit of using work teams in garment production?
   A. Increased productivity
   B. Improved quality
   C. Reduced costs
   D. Increased employee dissatisfaction
2. What is the role of the team leader in a work team in garment manufacturing?
   A. Set goals and expectations
   B. Delegate tasks
   C. Provide feedback
   D. All of the above
3. Which of the following is a tip for managing a work team in garment manufacturing effectively?
   A. Set clear goals and expectations
   B. Delegate tasks effectively
   C. Provide regular feedback
   D. All of the above

UNIT FIVE: IMPLEMENTING PRODUCTION PLAN

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- systematic implementation of production plan
- Re-allocating work
- production efficiency
- Team or individual responsibility

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Coordinate systematic implementation of production plan
- Reallocate work
- Identify and correcting production efficiency
- define Team or individual responsibility

5.1 Systematic implementation of production plan

A systematic implementation of a production plan in the garment production process is essential for ensuring that garments are produced on time, to budget, and to the required quality standards.

Steps involve in the systematic implementation of a production plan in the garment production process:

1. **Develop a production plan**: The production plan should be developed in consultation with all relevant stakeholders, such as the design team, the sales team, and the production team. The production plan should include the following information:
    - The styles and quantities of garments to be produced
    - The production deadlines
    - The resources required to produce the garments
2. **Break down the production plan into smaller tasks**: The production plan should be broken down into smaller tasks, such as pattern making, cutting, sewing, and finishing. This will help to make the plan more manageable and easier to implement.
3. **Assign tasks to team members**: Once the production plan has been broken down into smaller tasks, the tasks should be assigned to team members. The tasks should be assigned based on the team members' skills and experience.
4. **Set deadlines for each task**: Deadlines should be set for each task in the production plan. The deadlines should be realistic and achievable.
5. **Track progress and make adjustments as needed**: The progress of the production plan should be tracked regularly. If there are any delays or problems, adjustments should be made to the plan as needed.

Tips for the systematic implementation of a production plan in the garment production process.

i. **Use a production planning software:** A production planning software can help to automate the production planning process and make it more efficient.

ii. **Communicate with the team:** It is important to communicate the production plan to the team and to keep them updated on any changes. This will help to ensure that everyone is on the same page and that the plan is being followed.

iii. **Be flexible:** Things don't always go according to plan, so it is important to be flexible and to make adjustments as needed.

iv. **Monitor performance:** It is important to monitor the performance of the production plan and to identify any areas where improvement is needed. This will help to ensure that the plan is effective and that it is being implemented in the best possible way.

5.2 Reallocating work

There are a number of reasons why you might need to reallocate work in the garment production process. Some common reasons include:

i. **Changes in demand**: there is a sudden increase or decrease in demand for a particular garment style; you may need to reallocate work to ensure that you are able to meet demand.
ii. **Equipment failures:** a piece of equipment fails; you may need to reallocate work to ensure that production continues.
iii. **Absenteeism**: team members are absent from work, you may need to reallocate work to ensure that production deadlines are met.
iv. **New product launches**: launching a new product line, you may need to reallocate work to ensure that the new products are produced on time.

Reallocating work in the garment production process

The skills and experience of team members: Work should be reallocated to team members who have the necessary skills and experience to complete the task.

A. The production deadlines: Work should be reallocated in a way that ensures that production deadlines are met.
B. The quality of the finished products: Work should be reallocated in a way that ensures the quality of the finished products is not compromised.

Some tips for reallocating work in the garment production process:

I. **Be flexible**: Be prepared to make changes to the production plan as needed.
II. **Communicate with the team:** Explain the changes to the team and why they are necessary.
III. **Provide training and support:** Provide training and support to team members who are new to a particular task.
IV. **Monitor performance**: Monitor the performance of the production plan and make adjustments as needed.

Some examples of how you might reallocate work in the garment production process:

Sudden increase in demand for a particular garment style, you might reallocate work from other garment styles to the garment style that is in high demand. Piece of equipment fails; reallocate the work that was being done on that piece of equipment to other pieces of equipment. Team members are absent from work, you might reallocate their work to other team members.

5.3 Production efficiency

Production efficiency in the garment production process is the ratio of the actual output to the input required to produce that output. It is a measure of how well the resources in the production process are being used.

There are a number of factors that can affect production efficiency in the garment production process, including:

I. **Layout of the factory**: The factory should be laid out in a way that minimizes the movement of materials and workers.

II. **Flow of production:** The flow of production should be smooth and efficient, with minimal bottlenecks.

III. **Equipment and machinery used:** The equipment and machinery used in the production process should be well-maintained and in good working order.

IV. **Skills and experience of the workforce:** The workforce should have the necessary skills and experience to perform their jobs efficiently.

V. **Quality of the raw materials**: The quality of the raw materials used in the production process can also affect production efficiency.

Improve production efficiency in the garment production process, including:

I. **Investing in new technologies:** New technologies can help to automate tasks and reduce waste.

II. **Training the workforce:** Providing training to the workforce can help to improve their skills and knowledge, which can lead to increased productivity.

III. **Improving the working environment**: Improving the working environment can help to boost morale and productivity.

IV. **Implementing process improvement measures**: There are a number of process improvement measures that can be implemented to improve the efficiency of the production process.

5.4 Team or individual responsibility

In a garment production process, there is both team and individual responsibility.

Team responsibility is important because garment production is a complex process that involves many different tasks and steps.

Teams are able to work together to efficiently complete all of the necessary tasks and to achieve the desired results.

Example, a team of sewers may work together to produce a garment, with each team member responsible for a different step in the sewing process.

Individual responsibility is also important because each team member has a specific role to play in the garment production process. Each team member is responsible for completing their assigned tasks to the best of their ability and for meeting the quality standards. For example, an individual sewer is responsible for sewing the garment pieces together correctly and for ensuring that the garment is free of defects.

Examples of team and individual responsibility

Ensuring that the production plan is followed and that deadline are met.

Maintaining quality standards throughout the production process

Identifying and resolving problems quickly and efficiently.

Working together to improve the efficiency of the production process

Individual responsibility:

Completing assigned tasks to the best of their ability

Meeting quality standards

Following safety procedures

Reporting any problems or concerns to their supervisor

Both team and individual responsibility are essential for the successful operation of a garment production process.

Self-check 5

Part I: **True or false:**

1. It is important to communicate the changes to the team when implementing variations to a production plan in the garment production process.
2. It is important to provide training and support to team members who are new to a particular task when implementing variations to a production plan in the garment production process.
3. It is important to monitor the performance of the production plan and make adjustments as needed when implementing variations to a production plan in the garment production process.

PART II: Multiple choices:

1. What is the first step in implementing variations to a production plan in the garment production process?

A. The need for variation.
B. Develop a new production plan.
C. Communicate the changes to the team.
D. Implement the changes to the production

2. Which of the following is NOT a common reason for implementing variations to a production plan in the garment production process?

A. Changes in demand.
B. Equipment failures.
C. Absenteeism.
D. New product launches.
E. Changes in government regulations.

3. What is the most important factor to consider when implementing variations to a production plan in the garment production process?

A. The skills and experience of the team.
B. The production deadlines.
C. The quality of the finished products.
D. All of the above.

UNIT SIX: IMPLEMENTING AND MONITORING WORK FLOW

This learning unit is developed to provide the trainees the necessary information regarding the following content coverage and topics:

- Monitoring work flow.
- Method of work
- Factors of production delay
- Maintaining and reporting documents

This unit will also assist you to attain the learning outcomes stated in the cover page.

Specifically, upon completion of this learning guide, you will be able to:

- Monitor work flow.
- Ensure the implemented methods of work
- Troubleshoot factors of production delay
- Maintain and report recorded documents

6.1 Monitoring Work flow

The workflow in the garment production process typically includes the following steps:

1. **Design:** The design team creates the initial designs for the garments, which by hand or using computer software.
2. **Pattern making:** The pattern makers create patterns for each garment piece. The patterns are used to cut out the fabric that will be used to make the garments.
3. **Grading:** The patterns are graded to create different sizes of the garment.
4. **Marker making**: The marker makers create markers, which are templates that are used to cut out the fabric in the most efficient way possible.
5. **Cutting:** The fabric is cut out according to the markers.
6. **Sewing:** The garment pieces are sewn together to create the finished garment.
7. **Finishing:** The garments are finished with tasks such as pressing, ironing, and attaching labels.
8. **Quality control**: The garments are inspected to ensure that they meet quality standards.
9. **Packaging and shipping:** The garments are packaged and shipped to customers.

The garment production process can be organized in a number of different ways, depending on the size and complexity of the operation. For example, a small garment production operation may have a single team that is responsible for all stages of the process. A larger garment production operation may have multiple teams, each responsible for a specific stage of the process.

The garment production process can also be automated to varying degrees. For example, some garment production operations use automated cutting machines to cut out the fabric. Others use automated sewing machines to sew the garment pieces together.

The workflow in the garment production process is important because it ensures that the garments are produced efficiently and to a high standard of quality. By following a well-defined workflow, garment manufacturers can minimize waste and ensure that their customers receive high-quality garments on time and to budget.

Some additional tips for improving the workflow in the garment production process

1. Use a production planning software to optimize the production process and reduce waste.

2. Implement a lean manufacturing system to identify and eliminate waste from the production process.
3. Use a just-in-time inventory system to reduce the need for warehousing and storage space.
4. Cross-train employees so that they can perform multiple tasks, which can help to reduce bottlenecks and improve flexibility.
5. Provide regular feedback to employees so that they can improve their performance and identify areas where they can improve.

6.2 Methods of work

There are two main methods of work in the garment production process:

A. Progressive bundle system: In the progressive bundle system, each garment is assembled by a single worker or a small team of workers who perform all of the necessary operations. The garment is passed from worker to worker as each operation is completed. This system is typically used in smaller garment production operations.

B. Assembly line system: In the assembly line system, the garment is assembled by a series of workers, each responsible for a single operation. The garment is passed from worker to worker on a conveyor belt. This system is typically used in larger garment production operations.

Both the progressive bundle system and the assembly line system have their own advantages and disadvantages.

Progressive bundle system:

- Advantages:
  - ✓ More flexibility
  - ✓ Easier to train workers
  - ✓ More worker satisfaction
- Disadvantages:
  - ✓ Less efficient
  - ✓ More difficult to control quality
  - ✓ More expensive

Assembly line system:

- Advantages:

- ✓ More efficient
- ✓ Easier to control quality
- ✓ Less expensive

- Disadvantages:
  - ✓ Less flexibility
  - ✓ More difficult to train workers
  - ✓ Less worker satisfaction

The best method of work for a particular garment production operation will depend on a number of factors, such as the size and complexity of the operation, the type of garments being produced, and the budget.

Additional methods of work that are sometimes used in the garment production process:

Teamwork: Teamwork is often used in the garment production process, particularly in smaller operations. Teamwork can help to improve efficiency and quality, and it can also make the work environment more enjoyable for workers.

Automation: Automation is increasingly being used in the garment production process, particularly in larger operations. Automation can help to improve efficiency and quality, and it can also reduce costs.

Just-in-time (JIT) manufacturing: JIT manufacturing is a production system in which raw materials and supplies are delivered to the factory just in time to be used in the production process. JIT manufacturing can help to reduce inventory costs and improve efficiency.

The garment production process is constantly evolving, and new methods of work are being developed all the time. Garment manufacturers are constantly looking for ways to improve efficiency, quality, and reduce costs. By adopting new methods of work, garment manufacturers can remain competitive and produce high-quality garments that meet the needs of their customers.

6.3 Factors of production delay

There are a number of factors that can cause production delays in the garment production process. Some of the most common factors include:

1. **Changes in demand**: sudden increase in demand for a particular garment style, it can be difficult for garment manufacturers to keep up with demand. This can lead to production delays.
2. **Equipment failures:** piece of equipment fails; it can cause a production delay.
3. **Absenteeism:** team members are absent from work, it can cause a production delay.

4. **New product launches:** When launching a new product line, it can take time to get the production process up and running. This can lead to production delays.
5. **Poor planning and scheduling**: the production process is not well-planned and scheduled, it can lead to production delays.
6. **Quality problems**: garments do not meet quality standards; they may need to be remade. This can lead to production delays.
7. **Supply chain disruptions**: there are disruptions in the supply chain, such as delays in the delivery of raw materials or supplies, it can lead to production delays.
8. **Natural disasters**: Natural disasters, such as floods, earthquakes, and hurricanes, can also cause production delays.

Garment manufacturers can take a number of steps to reduce the risk of production delays, including:

A. **Have a contingency plan**: Have a contingency plan in place in case of equipment failures, absenteeism, or other unexpected events.
B. **Plan carefully:** Carefully plan and schedule the production process.
C. **Set realistic deadlines:** Set realistic deadlines for the production process.
D. **Monitor progress:** Monitor the progress of the production process and make adjustments as needed.
E. **Communicate effectively**: Communicate effectively with team members and suppliers.
F. **Have a good relationship with suppliers:** Have a good relationship with suppliers so that you can get priority treatment in the event of supply chain disruptions.
G. **Insure against natural disasters:** Insure against natural disasters to protect
Business from financial losses. Taking these and other steps, garment manufacturers can reduce the risk of production delays and ensure that they are able to meet their customers' needs.

6.4 Maintaining and reporting documents

Recorded documents in the garment production process are documents that are used to record information about the production process, such as the following:

I. **Production plans:** Production plans outline the steps that need to be taken to produce a garment, including the materials required, the sequence of operations, and the deadlines for each operation.

II. **Cutting records:** Cutting records track the fabric that has been cut out for production, including the garment style, size, and quantity.

III. **Sewing records**: Sewing records track the garments that have been sewn together, including the garment style, size, and quantity.

IV. **Finishing records**: Finishing records track the garments that have been finished, such as pressing, ironing, and attaching labels.

V. **Quality control records**: Quality control records track the results of quality inspections.

VI. **Shipping records:** Shipping records track the garments that have been shipped to customers.

Recorded documents are important for a number of reasons. They can be used to:

Track the progress of the production process and identify any potential problems.

Ensure that garments are produced to the required quality standards.

Maintain accurate inventory records.

Resolve disputes with customers or suppliers.

Meet regulatory requirements.

Recorded documents can be kept in a variety of ways, such as in paper form, electronic form, or a combination of both. The best way to keep recorded documents will depend on the size and complexity of the garment production operation.

Tips for managing recorded documents in the garment production process:

Develop a document management system: Develop a document management system to organize and store recorded documents. This system should be easy to use and accessible to authorized users.

Establish document retention policies: Establish document retention policies to determine how long to keep recorded documents. These policies should be based on regulatory requirements and the business needs of the garment manufacturer.

Self-check-6

Part I True or false:

1. It is important to communicate the workflow to the team and to train the team on the workflow before implementing the workflow.
2. It is important to monitor the performance of the workflow and to make adjustments as needed.
3. A well-defined workflow can help to improve efficiency, reduce waste, improve quality, and reduce the risk of production delays.

Part II Multiple choices:

1. Which of the following is NOT a step in implementing and monitoring a workflow in the garment production process?

A. Design the workflow.
B. Communicate the workflow to the team.
C. Train the team on the workflow.
D. Implement the workflow.
E. Monitor the performance of the workflow.

2. Which of the following is NOT a benefit of having a well-defined workflow in the garment production process?

A. Improved efficiency
B. Reduced waste
C. Improved quality
D. Increased costs
E. Reduced risk of production delays

3. Which of the following is NOT a tip for monitoring the performance of a workflow in the garment production process?

A. Track the progress of the production process.
B. Identify any potential problems.
C. Make adjustments to the workflow as needed.
D. Collect feedback from the team.
E. Ignore the feedback from the team.

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