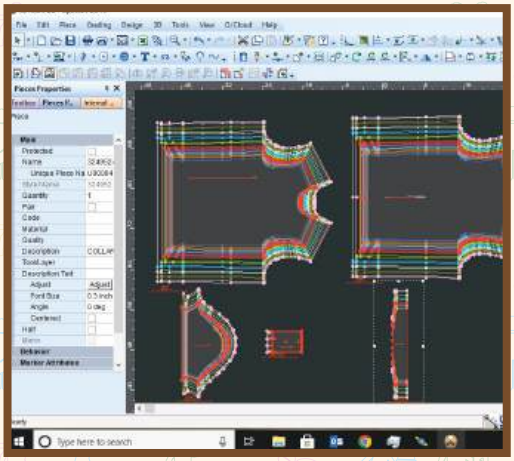
Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

Facilitator Guide



Sector
Apparel

Sub-Sector
Apparel, Made-Ups & Home Furnishing

Occupation
Pattern Making

Reference ID: AMH/Q1101, Version 4.0
NSQF level: 5

Advanced Pattern Maker (CAD/CAM)

Published by

Apparel, Made-Ups & Home Furnishing Sector Skill Council

Address: Flat No. A-312 to A-323, 3rd Floor, Somdatt Chamber-1,
Bhikaji Cama Place, Africa Avenue, New Delhi-110066

Email: info@sscamh.com

Website: www.sscamh.com

Phone: (+91) 011 - 40160600

This book is sponsored by Apparel, Made-Ups & Home Furnishing Sector Skill Council

Printed in India by AMHSSC

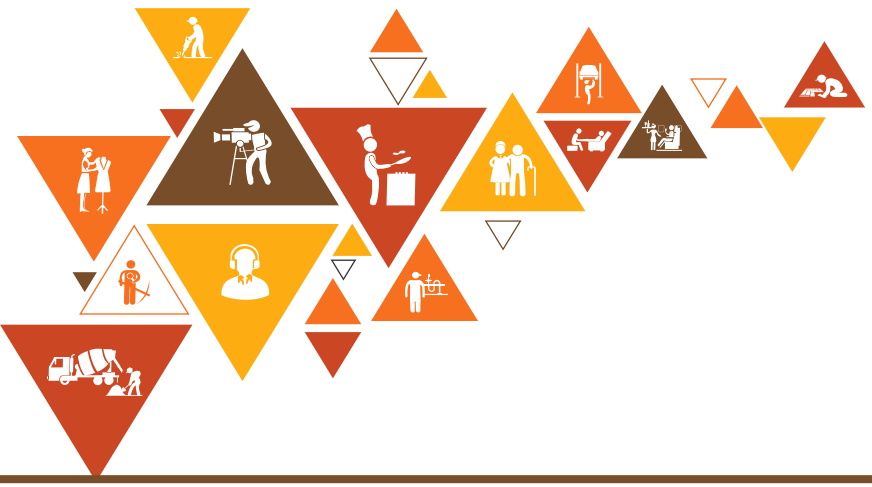
Under Creative Commons License:

Attribution-ShareAlike: CC BY-SA

This license lets others remix, tweak, and build upon your work even for commercial purposes, as long as they credit you and license their new creations under the identical terms. This license is often compared to "copyleft" free and open-source software licenses. All new works based on yours will carry the same license, so any derivatives will also allow commercial use. This is the license used by Wikipedia and is recommended for materials that would benefit from incorporating content from Wikipedia and similarly licensed projects.

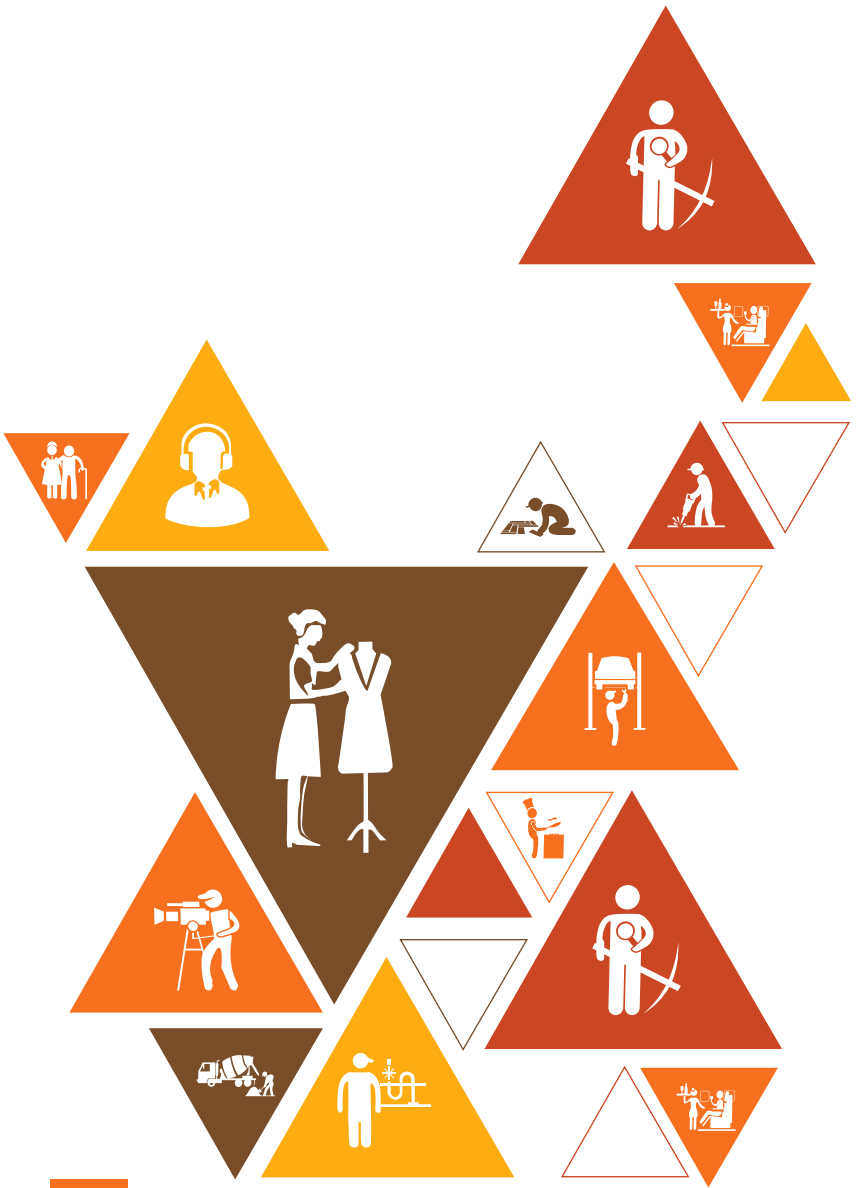
Disclaimer

The information contained herein has been obtained from various reliable sources. Apparel, Made-Ups & Home Furnishing Sector Skill Council disclaims all warranties to the accuracy, completeness or adequacy of such information. Apparel, Made-Ups & Home Furnishing Sector Skill Council shall have no liability for errors, omissions, or inadequacies, in the information contained herein, or for interpretations thereof. Every effort has been made to trace the owners of the copyright material included in the book. The publishers would be grateful for any omissions brought to their notice for acknowledgements in future editions of the book. No entity in Apparel, Made-Ups & Home Furnishing Sector Skill Council shall be responsible for any loss whatsoever, sustained by any person who relies on this material. All pictures shown are for illustration purpose only. The coded boxes in the book called Quick Response Code (QR code) will help to access the e-resources linked to the content. These QR codes are generated from links and YouTube video resources available on Internet for knowledge enhancement on the topic and are not created by AMHSSC. Embedding of the link or QR code in the content should not be assumed endorsement of any kind. Apparel, Made-Ups & Home Furnishing Sector Skill Council is not responsible for the views expressed or content or reliability of linked videos. AMHSSC cannot guarantee that these links/QR codes will work all the time as we do not have control over availability of the linked pages.



> Skill development of the new generation is a national need and is the foundation of Aatmnirbhar Bharat

Shri Narendra Modi
Prime Minister of India



Acknowledgements

Apparel, Made-ups & Home Furnishing Sector Skill Council would like to express its gratitude to all the individuals and institutions who contributed in different ways towards the preparation of this "Facilitator Guide". Without their contribution it could not have been completed. Special thanks are extended to those who collaborated in the preparation of its different modules. Sincere appreciation is also extended to all who provided peer review for these modules.

The preparation of this facilitator guide would not have been possible without the Apparel Industry's support. Industry feedback has been extremely encouraging from inception to conclusion and it is with their input that we have tried to bridge the skill gaps existing today in the industry.

This facilitator guide is dedicated to the aspiring youth who desire to achieve special skills which will be a lifelong asset for their future endeavours.

About this Guide

This Facilitator Guide is designed for providing skill training and /or upgrading the knowledge level of the Participants to take up the job of an "Advanced Pattern Maker(CAD/CAM) " in the Management and Entrepreneurship Sector.

This Facilitator Guide is designed based on the Qualification Pack (QP) under the National Skill Qualification framework (NSQF) and it comprises of the following National Occupational Standards (NOS)/topics and additional topics.

1. AMH/N1101.Pattern development through CAD/CAM
2. AMH/N1102.Maintenance of work area, machinery, tools and equipment
3. AMH/N0620. Promote and sustain safety, health, and security in workplace, while fostering Gender and Persons with Disabilities (PwD) Sensitization
4. DGT/VSQ/N0102: Employability Skills (60 Hours)

Symbols Used

Ask

Explain

Elaborate

Notes

Objectives

Do

Demonstrate

Activity

Team Activity

Facilitation Notes

Practical

Say

Resources

Example

Summary

Role Play

Learning Outcomes

Exercise

Table of Contents

S. No	Modules and Units	Page No
1.	Introduction and Orientation to Advanced Pattern Maker (Bridge Module)	1
	Unit 1.1 - Overview of the Apparel Industry and the Role of an Advanced Pattern Maker	3
2.	Prepare to Develop Pattern Through (CAD/CAM) (AMH/N1101)	9
	Unit 2.1 - Information Flow and Planning	11
	Unit 2.2 - Pattern Development Using CAD	14
3.	Develop the Pattern Through (CAD/CAM) (AMH/N1101)	19
	Unit 3.1 - Pattern Development and Preparation	21
	Unit 3.2 - Marker Efficiency and Cutting Execution	24
4.	Take the Print-out Through (CAD/CAM) (AMH/N1101)	29
	Unit 4.1 - Processes Related to System Closure and Output Delivery	31
5.	Maintain Work Area, Machinery, Tools and Equipment (AMH/N1102)	35
	Unit 5.1 - Safe and Efficient Use of Tools and Equipment	37
6.	Promote and Sustain Safety, Health, and Security in Workplace, While Fostering Gender and Persons with Disabilities (PwD) Sensitisation (AMH/N0620)	41
	Unit 6.1 - Health, Safety and Environmental Practices	43
	Unit 6.2 - Work Operations and Quality Compliance	47
7.	Employability Skills (DGT/VSQ/N0102) (60 Hours)	53

Employability Skills is available at the following location:

https://www.skillindiadigital.gov.in/content/list

Scan the QR code below to access the ebook

S. No	Modules and Units	Page No
8.	Annexures	55
	Annexure I: Training Delivery Plan	56
	Annexure II: Assessment Criteria	81
	Annexure III: List of QR Codes Used in PHB	85

Skill India
कौशल भारत-कुशल भारत

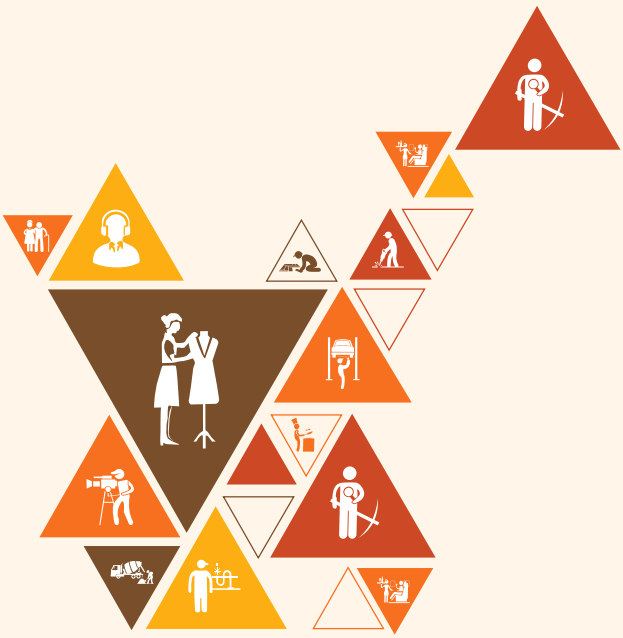
सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

1. Introduction and Orientation to Advanced Pattern Maker

Unit 1.1 - Overview of the Apparel Industry and the Role of an Advanced Pattern Maker



Bridge Module

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Describe the size and scope of the apparel industry.
2. Describe various employment opportunities for a 'Advanced Pattern Maker' in the apparel industry.
3. Explain roles and responsibilities of a 'Advanced Pattern Maker'.
4. Describe the apparel production process and the role that the 'Advanced Pattern Maker' plays in the process.

Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker

Unit Objectives

By the end of this unit, the participants will be able to:

1. Discuss the size and scope of the apparel industry.
2. Discuss various employment opportunities for an Advanced Pattern Maker in the apparel industry.
3. Describe the roles and responsibilities of an Advanced Pattern Maker.
4. Examine the apparel production process and elaborate on the role of an Advanced Pattern Maker in it.

Resources to be Used

Participant handbook, notepad and pen, whiteboard and markers, presentation slides, an overhead projector or large screen, a computer or laptop with internet connection, and optionally, fabric swatches, sewing samples, images/videos of garment factories, measuring tools (tape, scale), and examples of common garment defects.

Do

- Greet participants warmly and introduce yourself by sharing your professional background in apparel, pattern making, or garment production.
- Clearly state the unit objectives and explain what participants will learn.
- Ensure everyone has their handbook, notepad, and pen for note-taking.
- Check all equipment (whiteboard, laptop, and projector) is working properly.
- Arrange seating for clear visibility of slides and easy interaction.
- Invite participants to introduce themselves and share their familiarity with tailoring, stitching, or apparel industry work.
- Inform participants that the session will include interactive activities such as discussions, role-play, demonstrations, and group exercises.
- Maintain an engaging pace with explanations balanced with participant inputs.
- Encourage participants to share real-life experiences related to garment making, pattern creation, or tailoring.
- Conclude the session by summarising key points and motivating participants to see the Advanced Pattern Maker as a vital role in the apparel industry.

Say

- Welcome to today's session on the Overview of the Apparel Industry and the Role of the Advanced Pattern Maker.
- By the end of this session, you will understand the size and importance of the apparel industry, the role of an Advanced Pattern Maker, and the career opportunities in this field.
- We will explore how the apparel industry provides employment to millions and how pattern making ensures garments are produced efficiently and accurately.
- An Advanced Pattern Maker plays an important role in creating precise garment patterns, guiding cutting and stitching, and ensuring design specifications are met.
- I look forward to discussing how this role ensures quality, efficiency, and customer satisfaction in garment production.

Ask

- Can anyone share what comes to their mind when they hear "apparel industry"?
- Why do you think accurate pattern making is important in garment production?
- What responsibilities do you think an Advanced Pattern Maker has in a garment factory?
- What personal qualities make someone suitable for working as an Advanced Pattern Maker?
- How do you see this role creating opportunities for career growth in the apparel sector?

Activity

1. **Name of the Activity:** Patterns in Daily Life
2. **Objective:** To help participants introduce themselves and connect personal experiences with garment patterns and quality.
3. **Type of activity:** Group activity
4. **Resources:** Participant handbook, notepad, pen, fabric samples or stitched items (if available).
5. **Duration of the activity:** 15 minutes
6. **Instructions:**
    - Ask each participant to introduce themselves by sharing their name, background, and one garment or clothing item they like (shirt, saree, kurta, jeans, etc.).
    - Invite them to share if they ever noticed defects in clothes (wrong size, loose thread, incorrect design, skipped stitches).
    - Encourage them to think about who creates the patterns that help prevent such defects in garment factories.
    - If available, show fabric samples or garments to connect their stories with the role of Advanced Pattern Makers.
    - Summarise by highlighting that Advanced Pattern Makers are responsible for ensuring garments are designed and cut accurately for quality production.
7. **Outcome:** Participants feel comfortable, connect personal experiences with pattern making, and recognise the importance of the Advanced Pattern Maker role.

Elaborate

- The apparel industry is one of the largest employers globally, covering tailoring shops, garment factories, export houses, and fashion companies.
- An Advanced Pattern Maker develops precise patterns that guide cutting and stitching in garment production.
- They ensure garment designs are feasible, accurate, and produce minimal defects.
- Patterns are tested through sample garments before full production begins.
- Career growth can start from assistant → pattern maker → senior pattern maker → production supervisor → design manager.
- Tools used include pattern paper, measuring tapes, CAD/CAM software, rulers, and markers.
- Accurate pattern making reduces wastage, saves time, and improves garment fit.
- Maintaining health and safety is important while handling tools and fabrics.
- The role demands patience, observation, and attention to detail.
- This career provides opportunities in domestic factories, export industries, and international fashion brands.

Explain

- The apparel industry produces clothing for domestic and international markets, making it a fast-growing sector.
- Advanced Pattern Makers ensure design accuracy, garment fit, and efficient production workflow.
- Their duties include pattern drafting, sample creation, corrections, and collaboration with cutting and sewing teams.
- Skills like precision, observation, and responsibility are key to success.
- Pattern Makers work closely with designers, supervisors, and production managers.
- Good pattern making prevents defects and reduces production costs.
- Health and safety considerations include handling sharp tools, fabrics, and CAD equipment.
- The role provides employment in both small tailoring units and large garment factories.
- With experience, Pattern Makers can progress to supervisory and managerial positions.
- This role offers stability, skill-based growth, and industry recognition.

Demonstrate

Participants will observe sample patterns, stitched garments, or images showing defects caused by incorrect patterns (wrong size, mismatched panels, uneven stitching). Using measurement tools, rulers, or CAD software, they will understand how Advanced Pattern Makers ensure accurate patterns and reduce defects before production begins. Slides or videos can demonstrate pattern drafting, adjustments, and checking techniques.

Role Play

1. **Name of the Roleplay:** Pattern Accuracy Check
2. **Objective of the Roleplay:** To practice identifying garment defects and reporting them properly.
3. **Resources:** Participant handbook, pen, sample patterns or images, fabric samples..
4. **Time Duration:** 20 minutes
5. **Instructions:**
   - Present a scenario where a pattern has errors (incorrect measurements, asymmetrical panels, misaligned designs).
   - Divide participants into groups; one acts as Advanced Pattern Maker, others act as sewing operators or supervisors.
   - Ask groups to roleplay checking patterns, suggesting corrections, and communicating issues to supervisors.
   - Facilitate discussion on how accurate pattern making saves time, reduces defects, and improves garment quality.
   - Summarise with lessons on precision, teamwork, and quality assurance in pattern making..
6. **Outcome:** Participants understand the importance of accurate patterns and develop problem-solving skills for garment production.

Notes for Facilitation

- Keep the session practical by showing patterns, garment samples, images, and pattern making tools.
- Use visual aids to explain the size and scope of the apparel industry and the role of Advanced Pattern Makers.
- Encourage participants to share local tailoring or factory examples.
- Maintain a clear pace, checking understanding regularly.
- Summarise each activity with key lessons to reinforce learning objectives, including the ice-breaker activity.

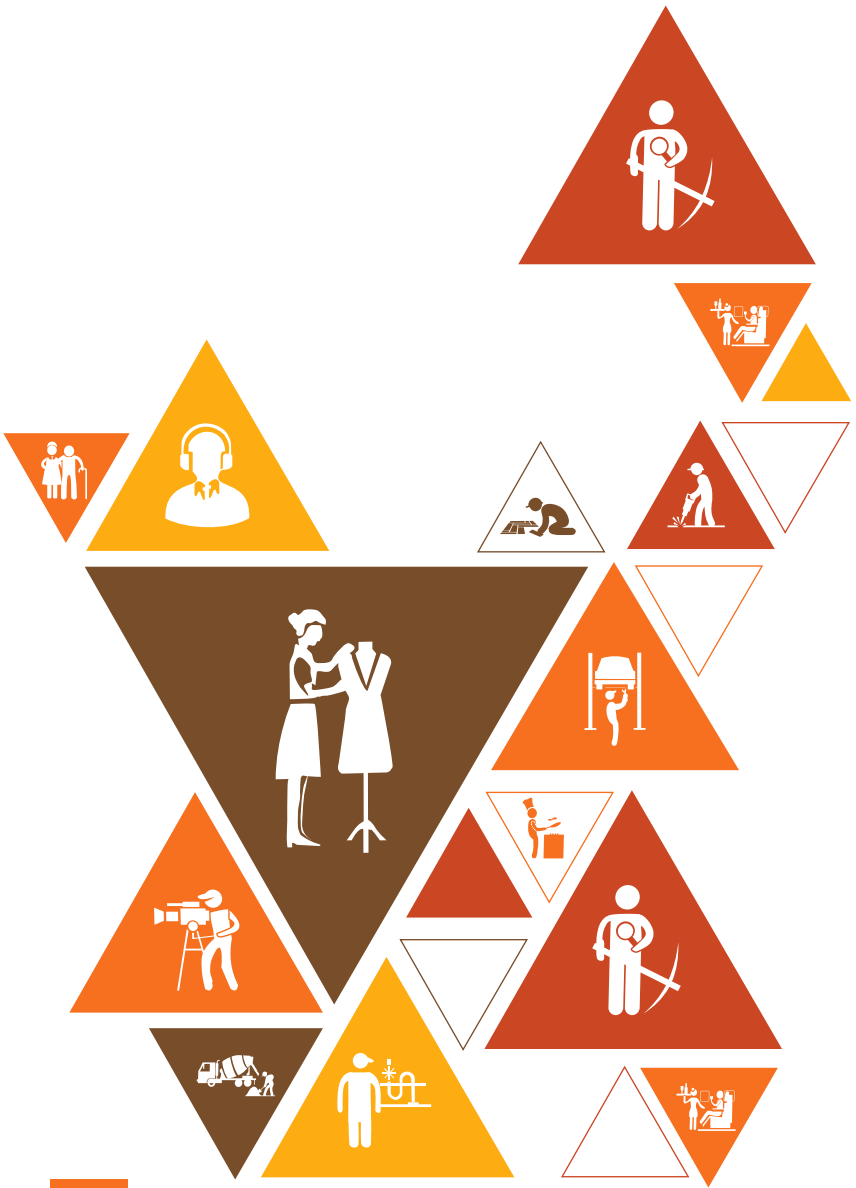
Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c. Translating design concepts into accurate patterns
2. c. Marketing Analysis
3. b. It provides large-scale employment across rural and urban areas
4. b. Computer-Aided Design/Computer-Aided Manufacturing
5. c. Preparing prototype patterns for trial garments

Answer the following questions briefly.

1. Refer to Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker Topic 1.1.1 Apparel Manufacturing Sector
2. Refer to Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker Topic 1.1.4 Roles and Responsibilities of an Advanced Pattern Maker
3. Refer to Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker Topic 1.1.2 Apparel Production Process and Role of the Advanced Pattern Maker
4. Refer to Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker Topic 1.1.3 Employment Opportunities for Advanced Pattern Makers
5. Refer to Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker Topic 1.1.2 Apparel Production Process and Role of the Advanced Pattern Maker



Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

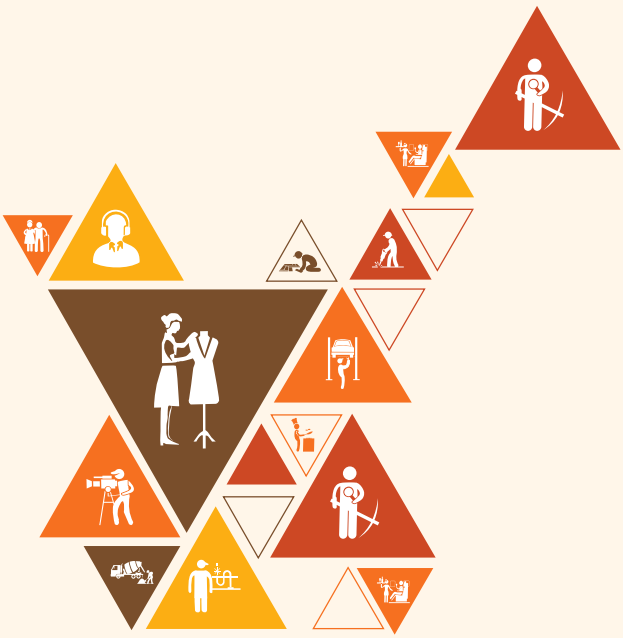
N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

2. Prepare to Develop Pattern Through (CAD/CAM)

Unit 2.1 - Information Flow and Planning

Unit 2.2 - Pattern Development Using CAD



AMH/N1101

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Explain the spec sheet.
2. Coordinate with merchandiser to ensure clarity of information and resolve all misinterpretations.
3. Identify the tools and equipment required to develop the pattern.
4. Set the CAD machine.
5. Take the measurement from the specs sheet or download from the computer.
6. Draft the pattern on the CAD software as per specification given or digitise the manual pattern on the CAD software, if applicable.
7. Adjust the pattern specifications as per the standard and allowances required.
8. Check the developed pattern with the spec sheet.
9. Make changes wherever required.
10. Analyse the bill of material.

Unit 2.1: Information Flow and Planning

Unit Objectives

By the end of this unit, the participants will be able to:

1. Describe the purpose and components of a spec sheet.
2. Coordinate with the merchandiser to clarify details and resolve misinterpretations.
3. Identify the tools and equipment needed for pattern development.
4. Analyse the bill of material to understand required components.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, computer or laptop with internet, sample spec sheets, images/videos of garment production, sample bills of materials, pattern development tools (measuring tapes, rulers, markers, CAD/CAM samples), and examples of misinterpretation scenarios.

Do

- Greet participants and introduce the importance of proper information flow and planning in garment production.
- Present the unit objectives clearly to outline the purpose of spec sheets, coordination, and resource planning.
- Ensure participants have handbooks, pens, and notebooks for note-taking.
- Check setup of projector, slides, sample spec sheets, and tools before the session.
- Arrange seating so participants can view demonstrations and engage in discussions.
- Explain that the session will include interactive discussions, demonstrations, and practical exercises.
- Relate theoretical concepts to participants' experiences with pattern development and material planning.
- Invite participants to share any experiences of miscommunication or errors in production planning.
- Summarise key points after each section to ensure understanding.
- Conclude with a recap, linking accurate information flow, coordination, and resource planning to efficiency and quality in pattern development.

Say

- Welcome to today's session on Information Flow and Planning in garment production.
- Accurate information and proper planning are essential for producing garments efficiently and with quality.
- In this unit, we will learn about spec sheets, coordination with merchandisers, and analysing bills of material.

- We will also cover identifying the tools and equipment needed for pattern development.
- By the end of this session, you will be able to plan your work effectively and reduce errors in production.

Ask

- Why is a spec sheet important in garment production?
- What are the key components you would expect in a spec sheet?
- How can coordinating with a merchandiser prevent mistakes in pattern development?
- What tools and equipment are necessary for accurate pattern making?
- How can analysing the bill of material help in preparing for production?
- Have you experienced any errors caused by miscommunication or missing information?
- How does proper planning save time and resources?
- Can you give an example of how inaccurate information affected workflow or quality?

Elaborate

- A spec sheet contains garment specifications, including measurements, materials, and finishing details.
- Clear communication with the merchandiser ensures instructions are understood and implemented correctly.
- Pattern development requires specific tools like measuring tapes, rulers, markers, CAD/CAM software, and cutting tools.
- Analysing the bill of material helps identify all required components and quantities for production.
- Correct interpretation of spec sheets and BOM reduces errors, wastage, and rework.
- Coordination ensures production meets quality standards and deadlines.
- Planning helps allocate resources efficiently, including tools, materials, and manpower.
- Early identification of missing or unclear information prevents delays in workflow.
- Documenting decisions and clarifications ensures traceability for future reference.
- Efficient information flow and planning support accurate pattern development, smooth production, and consistent quality.

Explain

- Spec sheets provide all details about garment design, sizes, materials, stitching, and finishing.
- Clarifying doubts with the merchandiser prevents misinterpretations and costly mistakes.
- Identifying the right tools and equipment ensures precision in pattern development.
- The bill of material lists all raw materials, components, and quantities required.
- Analysing BOM helps anticipate material requirements and avoids shortages or excess.
- Coordination and planning streamline workflow and improve productivity.
- Proper information flow ensures quality control from design to finished product.

- Accurate planning reduces production errors, resource wastage, and delays.
- Documentation supports accountability and repeatability in production processes.
- Overall, information flow and planning are critical for efficiency, quality, and timely delivery in the apparel industry.

Demonstrate

Participants will be able to read and interpret a sample spec sheet, coordinate with a mock merchandiser to clarify unclear instructions, and identify and use the correct tools for pattern development. They will also be able to analyse a sample bill of material to plan components and quantities. Through observation, participants will understand how proper information flow and planning support efficient and accurate garment production.

Activity

1. **Name of the Activity:** Spec Sheet and BOM Planning
2. **Objective of the activity:** To train participants in interpreting spec sheets, coordinating with merchandisers, identifying tools, and analysing bills of material.
3. **Resources:** Sample spec sheets, BOM documents, pattern-making tools, pens, notebooks, images of garment samples.
4. **Time Duration:** 20 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Provide each group with a sample spec sheet and BOM.
   - Ask participants to interpret the specifications and identify the tools and materials needed.
   - Practice clarifying instructions with a mock merchandiser (facilitator or peer).
   - Groups discuss findings and plan the sequence of tasks based on the BOM.
   - Facilitator provides feedback on accuracy, clarity, and planning.
6. **Outcome:** Participants will be able to interpret spec sheets, coordinate effectively, select tools, and analyse BOM for smooth pattern development and production planning.

Notes for Facilitation

- Emphasise hands-on practice with real or simulated spec sheets and BOMs.
- Use visual aids to show examples of correct and incorrect planning.
- Encourage sharing of real workplace experiences regarding miscommunication and errors.
- Maintain a balance between theory, demonstration, and group activity.
- Reinforce the importance of accurate information flow, effective coordination, and careful planning for quality and efficiency.

Unit 2.2: Pattern Development Using CAD

Unit Objectives

By the end of this unit, the participants will be able to:

1. Set up the CAD machine for pattern making.
2. Take measurements from the spec sheet or retrieve them digitally.
3. Draft the pattern or digitise the manual pattern using CAD software as per given specifications.
4. Adjust the pattern as per required standards and allowances.
5. Examine the developed pattern in relation to the spec sheet.
6. Make necessary modifications to correct deviations or improve accuracy.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, computer or laptop with CAD software installed, sample spec sheets, measuring tapes, rulers, digitising tablets (if applicable), sample manual patterns, and examples of pattern deviations for discussion.

Do

- Greet participants and introduce the importance of CAD in pattern development.
- Present the unit objectives clearly to outline the workflow from measurements to pattern verification.
- Ensure participants have handbooks, pens, and notebooks for note-taking.
- Check setup of projector, slides, CAD machines, and digitising tools before the session.
- Arrange seating to allow clear visibility of CAD demonstrations.
- Explain that the session will include demonstrations, hands-on practice, and discussions.
- Relate theoretical concepts to participants' practical experiences in pattern making.
- Invite participants to share experiences with manual or CAD pattern drafting.
- Summarise key points after each section to reinforce understanding.
- Conclude with a recap linking accurate CAD pattern development to production efficiency and quality.

Say

- Welcome to today's session on Pattern Development Using CAD.
- CAD technology helps in creating accurate patterns quickly and efficiently.
- In this unit, we will learn how to set up CAD machines, draft patterns, and make adjustments as per specifications.
- We will also focus on examining patterns and correcting deviations to ensure accuracy.
- By the end of this session, you will be able to develop precise patterns digitally that align with spec sheets.

Ask

- Why is CAD important in modern pattern development?
- How do measurements from a spec sheet guide pattern drafting?
- What are the advantages of digitising manual patterns using CAD software?
- Why is it important to adjust patterns according to allowances and standards?
- How do you examine a developed pattern to ensure it meets the given specifications?
- What could happen if deviations in a pattern are not corrected?
- Can you share your experience of drafting patterns manually or digitally?
- How does accurate pattern development impact garment production quality?

Elaborate

- Setting up the CAD machine correctly ensures smooth and efficient pattern drafting.
- Measurements from the spec sheet or digital files form the basis of accurate pattern creation.
- Drafting patterns in CAD reduces manual errors and speeds up the workflow.
- Adjustments according to standards and allowances ensure the pattern fits correctly during production.
- Examining the pattern against the spec sheet identifies deviations and areas for improvement.
- Modifying patterns corrects errors, improves accuracy, and ensures garment quality.
- CAD allows saving digital patterns for repeat production, reducing time and material wastage.
- Hands-on practice helps build confidence in digital pattern development.
- Accurate patterns contribute to efficient workflow and reduce rework in production.
- Overall, CAD-based pattern development ensures precision, consistency, and quality in garment manufacturing.

Explain

- CAD machines and software provide digital tools for precise pattern drafting.
- Measurements from the spec sheet are entered or referenced in CAD to create patterns.
- Manual patterns can be digitised using scanning or tracing tools in CAD software.
- Adjustments include adding allowances, correcting measurements, and modifying seam lines.
- Patterns must be examined for alignment with design specifications and garment standards.
- Deviations should be corrected immediately to avoid errors in production.
- CAD patterns can be stored digitally for future use, ensuring repeatability.
- Pattern accuracy directly impacts garment fit, quality, and production efficiency.
- Practising adjustments and corrections develops skill and reduces dependency on trial-and-error.
- CAD-based pattern development integrates design, measurement, and production requirements seamlessly.

Demonstrate

Participants will be able to set up a CAD machine for pattern drafting, take measurements from a sample spec sheet, and enter them into CAD software. They'll also be able to draft a basic pattern or digitise a manual one, then adjust it according to allowances and standards. Finally, they'll be able to examine the pattern for any deviations and make corrections. By observing each step, participants will learn how to develop accurate patterns using CAD technology.

Activity

1. **Name of the Activity:** CAD Pattern Drafting and Adjustment
2. **Objective of the activity:** To train participants in drafting, digitising, examining, and correcting patterns using CAD software.
3. **Resources:** CAD machines, software, sample spec sheets, measuring tools, sample manual patterns, pens, notebooks.
4. **Time Duration:** 25 minutes
5. **Instructions:**
   - Divide participants into small groups or pairs.
   - Provide each group with a CAD machine and a sample spec sheet.
   - Ask participants to set up the machine, input measurements, and draft a pattern.
   - Examine the pattern for deviations from the spec sheet and make adjustments.
   - Groups present their completed patterns and explain the corrections made.
   - Facilitator provides feedback on accuracy, adjustments, and best practices.
6. **Outcome:** Participants will be able to draft, digitise, adjust, and verify patterns using CAD software accurately.

Notes for Facilitation

- Emphasise hands-on practice with CAD machines and software.
- Use real spec sheets and manual patterns for demonstration.
- Encourage participants to discuss challenges faced during pattern adjustments.
- Maintain a balance between theory, demonstration, and practical activity.
- Reinforce that precise CAD pattern development ensures quality, consistency, and efficiency in garment production.

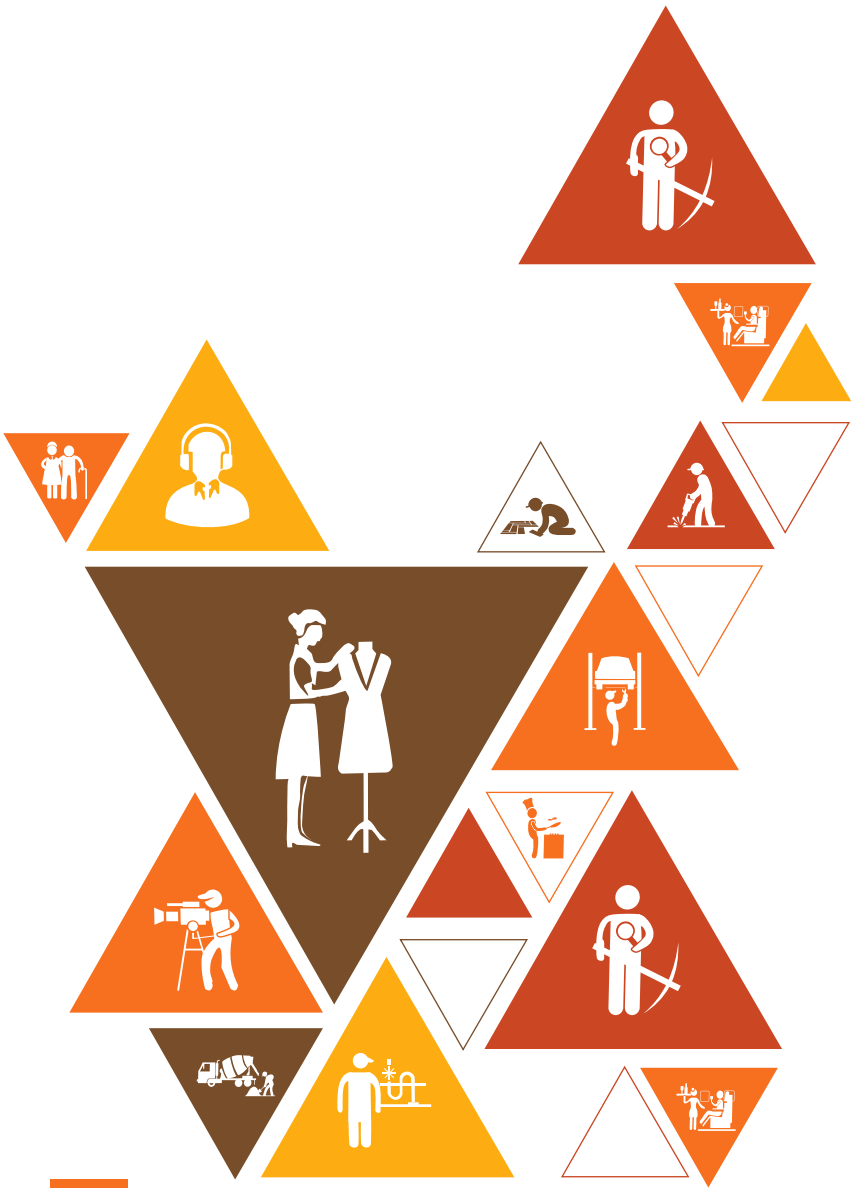
Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c) Gerber AccuMark
2. b) Fabric width, trims, and seam allowance planning
3. c) TUKAcad
4. c) Grainlines and labels
5. a) Redrawing curves

Answer the following questions briefly.

1. Refer to Unit 2.1: Information Flow and Planning
   Topic 2.1.3 Coordination with Merchandisers
2. Refer to Unit 2.2: Pattern Development Using CAD
   Topic 2.2.3 Drafting or Digitising the Pattern Using CAD Software
3. Refer to Unit 2.2: Pattern Development Using CAD
   Topic 2.2.4 Pattern Adjustments and Seam Allowances
4. Refer to Unit 2.1: Information Flow and Planning
   Topic 2.1.5 Analysing the Bill of Materials (BOM)
5. Refer to Unit 2.2: Pattern Development Using CAD
   Topic 2.2.6 Necessary Modifications



Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

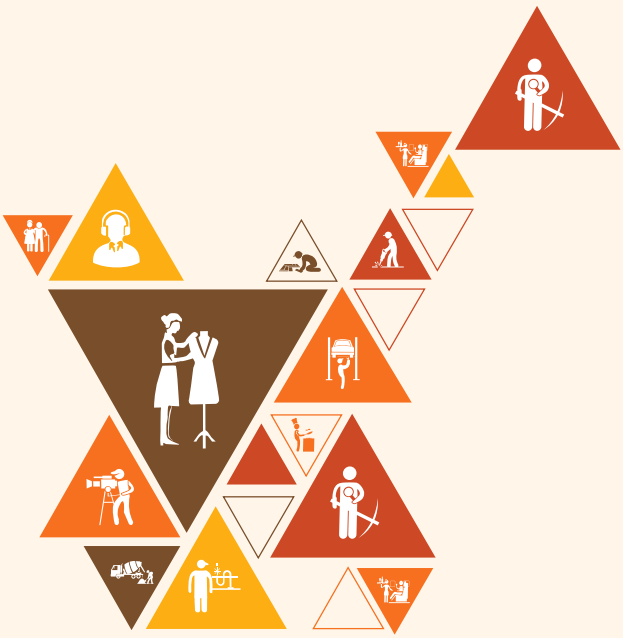
N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

3. Develop the Pattern Through (CAD/CAM)

Unit 3.1 - Pattern Development and Preparation

Unit 3.2 - Marker Efficiency and Cutting Execution



AMH/N1101

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Incorporate the shrinkage in the pattern.
2. Determine the cut ratio plan.
3. Grade the patterns as provided in the BOM (Bill of Material).
4. Identify the shrinkage required to be introduced as per the garment specification and the fabric to be used.
5. Identify the types of the markers best suitable for the specific style.
6. Plan the laying of the marker accurately.
7. Identify the most efficient marker (lay planning) according to the configuration intended.
8. Set the parameters on CAM as per required output.
9. Cut the design output.

Unit 3.1: Pattern Development and Preparation

Unit Objectives

By the end of this unit, the participants will be able to:

1. Describe the incorporation of shrinkage in the pattern as per garment specifications and fabric type.
2. Explain the process of grading patterns based on the Bill of Material (BOM).
3. Analyse and determine the cut ratio plan for accurate material allocation.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, overhead projector or large screen, computer or laptop with internet connection, fabric and garment samples with faults, measuring tapes, defect checklists, magnifying glass, inspection table or light box, garment accessories (zippers, buttons, lace), defect recording sheets, and PPE (apron, gloves, safety shoes, mask).

Do

- Greet participants and introduce the unit by connecting quality assurance with customer satisfaction in apparel production.
- State the objectives clearly so participants understand the scope of inspection and quality reporting.
- Ensure participants have their handbook, notepad, and pen ready for active note-taking.
- Check the setup of projector, laptop, whiteboard, and markers before starting.
- Arrange seating so participants can engage in discussions and view slides clearly.
- Explain the interactive method, including demonstrations, group work, and roleplays.
- Balance theoretical explanations with real garment inspection examples.
- Invite participants to share experiences of buying defective garments and how it impacted satisfaction.
- Keep participants engaged by summarising key points after each major section.
- End with a recap of inspection methods and motivate participants to adopt systematic quality assurance practices.

Say

- Welcome to this session on Inspection and Quality Assurance in Apparel Production.
- Inspection ensures that garments meet required standards before they move to the next stage.
- In this unit, we will learn how to inspect garments, document faults, and report them correctly.
- We will also discuss the correct handling techniques and the importance of systematic steps in cut component inspection.
- By the end of this session, you will be confident in identifying, recording, and reporting garment faults as part of the quality assurance process.

Ask

- Why do you think garment inspection is important in the apparel industry?
- What can happen if garment faults are not recorded properly?
- How do you think faults should be reported to supervisors?
- What safety or handling rules must be followed while inspecting garments?
- How can we ensure the count of faults is correct during inspection?
- What are the steps that must be followed while inspecting cut components before stitching?
- Can anyone share an example of a garment fault they noticed while shopping?
- How do you think quality assurance affects customer trust?

Elaborate

- Inspection is carried out at different stages to ensure garments meet customer and buyer standards.
- A systematic method of recording faults helps in monitoring quality levels.
- Reporting faults to supervisors ensures corrective actions are taken immediately.
- Handling garments with clean hands, gloves, or on inspection tables prevents stains and damage.
- Faults must be counted accurately to calculate defect percentages and prepare quality reports.
- Inspecting cut components includes checking shapes, sizes, notches, and matching patterns.
- Proper documentation improves communication between workers and supervisors.
- Inspection reduces rework, saves time, and ensures timely delivery.
- Consistent quality builds customer confidence and brand reputation.
- Trained inspectors are valuable assets for quality-focused garment factories.

Explain

- Quality assurance begins with inspection at every stage of garment production.
- A fault recording sheet helps track defects like skipped stitches, wrong sizes, or stains.
- Reporting faults can be oral (immediate correction) or written (record for supervisors).
- Garments must be handled carefully to avoid new defects during inspection.
- Inspectors use checklists to count and calculate faults systematically.
- Tools like measuring tapes, magnifiers, and light boxes help in defect identification.
- Cut components must be checked for alignment, grain, and size before sewing.
- Inspection standards depend on buyer requirements and factory guidelines.
- Systematic inspection reduces rejection rates and improves productivity.
- Quality assurance is not just about finding faults but preventing them through proper systems.

Demonstrate

The facilitator will show how to inspect garments on a light box or inspection table, identify defects like skipped stitches or open seams, and record them on a fault sheet. Participants will observe how to count and calculate defect percentages and how to report faults correctly. A live or video demonstration will include inspection of cut components to ensure accuracy before stitching.

Activity

1. **Name of the Activity:** Record and Report
2. **Objective of the Activity:** To train participants in fault identification, documentation, and reporting during garment inspection.
3. **Resources:** Participant handbook, sample garments with faults, fault recording sheets, measuring tape, magnifying glass, PPE.
4. **Time Duration:** 20 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Provide each group with sample garments containing defects.
   - Ask them to inspect, record the faults on a sheet, and prepare a short report.
   - Groups will present their findings and explain how they would communicate faults to supervisors.
   - Facilitator gives feedback on accuracy, documentation, and clarity of reporting.
6. **Outcome:** Participants will be able to inspect garments, record faults, calculate defect counts, and demonstrate effective reporting practices.

Notes for Facilitation

- Keep participants engaged by showing real garments, fault samples, and inspection tools.
- Use slides and diagrams to explain inspection steps and documentation methods.
- Encourage participants to share their own experiences with garment quality issues.
- Maintain a balance between explanation, demonstration, and group activity.
- Reinforce learning with clear summaries and feedback after each section and the activity.

Unit 3.2: Marker Efficiency and Cutting Execution

Unit Objectives

By the end of this unit, the participants will be able to:

1. Identify and discuss the types of markers suitable for different styles.
2. Plan and examine accurate marker laying for optimal efficiency.
3. Assess and identify the most efficient lay planning method according to configuration.
4. Set and explain the parameters on Computer-Aided Manufacturing (CAM) for desired output.
5. Execute and cut the design output as per planned specifications.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, overhead projector or large screen, computer or laptop with internet connection and CAM software, sample markers (paper or digital), fabric samples, cutting tools (scissors, rotary cutters, cutting machines), measuring tapes, rulers, layout templates, PPE (apron, gloves, safety shoes, mask), cutting tables, and sample garments for reference.

Do

- Greet participants and introduce the unit by connecting marker efficiency and cutting accuracy to material savings and garment quality.
- State the objectives clearly so participants understand the scope of marker planning and cutting operations.
- Ensure participants have their handbook, notepad, and pen ready for note-taking.
- Check the setup of projector, laptop, whiteboard, and markers before starting.
- Arrange seating so participants can observe demonstrations and view slides clearly.
- Explain the interactive nature of the session – including demonstrations, group exercises, and hands-on cutting practice.
- Balance theoretical explanations with practical marker and cutting examples.
- Invite participants to share experiences of fabric wastage or cutting errors in garment production.
- Keep participants engaged by summarising key points after each major section.
- Conclude with a recap linking proper marker planning and cutting execution to efficiency, quality, and cost savings.

Say

- Welcome to this session on Marker Efficiency and Cutting Execution.
- Marker planning ensures fabric is used efficiently while maintaining garment accuracy.
- In this unit, we will learn about different types of markers, lay planning, and CAM parameters for cutting.

- We will also practice executing cuts as per planned specifications to reduce material wastage.
- By the end of this session, you will be able to prepare markers and cut fabrics accurately for production.

Ask

- Why is efficient marker planning important in garment production?
- What types of markers have you seen or used in fabric cutting?
- How does marker placement affect fabric consumption and wastage?
- Why is it important to follow lay planning based on configuration?
- What are the key CAM parameters to check before executing cuts?
- Can cutting errors impact garment quality or production timelines?
- How can marker and cutting planning improve overall production efficiency?
- Can you share an experience where improper cutting caused fabric wastage?

Elaborate

- Markers are templates for arranging patterns on fabric to minimise waste.
- Different garment styles require different marker types (manual, digital, or CAM-based).
- Accurate marker laying ensures optimal fabric utilisation and reduces costs.
- Lay planning considers fabric width, garment sizes, and style requirements.
- CAM parameters include fabric type, cutting speed, depth, and blade settings.
- Executing cuts according to planned markers ensures consistent garment quality.
- Reviewing marker efficiency helps identify areas to save material in future production.
- Proper cutting reduces errors, rework, and delays in the production line.
- Efficient cutting maintains workflow and aligns with production targets.
- Skillful execution of markers and cutting contributes to sustainability by minimising wastage.

Explain

- Marker types include manual paper markers, digital markers, and CAM-generated markers.
- Accurate marker laying ensures garments are cut correctly with minimal fabric waste.
- Lay planning methods depend on garment configuration and fabric width.
- CAM systems allow automated setting of cutting parameters for precision output.
- Cutting execution follows the markers and specifications to produce accurate garment pieces.
- Proper execution requires attention to detail, correct blade settings, and safety practices.
- Regularly reviewing marker efficiency improves material utilisation and production speed.
- Misaligned markers or incorrect cutting can lead to defective garments or wastage.
- Understanding markers and lay planning enhances coordination between pattern makers and cutters.
- Efficient marker planning and cutting are essential for cost control, quality, and timely delivery.

Demonstrate

Participants will be able to prepare different types of markers for various garment styles, lay them on fabric for optimal efficiency using templates or CAM software, and set CAM parameters like blade type, speed, and depth. They'll also be able to execute cuts on sample fabric according to the planned markers. By observing the complete workflow from marker selection to accurate cutting, participants will understand how efficiency impacts fabric usage and quality.

Activity

1. **Name of the Activity:** Marker Laying and Cutting Practice
2. **Objective of the Activity:** To train participants in preparing markers, laying fabric efficiently, and executing cuts accurately.
3. **Resources:** Participant handbook, sample fabrics, pattern pieces, markers, cutting tools, measuring tapes, CAM-enabled cutting machine (if available), PPE.
4. **Time Duration:** 25 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Provide each group with fabric, pattern pieces, and markers.
   - Ask them to lay out the markers efficiently, set CAM parameters (if applicable), and cut the fabric.
   - Groups will review the fabric usage and demonstrate the completed cut pieces.
   - Facilitator provides feedback on marker placement, cutting accuracy, and material efficiency.
6. **Outcome:** Participants will be able to identify suitable markers, lay fabric efficiently, set CAM parameters, and execute accurate cuts to minimise fabric wastage.

Notes for Facilitation

- Use real fabric and sample markers to make the session practical.
- Emphasise safety and correct handling of cutting tools and CAM equipment.
- Encourage participants to discuss challenges in marker efficiency and cutting.
- Maintain a balance between explanation, demonstration, and hands-on activity.
- Reinforce learning by summarising key points, reviewing participant work, and highlighting efficiency and quality benefits.

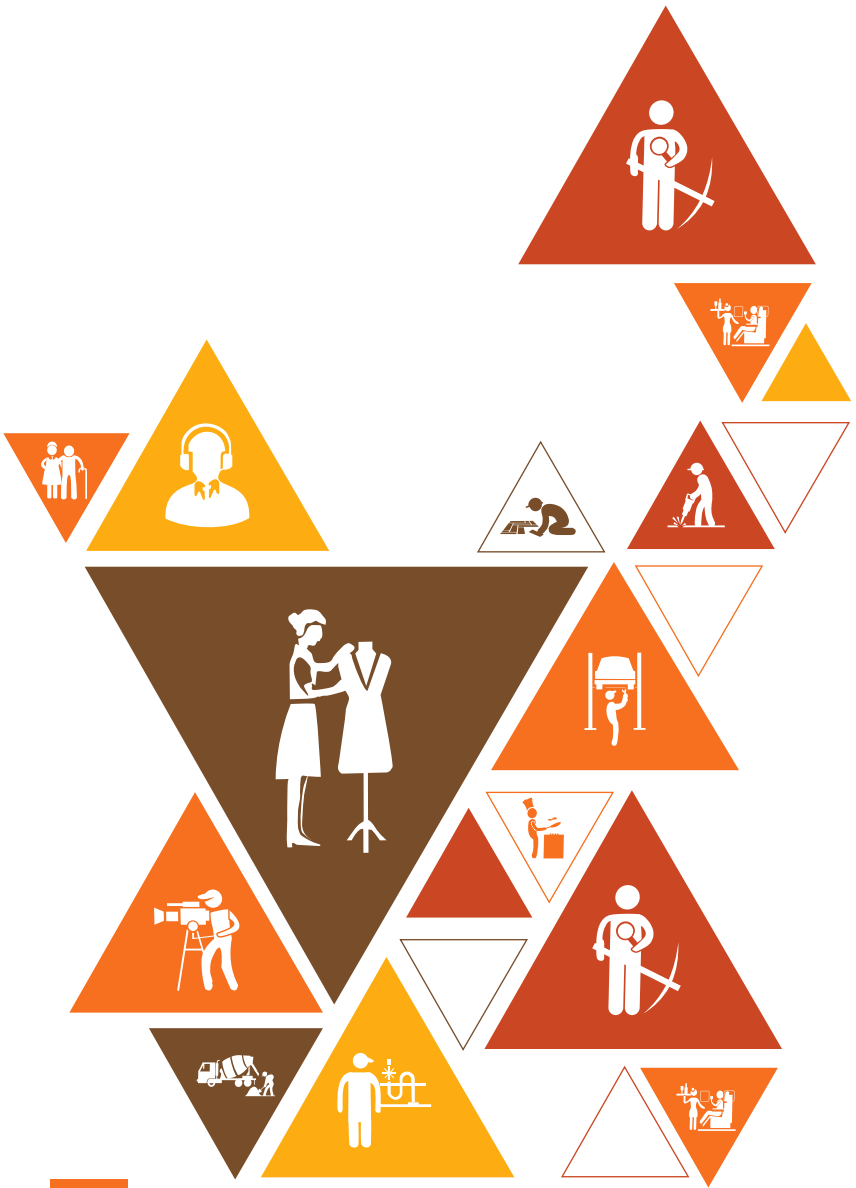
Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c. To allocate fabric quantities per garment size efficiently
2. c. Brand popularity
3. b. Gerber Cutter
4. b. Check grainline
5. c. Regular blade maintenance

Answer the following questions briefly.

1. Refer to Unit 3.2: Marker Efficiency and Cutting Execution
   Topic 3.2.1 Marker Types and Their Applications
2. Refer to Unit 3.2: Marker Efficiency and Cutting Execution
   Topic 3.2.2 Marker Layout for Optimal Efficiency
3. Refer to Unit 3.2: Marker Efficiency and Cutting Execution
   Topic 3.2.3 Lay Planning Methods for Maximum Output
4. Refer to Unit 3.2: Marker Efficiency and Cutting Execution
   Topic 3.2.4 Setting Parameters on CAM Systems
5. Refer to Unit 3.2: Marker Efficiency and Cutting Execution
   Topic 3.2.5 Executing the Cut



Skill India
कौशल भारत-कुशल भारत

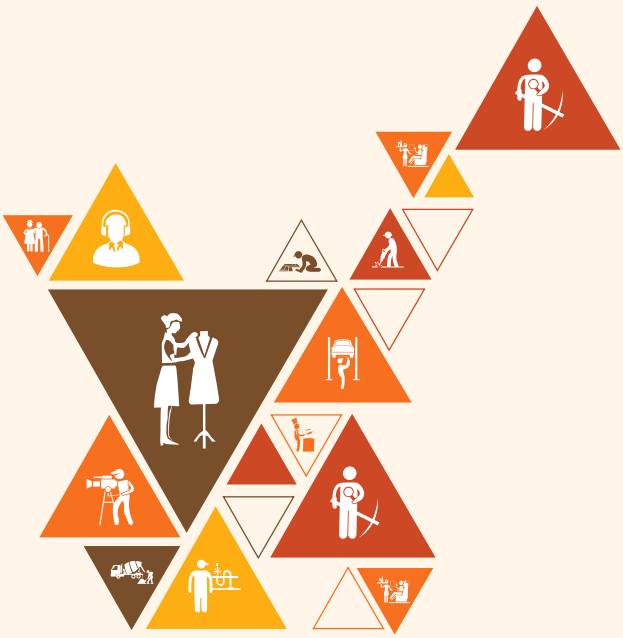
सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

4. Take the Print-out Through (CAD/CAM)

Unit 4.1 - Processes Related to System Closure and Output Delivery



AMH/N1101

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Demonstrate shutting down of the down, CAD/CAM system.
2. Take the backup of the work done.
3. Set the CAM for taking the print outs.
4. Provide print out of mini marker to the merchandiser for reference.

Unit 4.1: Processes Related to System Closure and Output Delivery

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain the procedure for shutting down the CAD/CAM system.
2. Describe the steps to take a backup of the completed work.
3. Set up the CAM system to prepare for printing.
4. Provide and present the mini marker printout to the merchandiser for reference.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, computer or laptop with internet, sample CAD/CAM files, backup storage devices (USB, external HDD, cloud access), sample mini marker printouts, measuring tools, and examples of proper file organisation and storage.

Do

- Greet participants and introduce the importance of system closure, backup, and output delivery in CAD/CAM workflow.
- Present the unit objectives clearly to outline the scope of system closure and output preparation.
- Ensure participants have handbooks, pens, and notebooks for notes.
- Check setup of projector, slides, and CAD/CAM systems before the session.
- Organise seating so participants can clearly view demonstrations on the computer or projector.
- Explain the interactive nature of the session – discussions, demonstrations, and hands-on activities.
- Relate theoretical procedures with participants' practical CAD/CAM experiences.
- Invite participants to share their own experiences in system shutdown, backup, and printing.
- Summarise key points after each section to ensure understanding.
- Conclude with a recap, linking proper system closure, backup, and output delivery to efficiency, data security, and production accuracy.

Say

- Welcome to the session on Processes Related to System Closure and Output Delivery.
- Proper system shutdown and backup procedures are crucial to avoid data loss and ensure smooth workflow.
- In this unit, we will learn how to safely shut down the CAD/CAM system, take backups, and prepare outputs for production.

- We will also cover how to set up the CAM system for printing and deliver mini marker printouts to the merchandiser.
- By the end of this session, you will be confident in handling system closure, backup, and output delivery in CAD/CAM operations.

Ask

- Why is it important to properly shut down the CAD/CAM system?
- How often should backups of completed work be taken?
- What could happen if files are not backed up correctly?
- How do you ensure a CAM system is ready for printing?
- Why is the mini marker printout important for merchandisers?
- Can you share an experience where poor output delivery caused issues?
- What steps do you follow to safely store CAD/CAM files for future use?
- How can mistakes in system closure or output delivery affect production schedules?

Elaborate

- Shutting down the CAD/CAM system correctly prevents data corruption and ensures system stability.
- Backing up completed work protects against accidental loss, system crashes, or file errors.
- CAM system setup involves selecting correct settings for layout, markers, and print parameters.
- Mini marker printouts provide visual references for fabric cutting and production planning.
- Clear file naming and organised storage help in easy retrieval and collaboration.
- Following defined procedures reduces errors and improves workflow efficiency.
- Timely output delivery ensures production timelines are met and avoids rework.
- Proper system management builds discipline, accuracy, and reliability in CAD/CAM operations.
- Neglecting backup or system closure may result in lost work, delays, or production mistakes.
- This process supports quality control, cost efficiency, and seamless communication with merchandisers.

Explain

- System shutdown includes closing all applications, saving files, and powering off safely.
- Backup can be done on external drives, cloud storage, or company servers, depending on policy.
- CAM system setup requires checking print sizes, fabric layout, and marker alignment.
- Mini marker printouts act as a reference for cutting teams and merchandisers.
- Organised file storage prevents accidental deletion and ensures future accessibility.
- Accuracy in output delivery directly impacts production efficiency and garment quality.
- Regular checks of system and backup protocols maintain operational consistency.

- Following steps consistently prevents errors and reduces downtime.
- Communicating completed outputs effectively with merchandisers ensures smooth production.
- Overall, system closure, backup, and output delivery are integral to CAD/CAM productivity.

Demonstrate

Participants will be able to correctly shut down the CAD/CAM system, back up a completed project to an external drive or cloud, set up the CAM system for printing mini markers, and prepare and present a sample mini marker printout to the merchandiser. They will observe each step and understand the importance of accuracy and organisation in output delivery.

Activity

1. **Name of the Activity:** Backup and Output Practice
2. **Objective of the activity:** To train participants in shutting down the system, backing up files, and delivering mini marker printouts accurately.
3. **Resources:** CAD/CAM computer, sample project files, backup drives, sample mini marker printouts, checklist for CAM setup.
4. **Time Duration:** 20 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Each group works on a sample CAD/CAM project.
   - Participants practice shutting down the system correctly and backing up their files.
   - Set up the CAM system for printing and prepare a mini marker printout.
   - Present the printout to the facilitator as a merchandiser would receive it.
   - Facilitator provides feedback on correctness, accuracy, and organisation.
6. **Outcome:** Participants will be able to safely close CAD/CAM systems, back up work, and deliver mini marker printouts efficiently.

Notes for Facilitation

- Emphasise hands-on practice with real CAD/CAM systems and sample projects.
- Use visual aids (slides or projector) to explain backup and output procedures.
- Encourage sharing of workplace experiences with file loss or output errors.
- Maintain a balance between theory, demonstration, and practical activity.
- Reinforce the importance of accuracy, organisation, and timely delivery in system closure and output processes.

Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c. Closing all open projects and saving work
2. c. SMS Transfer
3. c. Merchandiser
4. b. Choose destination
5. c. To ensure data is not corrupted or incomplete

Answer the following questions briefly.

1. Refer to Unit 4.1: Processes Related to System Closure and Output Delivery
   Topic 4.1.1 Shutting Down the CAD/CAM System
2. Refer to Unit 4.1: Processes Related to System Closure and Output Delivery
   Topic 4.1.2 Taking Backup of the Completed Work
3. Refer to Unit 4.1: Processes Related to System Closure and Output Delivery
   Topic 4.1.3 The CAM System for Printing
4. Refer to Unit 4.1: Processes Related to System Closure and Output Delivery
   Topic 4.1.4 Mini Marker Printout and the Merchandiser
5. Refer to Unit 4.1: Processes Related to System Closure and Output Delivery
   Topic 4.1.4 Mini Marker Printout and the Merchandiser

Skill India
कौशल भारत - कुशल भारत

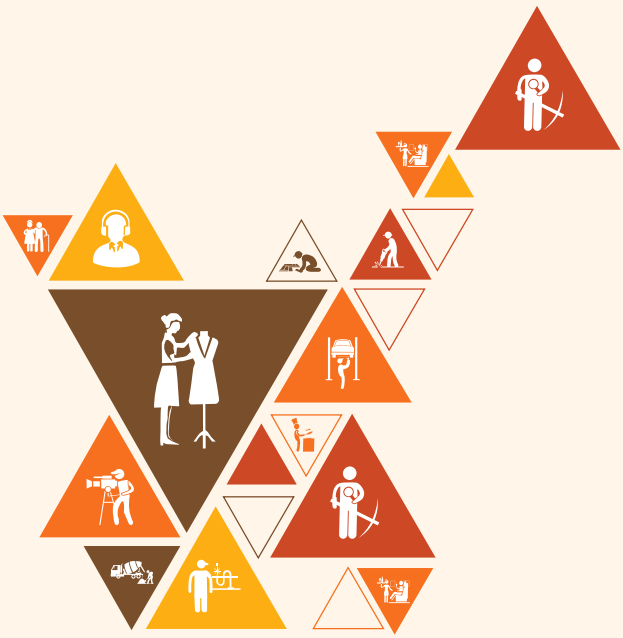
सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

5. Maintain Work Area, Machinery, Tools and Equipment

Unit 5.1 - Safe and Efficient Use of Tools and Equipment



AMH/N1102

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Maintain tools and equipment.
2. Demonstrate correct handling of the tools and equipment.
3. Identify the methods to minimise waste.
4. Clean the tools and equipment.
5. Work in a comfortable position with the correct posture.
6. Dispose of waste safely in the designated location.
7. Store cleaning equipment safely after use.

Unit 5.1: Safe and Efficient Use of Tools and Equipment

Unit Objectives

By the end of this unit, the participants will be able to:

1. Describe methods to maintain tools and equipment.
2. Demonstrate appropriate handling techniques for tools and equipment.
3. Clean tools and equipment using suitable procedures.
4. Explain ways to minimise material and resource wastage.
5. Work in a stable and ergonomic position to ensure proper posture.
6. Dispose of waste responsibly at designated locations.
7. Store cleaning and maintenance equipment securely after use.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, computer or laptop with internet, different types of tools and equipment (scissors, cutters, measuring tapes, pattern-making tools, sewing tools, CAD/CAM accessories), PPE (gloves, apron, mask, safety shoes), cleaning supplies (cloths, brushes, detergent, sanitiser), waste bins, storage racks/stands for equipment, sample maintenance checklists, and examples of proper disposal methods.

Do

- Greet participants and introduce the importance of safe and efficient use of tools and equipment.
- Present the unit objectives clearly to outline the scope of tool handling and maintenance.
- Ensure participants have handbooks, pens, and notebooks for note-taking.
- Check setup of projector, slides, and tools/equipment before the session.
- Organise seating for clear visibility during demonstrations.
- Explain the interactive nature of the session – discussions, demonstrations, and hands-on activities.
- Relate theoretical concepts with participants' practical experiences in tool handling.
- Invite participants to share methods they use for maintaining and storing tools.
- Summarise key points after each section to ensure understanding.
- Conclude with a recap, linking proper tool use, maintenance, and disposal to safety, efficiency, and reduced wastage.

Say

- Welcome to today's session on Safe and Efficient Use of Tools and Equipment.
- Proper handling and maintenance of tools ensures safety, accuracy, and longevity.
- In this unit, we will learn methods for cleaning, handling, storing tools, and minimising wastage.
- We will also cover ergonomics, posture, and responsible disposal of waste.
- By the end of this session, you will be confident in working safely and efficiently with tools and equipment.

Ask

- Why is it important to handle tools and equipment carefully?
- Can you name some methods to maintain tools in good condition?
- How can improper cleaning or storage damage tools?
- What are some ways to minimise material and resource wastage?
- Why is posture important while working with tools?
- How should waste be disposed of safely and responsibly?
- What problems may arise if tools are not stored securely after use?
- Can you share an example where poor tool handling caused accidents or inefficiency?

Elaborate

- Safe handling and maintenance prevent accidents and prolong tool life.
- Different tools require specific cleaning and maintenance procedures to stay functional.
- Proper handling includes holding, transporting, and using tools correctly.
- Minimising material and resource wastage saves cost and improves efficiency.
- Working in stable and ergonomic positions prevents fatigue and injury.
- Proper waste disposal prevents contamination, hazards, and environmental harm.
- Secure storage keeps tools organised, accessible, and ready for future use.
- Neglected tools can lead to accidents, production delays, and poor-quality work.
- Following standard procedures builds discipline and workplace efficiency.
- Responsible tool management supports safety, quality, and productivity in daily operations.

Explain

- PPE like gloves, aprons, masks, and safety shoes protect workers while handling tools.
- Each tool has a specific purpose and requires correct handling techniques.
- Cleaning procedures depend on the type of tool and material it interacts with.
- Resource wastage can be minimised by accurate measurement, careful cutting, and efficient usage.
- Ergonomic positions include sitting or standing upright, keeping arms and wrists aligned, and avoiding awkward postures.

- Waste should be sorted and placed in designated bins for proper disposal or recycling.
- Storage includes cleaning, drying, and placing tools in designated racks or boxes.
- Regular maintenance includes sharpening, lubrication, and inspection for damage.
- Correct handling ensures accuracy, prevents injury, and avoids tool damage.
- Overall, safe and efficient tool use supports workplace safety, productivity, and sustainability.

Demonstrate

Participants will be able to demonstrate correct handling techniques for various tools and equipment, apply appropriate cleaning methods using brushes, cloths, or detergents, maintain ergonomic working positions while using tools, and properly dispose of waste and leftover materials. They'll also be able to securely store tools in racks or designated areas. The participants will observe each step, understanding the importance of safety, efficiency, and organisation in tool and equipment management.

Activity

1. **Name of the Activity:** Clean, Handle, and Store Tools
2. **Objective of the activity:** To train participants in safe handling, cleaning, and storing tools while minimising wastage.
3. **Resources:** Tools (scissors, cutters, measuring tapes, pattern-making tools), PPE, cleaning supplies, maintenance checklists, waste bins, storage racks.
4. **Time Duration:** 20 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Provide each group with a set of tools and cleaning supplies.
   - Ask participants to demonstrate safe handling and cleaning of their assigned tools.
   - Practice working in stable and ergonomic positions.
   - Sort and dispose of waste into the correct bins.
   - Store the cleaned tools securely on racks or in boxes.
   - Each group explains the steps followed and safety measures taken.
   - Facilitator provides feedback on safety, cleanliness, posture, and storage.
6. **Outcome:** Participants will be able to handle, clean, and store tools safely, maintain proper posture, and minimise material wastage.

Notes for Facilitation

- Emphasise hands-on practice with real tools and equipment.
- Use visual aids (slides or projector) to demonstrate cleaning, handling, and storage procedures.
- Encourage sharing of workplace experiences with tool management and accidents.
- Maintain a balance between theory, demonstration, and practical activity.
- Reinforce the importance of safety, ergonomics, hygiene, and efficiency in tool usage.

Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c. Pick the right tool
2. b. Sit upright with arms at 90°
3. c. Disposed in puncture-proof containers
4. c. Avoiding waste creation
5. c. To prevent rust and damage

Answer the following questions briefly.

1. Refer to Unit 5.1: Safe and Efficient Use of Tools and Equipment
   Topic 5.1.2 Handling Techniques for Tools and Equipment
2. Refer to Unit 5.1: Safe and Efficient Use of Tools and Equipment
   Topic 5.1.3 Cleaning Tools and Equipment
3. Refer to Unit 5.1: Safe and Efficient Use of Tools and Equipment
   Topic 5.1.5 Ergonomic Working Positions
4. Refer to Unit 5.1: Safe and Efficient Use of Tools and Equipment
   Topic 5.1.6 Waste Disposal Protocols
5. Refer to Unit 5.1: Safe and Efficient Use of Tools and Equipment
   Topic 5.1.7 Storage of Cleaning and Maintenance Equipment

Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

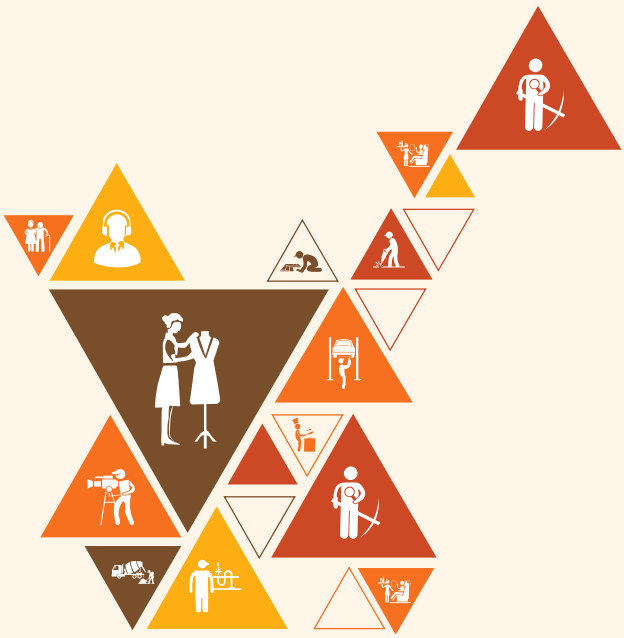
N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

6. Promote and Sustain Safety, Health, and Security in Workplace, While Fostering Gender and Persons with Disabilities (PwD) Sensitisation

Unit 6.1 - Health, Safety and Environmental Practices

Unit 6.2 - Work Operations and Quality Compliance



AMH/N0620

Key Learning Outcomes

By the end of this module, the participants will be able to:

1. Follow health, safety, hygiene, and environmental management practices at the workplace, maintaining personal health, hygiene, and a lifestyle free from intoxicants.
2. Identify and report hazards, risks, accidents, unsafe conditions, and emergencies promptly, and respond appropriately to mock drills, shutdowns, and evacuation procedures.
3. Ensure the work area is hazard-free, set up tools and machinery correctly, and check that equipment is safe to use as per job requirements.
4. Handle equipment, tools, materials, and waste safely, minimising wastage, disposing of waste materials correctly, and returning reusable materials.
5. Obtain, check, and clarify work instructions, tickets, or job cards with supervisors, and ask questions when instructions are unclear.
6. Agree on and review work targets with supervisors, check for special instructions, and maintain workflow to meet production targets.
7. Work in conformance with company quality standards, legal requirements, and organisational policies, ensuring products meet quality parameters.
8. Carry out visual inspections to identify defects or non-conformance, and report defective tools, machines, or risks to the relevant person promptly and accurately.
9. Complete required forms, records, and documentation, including QC checks and inspection reports, to ensure accountability.
10. Leave the work area safe, clean, and secure upon completion of tasks to support ongoing workplace safety and efficiency.

Unit 6.1: Health, Safety and Environmental Practices

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain health and safety practices applicable at the workplace and minimise risks to self and others.
2. List potential hazards, risks and threats based on operations and describe appropriate responses to accidents or emergencies.
3. Follow procedures for mock drills, shutdown, evacuation, and emergency scenarios.
4. Describe organisational procedures for safe equipment handling and machine operations.
5. Describe disposal systems for waste and by-products; minimise wastage and handle reusable materials appropriately.
6. Follow environment management system procedures and carry out walk-throughs to ensure hazard-free work areas.
7. Seek clarification from authorised personnel when unsure and report malfunctions or risks to relevant persons.
8. State the importance of hygiene, sound health, and describe the ill-effects of alcohol, tobacco and drugs to promote a healthy lifestyle.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, PPE (gloves, apron, mask, safety shoes, helmets), fire extinguisher, first-aid kit, emergency signage, sample waste disposal bins, cleaning equipment, checklist for environmental walk-throughs, images/videos of workplace hazards, and sample mock drill procedures.

Do

- Greet participants and introduce the importance of health, safety, and environmental practices at the workplace.
- Present the unit objectives clearly to outline the scope of safety, hygiene, and environmental responsibilities.
- Ensure participants have handbooks, pens, and notebooks for note-taking.
- Check setup of projector, slides, PPE, and demonstration materials before the session.
- Organise seating to allow clear visibility for demonstrations and discussions.
- Explain that the session will include interactive discussions, demonstrations, role-plays, and walk-throughs.
- Relate theoretical concepts with participants' practical experiences and workplace observations.
- Invite participants to share experiences of hazards or safety measures in their workplaces.
- Summarise key points after each section to ensure understanding.
- End with a recap, linking safe practices and environmental management to productivity, personal safety, and healthy work culture.

Say

- Welcome to today's session on Health, Safety, and Environmental Practices.
- Workplace safety and hygiene protect not only yourself but also your colleagues and equipment.
- In this unit, we will learn about recognising hazards, following safety protocols, and managing environmental responsibilities.
- We will also cover emergency procedures, safe equipment handling, and the importance of a healthy lifestyle.
- By the end of this session, you will be confident in promoting safety, hygiene, and environmental responsibility at work.

Ask

- Why is following health and safety practices important in the workplace?
- Can you name some common hazards and risks in your work area?
- What should you do in case of an accident or emergency?
- Why is proper waste disposal important for health and the environment?
- How can you ensure safe handling of equipment and machines?
- Why should you follow authorised procedures and seek clarification when unsure?
- How do alcohol, tobacco, and drugs affect safety and productivity at work?
- Can you share examples of unsafe practices you have witnessed?

Elaborate

- Health and safety practices prevent accidents and protect employees, equipment, and the work environment.
- Hazards can include chemical, electrical, physical, ergonomic, or fire-related risks.
- Proper emergency responses reduce injuries and damage during accidents.
- Mock drills, evacuation plans, and shutdown procedures prepare workers for real emergencies.
- Safe equipment handling prevents accidents, prolongs machine life, and ensures smooth operations.
- Waste disposal and recycling minimise environmental impact and reduce material wastage.
- Environmental management walk-throughs help maintain hazard-free work areas.
- Reporting malfunctions and risks ensures timely corrective action.
- Hygiene and sound health are essential for productivity and wellbeing.
- Awareness of the harmful effects of alcohol, tobacco, and drugs promotes a safe and healthy work culture.

Explain

- PPE like gloves, helmets, aprons, masks, and safety shoes protect workers from injuries.
- Identifying and reporting hazards prevents accidents before they occur.
- Emergency procedures include mock drills, shutdown, and evacuation protocols.
- Machines and tools must be operated following organisational safety procedures.
- Waste should be segregated, handled responsibly, and reusable materials stored appropriately.
- Environmental management systems include inspections, walk-throughs, and monitoring workplace conditions.
- Clarifying doubts with authorised personnel ensures correct actions and compliance with safety standards.
- Maintaining personal hygiene and avoiding harmful substances supports physical and mental health.
- Safe practices enhance overall productivity, reduce downtime, and improve workplace morale.
- Overall, health, safety, and environmental practices create a secure, efficient, and sustainable work environment.

Demonstrate

Participants will be able to properly use personal protective equipment (PPE) and safety equipment, safely handle tools and machines, segregate and dispose of waste in designated bins, and conduct a mock drill or evacuation scenario. They'll also be able to perform a walk-through to identify hazards and ensure a safe work area. The participants will observe and understand how these practices are applied in real workplace scenarios.

Activity

1. **Name of the Activity:** Safety Walk-through and Mock Drill
2. **Objective of the Activity:** To train participants in identifying hazards, following emergency procedures, and managing environmental responsibilities.
3. **Resources:** PPE, emergency signage, fire extinguisher, first-aid kit, waste bins, maintenance checklist, images/videos of hazards.
4. **Time Duration:** 25 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Conduct a walk-through of the training area or simulated workplace to identify potential hazards.
   - Practice a mock drill including evacuation, shutdown, and emergency responses.
   - Demonstrate proper disposal of waste and handling of reusable materials.
   - Groups discuss findings, report hazards, and suggest preventive measures.
   - Facilitator provides feedback on safety measures, emergency readiness, and environmental practices..
6. **Outcome:** Participants will be able to identify hazards, follow safety procedures, manage waste responsibly, and maintain a safe and healthy work environment.

Notes for Facilitation

- Emphasise practical demonstrations of PPE, emergency procedures, and hazard identification.
- Use real or simulated scenarios to make safety practices relatable.
- Encourage sharing of workplace safety experiences and lessons learned.
- Maintain balance between theory, demonstration, and practical activity.
- Reinforce that safety, hygiene, and environmental responsibility are essential for personal wellbeing, productivity, and sustainable operations.

Unit 6.2: Work Operations and Quality Compliance

Unit Objectives

By the end of this unit, the participants will be able to:

1. Obtain and interpret data from work tickets or job cards to perform duties aligned with job responsibilities.
2. Ask questions when instructions are unclear and agree upon work targets with supervisors, including special instructions.
3. Check tools and equipment for safety; select and use correct equipment as per job requirements.
4. Ensure the work area is hazard-free and set up machines like fabric checking machines accordingly.
5. Carry out tasks at a pace that maintains workflow and meets production targets.
6. Conduct visual inspections to detect product defects and ensure compliance with quality parameters.
7. Work in accordance with company quality standards, legal requirements and organisational procedures.
8. Complete required documentation accurately and leave the work area safe and secure after task completion.

Resources to be Used

Participant handbook, notepad, pen, whiteboard, markers, presentation slides, projector or large screen, computer or laptop with internet, sample work tickets/job cards, measuring tools, fabric samples, fabric checking machines (or images/videos), PPE (gloves, apron, mask, safety shoes), quality checklists, defect samples, and storage racks for tools and equipment.

Do

- Greet participants and introduce the importance of efficient work operations and adherence to quality standards.
- Present the unit objectives clearly to outline the scope of work operations and quality compliance.
- Ensure participants have handbooks, pens, and notebooks for note-taking.
- Check setup of projector, slides, machines, and sample tools before the session.
- Organise seating so all participants can observe demonstrations and activities clearly.
- Explain that the session includes interactive discussions, demonstrations, role-plays, and practical exercises.
- Relate theoretical concepts with participants' workplace experiences regarding workflow and quality compliance.
- Invite participants to share their experiences with completing tasks while maintaining quality standards.
- Summarise key points after each section to ensure understanding.
- End with a recap, linking efficient work operations, quality compliance, and safe practices to productivity and job performance.

Say

- Welcome to today's session on Work Operations and Quality Compliance.
- Efficient workflow and adherence to quality standards are essential for production success.
- In this unit, we will learn how to interpret work instructions, handle tools and equipment safely, and inspect products for quality.
- We will also cover documentation, safe work area setup, and meeting production targets.
- By the end of this session, you will be able to carry out tasks efficiently while ensuring quality and safety.

Ask

- What do you think is the best way to store cut fabric pieces to prevent wrinkles or damage?
- Can you give an example of a time when a garment was damaged because it wasn't handled correctly?
- How do you measure your own workflow rate to know if you're on track to meet a target?
- Why is it important to clean your tools and equipment every day?
- How can carefully following instructions help you avoid mistakes?

Elaborate

- Work tickets and job cards provide detailed instructions for tasks and ensure alignment with job responsibilities.
- Asking questions and clarifying instructions prevents errors and improves efficiency.
- Checking tools and equipment ensures safety and that correct equipment is used for each task.
- Setting up a hazard-free work area reduces accidents and prepares machines like fabric checking machines for use.
- Maintaining a steady work pace ensures workflow continuity and achievement of production targets.
- Visual inspections detect defects such as mis-stitching, measurement errors, or fabric flaws.
- Compliance with company standards and legal requirements maintains quality, safety, and customer satisfaction.
- Completing documentation accurately ensures accountability and traceability of work.
- Leaving the work area safe and secure prevents accidents and protects tools, materials, and products.
- Efficient work operations combined with quality compliance build reliability, discipline, and trust within the organisation.

Explain

- Work tickets/job cards contain job details, target outputs, and any special instructions.
- Asking questions clarifies responsibilities and avoids mistakes.
- Proper tool selection and safety checks prevent accidents and equipment damage.
- Hazard-free setup includes removing obstacles, arranging machines, and ensuring proper lighting and ventilation.

- Maintaining workflow pace ensures timely completion of tasks without compromising quality.
- Visual inspections help identify defects early, reducing rework and wastage.
- Following organisational procedures ensures compliance with quality and legal standards.
- Accurate documentation records progress, defects, and completion status.
- Safe and organised work areas contribute to efficient operations and workplace safety.
- Overall, effective operations and quality compliance result in higher productivity, reduced errors, and consistent product quality.

Demonstrate

Participants will be able to read and interpret a sample work ticket or job card, check and select the right tools and equipment for a task, and set up a hazard-free work area using a fabric checking machine. They'll also be able to conduct visual inspections on sample fabrics or garments and complete a sample documentation form accurately. By observing these steps, participants will understand how to apply correct work operations, safety, and quality checks in a practical setting.

Activity

1. **Name of the activity:** Work Setup and Quality Check
2. **Objective of the activity:** To train participants in interpreting job instructions, setting up a safe work area, performing tasks efficiently, and ensuring quality compliance.
3. **Resources:** Sample work tickets/job cards, tools and equipment, fabric samples, PPE, fabric checking machines (or images), quality checklists, documentation forms..
4. **Time Duration:** 25 minutes
5. **Instructions:**
   - Divide participants into small groups.
   - Provide each group with a work ticket/job card and sample tools.
   - Ask participants to set up their work area safely and check tools for readiness.
   - Perform tasks at a steady pace, conduct visual inspections for defects, and ensure compliance with quality parameters.
   - Complete documentation and report findings to the facilitator.
   - Facilitator provides feedback on accuracy, safety, workflow, and quality compliance..
6. **Outcome:** Participants will be able to perform work operations safely, maintain quality standards, and complete tasks efficiently with proper documentation.

Notes for Facilitation

- Emphasise practical exercises using real or simulated work tickets and tools.
- Use visual aids and sample defects to explain quality compliance.
- Encourage participants to share workplace experiences of efficiency and quality challenges.
- Maintain a balance between theory, demonstration, and hands-on activity.
- Reinforce that safe, efficient work operations and quality compliance are critical for productivity, accuracy, and workplace safety.

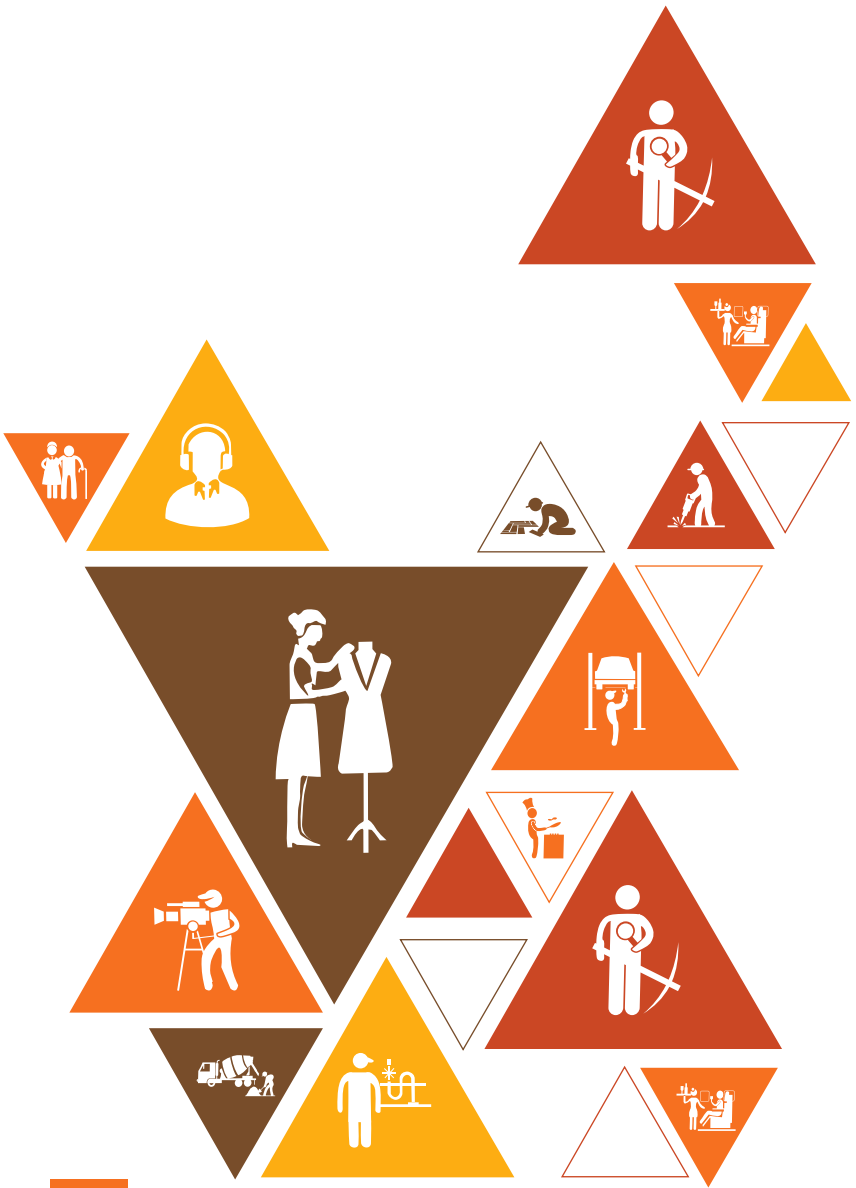
Answers to Exercises for PHB

Answer the following questions by choosing the correct option:

1. c. Entertainment
2. c. To ensure consistency and safety in tasks
3. c. Following SOPs and health and safety norms
4. b. To support production planning and accountability
5. b. Leave machines running

Answer the following questions briefly.

1. Refer to Unit 6.2: Work Operations and Quality Compliance
   Topic 6.2.6 Adherence to Legal and Organisational Standards
2. Refer to Unit 6.2: Work Operations and Quality Compliance
   Topic 6.2.7 Documentation and Safe Closure of Tasks
3. Refer to Unit 6.2: Work Operations and Quality Compliance
   Topic 6.2.7 Documentation and Safe Closure of Tasks
4. Refer to Unit 6.2: Work Operations and Quality Compliance
   Topic 6.2.3 Preparing the Work Area
5. Refer to Unit 6.1: Health, Safety and Environmental Practices
   Topic 6.1.1 Workplace Health and Safety Practices



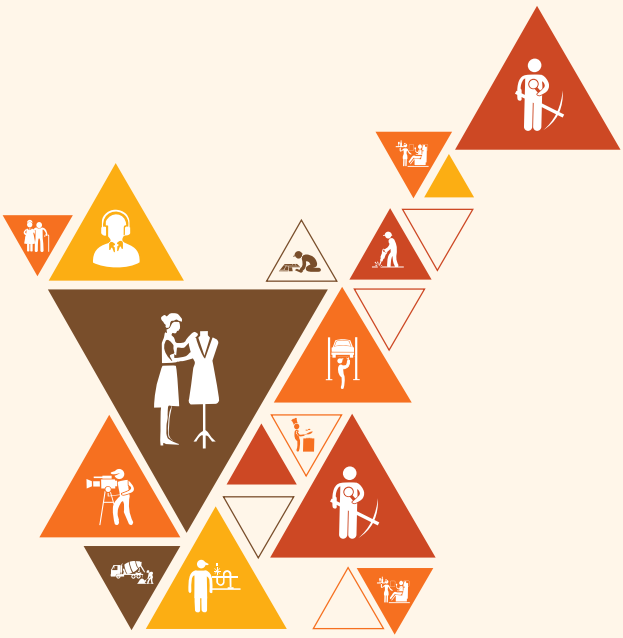
Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

7. Employability Skills



DGT/VSQ/N0102

Employability Skills is available at the following location

https://www.skillindiadigital.gov.in/content/list

Employability Skills

Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

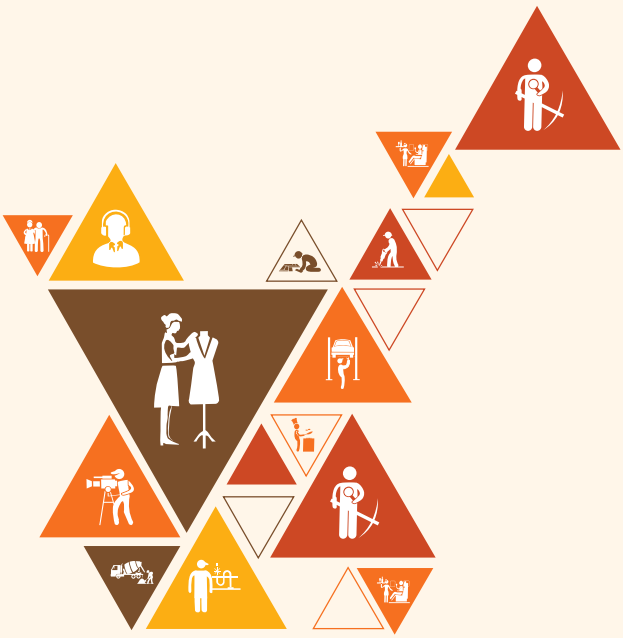
A National Initiative with NSDC
APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

8. Annexures

Annexure I: Training Delivery Plan

Annexure II: Assessment Criteria

Annexure III: List of QR Codes Used in PHB



Annexure I

Training Delivery Plan

Training Delivery Plan			
Program Name:	Advanced Pattern Maker(CAD/CAM)		
Qualification Pack Name & Ref. ID	Advanced Pattern Maker(CAD/CAM), AMH/Q1101		
Version No.	4.0	**Version Update Date**	18/02/2028
Pre-requisites to Training (if any)	Not Applicable		
Training Outcomes	**After completing this programme, participants will be able to:** 1. Elaborate on the prerequisites needed for smooth CAD CAM operations. 2. Elucidate how to operate CAD CAM machines to draft patterns and set parameters. 3. Describe the process of taking prints of mini markers and related tasks. 4. Discuss how to maintain the work area machinery tools and equipment effectively. 5. Explain the importance of maintaining health safety and a secure workplace with gender and PwD sensitisation. 6. Highlight the role of soft skills in improving communication and teamwork through the bridge module. 7. Illustrate the connection between technical skills and workplace readiness for advanced pattern making.		

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
1.	**Introduction and Orientation to Advanced Pattern Maker**	**Introduction and Orientation to Advanced Pattern Maker**	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Advanced Pattern Maker' in the apparel industry. • Elucidate the apparel production process and the role that the 'Advanced Pattern Maker' plays in the process.	Bridge Module	Classroom lecture/ PowerPoint Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	3 Theory (03:00) Practical (00:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
2	**Prepare to develop pattern through (CAD/CAM)**	**Information Management for CAD/CAM**	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on downloading and organising information obtained by the designer or buyer. • Describe analysing specific information and translating it according to company procedures. • Illustrate coordinating with the merchandiser to ensure clarity of information and resolve any possible misinterpretations.	AMH/N1101, PC1, PC2, PC3, KU1, KU2	Classroom lecture/ Power-Point Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	8 Theory (03:00) Practical (05:00)
		CAD Drafting and Digitisation	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Illustrate drafting a pattern on CAD software based on given specifications. • Describe the process of digitising a manual pattern for use in CAD. • Elucidate the fundamental principles of the CAD/CAM operating system.	AMH/N1101, PC4, KU6, KU7			7 Theory (02:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Pattern Specification Adjustment	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on adjusting pattern specifications to meet required standards and allowances. • Describe the CAD/CAM operating system and its core principles. • Elucidate the process of pattern modeling and testing using CAD software.	AMH/N1101, PC5, KU6, KU7			6 Theory (01:00) Practical (05:00)
		Pattern Grading and Shrinkage	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on incorporating shrinkage into patterns based on the bill of materials. • Describe the process of performing size-wise grading of patterns. • Elucidate the process of modeling, testing, and grading patterns using CAD software.	AMH/N1101, PC6, KU5, KU6, KU7			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Cut Ratio Planning	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Describe how to determine the cut ratio plan for a given set of patterns. • Elucidate the principles of lay planning with an emphasis on accuracy. • Outline the process of using CAD/CAM software to determine the most efficient cut ratio.	AMH/N1101, PC7, KU8			6 Theory (01:00) Practical (05:00)
		Efficient Marker Making	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Illustrate performing the most efficient marker or lay planning according to the intended configuration. • Elaborate on the principles of lay planning with a focus on accuracy. • Describe the use of CAD software for creating and optimising markers.	AMH/N1101, PC8, KU8, KU6			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		CAM Parameter Setting	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on setting parameters on the CAM machine to achieve the required output. • Describe the CAD/CAM operating system and its principles. • Outline the process of setting machine parameters as per the manufacturer's instructions.	AMH/N1101, PC9, KU3, KU6			6 Theory (01:00) Practical (05:00)
		Final Design Output	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elucidate the process of ensuring the design output is cut and handed over to the next department. • Describe how to complete work systematically with attention to detail. • Illustrate avoiding damage to goods and equipment during the handover process.	AMH/N1101, PC10, KU4			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Data Backup and Management	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Illustrate ensuring the work is saved as a back-up before shutting down the CAD machine. • Elucidate the importance of completing work systematically to prevent data loss. • Describe the procedures for backing up digital patterns and files.	AMH/N1101, PC11, KU4			6 Theory (01:00) Practical (05:00)
		Mini Marker Printing	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Describe how to take a printout of the mini marker for reference. • Elucidate the purpose of providing a mini marker printout to the merchandiser. • Outline the steps for printing and handing over the mini marker.	AMH/N1101, PC12			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		System Shutdown Procedure	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elucidate the correct procedure for carefully shutting down the CAD/ CAM system after every use. • Describe the importance of following company instructions for system shutdown. • Illustrate the process of ensuring all work is saved and the system is powered down correctly.	AMH/N1101, PC13, KU4			6 Theory (01:00) Practical (05:00)
		Workplace Communi-cation and Culture	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on an organisation's policies, procedures, and guidelines for dealing with buyers and clients. • Describe the process of recognising and adapting to cultural differences in the workplace. • Illustrate appropriate modes of behaviour and interactions in a professional setting.	AMH/N1101, KU1, KU2			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Machine Parameter Setting Knowledge	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elucidate how to set machine parameters as per manufacturer's instructions. • Describe the importance of following manufacturer guidelines to prevent equipment damage. • Outline the key parameters that must be set on a CAM machine for proper operation.	AMH/N1101, KU3			6 Theory (01:00) Practical (05:00)
		Systematic Work and Attention to Detail	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elaborate on the importance of completing work systematically with attention to detail. • Describe methods to prevent damage to goods and equipment during operations. • Illustrate how a systematic workflow contributes to accuracy and efficiency.	AMH/N1101, KU4			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Garment Construction Principles	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elucidate various garment construction techniques and processes. • Describe the flow of garment production from pattern to final product. • Illustrate how understanding construction techniques informs pattern development.	AMH/N1101, KU5			6 Theory (01:00) Practical (05:00)
		CAD/CAM Principles and Processes	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process. • Elucidate the CAD/CAM operating system and its underlying principles. • Describe the process of modeling, testing, and grading using CAD software. • Outline the application of CAD/CAM systems in garment production, including lay planning with accuracy.	AMH/N1101, KU6, KU7, KU8			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
3	**Develop the pattern through (CAD/CAM)**	**Information Management for CAD/CAM**	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process.	AMH/N1101, PC1, KU1; KU2	Classroom lecture/ Power-Point Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	8 Theory (03:00) Practical (05:00)
		Information Analysis and Coordination	• Elaborate on analysing specific information obtained from the designer or buyer. • Describe how to translate information according to company procedure. • Illustrate coordinating with the merchandiser to ensure clarity of information and resolve possible misinterpretations.	AMH/N1101, PC2, PC3, KU1; KU2			7 Theory (02:00) Practical (05:00)
		Pattern Drafting	• Describe how to draft a pattern or digitise the manual pattern on CAD software as per specifications. • Elaborate on adjusting pattern specifications according to standards and allowances. • Illustrate incorporating shrinkage and performing size-wise grading of patterns as per BOM.	AMH/N1101, PC4, PC5, PC6, KU5; KU6; KU7			6 Theory (01:00) Practical (05:00)
		Cut Ratio Planning	• Describe the process of determining the cut ratio plan. • Elaborate on planning marker efficiency according to intended configuration. • Illustrate how to set parameters on CAM to achieve the required output.	AMH/N1101, PC7, PC8, PC9, KU6; KU8			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Design Output Management	• Describe how to ensure the design output is properly cut and handed over to the next department. • Elaborate on the importance of saving work as a back-up before shutting down CAD machines. • Illustrate taking printouts of mini markers for reference to merchandisers.	AMH/N1101, PC10, PC11, PC12, KU4; KU6			6 Theory (01:00) Practical (05:00)
		CAD/CAM Shutdown Procedures	• Describe the correct procedure to shut down CAD/CAM systems after every use. • Elaborate on following company instructions for safe shutdown. • Illustrate the importance of preventing damage to goods and equipment during shutdown.	AMH/N1101, PC13, KU3; KU4			6 Theory (01:00) Practical (05:00)
		Organisational Guidelines	• Describe organisation's policies, procedures, guidelines, and standards for dealing with buyers/clients. • Elaborate on the importance of recognising and adapting to cultural differences in the workplace. • Illustrate the correct methods of interaction according to workplace norms.	AMH/N1101, KU1; KU2			6 Theory (01:00) Practical (05:00)
		Machine Parameter Settings	• Describe how to set machine parameters as per manufacturer's instructions. • Elaborate on configuring CAD/CAM systems for optimal performance. • Illustrate completing CAD/CAM work systematically with attention to detail.	AMH/N1101, KU3; KU4; KU6			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Garment Construction Knowledge	• Describe basic garment construction techniques and processes. • Elaborate on how garment construction affects pattern drafting. • Illustrate integrating construction knowledge in CAD/CAM pattern making.	AMH/N1101, KU5			6 Theory (01:00) Practical (05:00)
		CAD/CAM Operating System	• Describe principles of CAD/CAM operating systems. • Elaborate on features that assist in modeling, testing, and grading patterns. • Illustrate system operations for accurate pattern development.	AMH/N1101, KU6; KU7			6 Theory (01:00) Practical (05:00)
		Pattern Modeling and Grading	• Describe the process of modeling patterns on CAD software. • Elaborate on testing patterns for accuracy and adjustments. • Illustrate performing grading of patterns according to size specifications.	AMH/N1101, KU7			6 Theory (01:00) Practical (05:00)
		Marker Planning	• Describe lay planning techniques for maximum fabric utilisation. • Elaborate on accuracy considerations in marker planning. • Illustrate how marker planning affects cut efficiency and material savings.	AMH/N1101, KU8			6 Theory (01:00) Practical (05:00)
		CAD/CAM Work Accuracy	• Describe how to maintain accuracy in CAD/CAM operations. • Elaborate on methods to prevent errors during pattern development. • Illustrate the importance of systematic working for quality assurance.	AMH/N1101, KU4; KU6; KU7			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Communication and Coordination	• Describe how to effectively communicate pattern specifications to merchandisers. • Elaborate on coordinating with different teams to resolve discrepancies. • Illustrate the importance of clear instructions for production efficiency.	AMH/N1101, PC3, KU1; KU2			6 Theory (01:00) Practical (05:00)
		Size-wise Adjustments	• Describe methods to incorporate shrinkage in pattern grading. • Elaborate on adjusting patterns according to standard allowances. • Illustrate performing size-wise grading accurately as per BOM.	AMH/N1101, PC6, KU5; KU7			6 Theory (01:00) Practical (05:00)
		Output Documentation	• Describe how to take printouts of mini markers for production reference. • Elaborate on documenting pattern outputs for future use. • Illustrate the importance of maintaining backup files of CAD work.	AMH/N1101, PC11, PC12, KU4; KU6			6 Theory (01:00) Practical (05:00)
4	**Take the print-out through (CAD/CAM)**	**Information Management for CAD/CAM Print**	• Describe the outline of the Apparel industry in India. • Elaborate on various employment opportunities for an 'Inline Checker Sewing' in the apparel industry. • Elucidate the apparel production process and the role that the 'Inline Checker Sewing' plays in the process.	AMH/N1101, PC1, KU1; KU2	Classroom lecture/ PowerPoint Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	8 Theory (03:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Information Analysis and Coordination	• Elaborate on analysing specific information obtained from the designer or buyer. • Describe how to translate information according to company procedure. • Illustrate coordinating with the merchandiser to ensure clarity of information and resolve possible misinterpretations.	AMH/N1101, PC2, PC3, KU1; KU2			7 Theory (02:00) Practical (05:00)
		Pattern Drafting	• Describe how to draft a pattern or digitise the manual pattern on CAD software as per specifications. • Elaborate on adjusting pattern specifications according to standards and allowances. • Illustrate incorporating shrinkage and performing size-wise grading of patterns as per BOM.	AMH/N1101, PC4, PC5, PC6, KU5; KU6; KU7			6 Theory (01:00) Practical (05:00)
		Cut Ratio Planning	• Describe the process of determining the cut ratio plan. • Elaborate on planning marker efficiency according to intended configuration. • Illustrate how to set parameters on CAM to achieve the required output.	AMH/N1101, PC7, PC8, PC9, KU6; KU8			6 Theory (01:00) Practical (05:00)
		Design Output Management	• Describe how to ensure the design output is properly cut and handed over to the next department. • Elaborate on the importance of saving work as a back-up before shutting down CAD machines. • Illustrate taking printouts of mini markers for reference to merchandisers.	AMH/N1101, PC10, PC11, PC12, KU4; KU6			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		CAD/CAM Shutdown Procedures	• Describe the correct procedure to shut down CAD/CAM systems after every use. • Elaborate on following company instructions for safe shutdown. • Illustrate the importance of preventing damage to goods and equipment during shutdown.	AMH/N1101, PC13, KU3; KU4			6 Theory (01:00) Practical (05:00)
		Organi-sational Guidelines	• Describe organisation's policies, procedures, guidelines, and standards for dealing with buyers/clients. • Elaborate on the importance of recognising and adapting to cultural differences in the workplace. • Illustrate the correct methods of interaction according to workplace norms.	AMH/N1101, KU1; KU2			6 Theory (01:00) Practical (05:00)
		Machine Parameter Settings	• Describe how to set machine parameters as per manufacturer's instructions. • Elaborate on configuring CAD/CAM systems for optimal performance. • Illustrate completing CAD/CAM work systematically with attention to detail.	AMH/N1101, KU3; KU4; KU6			6 Theory (01:00) Practical (05:00)
		Garment Construc-tion Knowl-edge	• Describe basic garment construction techniques and processes. • Elaborate on how garment construction affects pattern drafting. • Illustrate integrating construction knowledge in CAD/CAM pattern making.	AMH/N1101, KU5			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		CAD/CAM Operating System	• Describe principles of CAD/CAM operating systems. • Elaborate on features that assist in modeling, testing, and grading patterns. • Illustrate system operations for accurate pattern development.	AMH/N1101, KU6; KU7			6 Theory (01:00) Practical (05:00)
		Pattern Modeling and Grading	• Describe the process of modeling patterns on CAD software. • Elaborate on testing patterns for accuracy and adjustments. • Illustrate performing grading of patterns according to size specifications.	AMH/N1101, KU7			6 Theory (01:00) Practical (05:00)
		Marker Planning	• Describe lay planning techniques for maximum fabric utilisation. • Elaborate on accuracy considerations in marker planning. • Illustrate how marker planning affects cut efficiency and material savings.	AMH/N1101, KU8			6 Theory (01:00) Practical (05:00)
		CAD/CAM Work Accuracy	• Describe how to maintain accuracy in CAD/CAM operations. • Elaborate on methods to prevent errors during pattern development. • Illustrate the importance of systematic working for quality assurance.	AMH/N1101, KU4; KU6; KU7			6 Theory (01:00) Practical (05:00)
		Communication and Coordination	• Describe how to effectively communicate pattern specifications to merchandisers. • Elaborate on coordinating with different teams to resolve discrepancies. • Illustrate the importance of clear instructions for production efficiency.	AMH/N1101, PC3, KU1; KU2			6 Theory (01:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Size-wise Adjustments	• Describe methods to incorporate shrinkage in pattern grading. • Elaborate on adjusting patterns according to standard allowances. • Illustrate performing size-wise grading accurately as per BOM.	AMH/N1101, PC6, KU5; KU7			6 Theory (01:00) Practical (05:00)
		Output Documentation	• Describe how to take printouts of mini markers for production reference. • Elaborate on documenting pattern outputs for future use. • Illustrate the importance of maintaining backup files of CAD work.	AMH/N1101, PC11, PC12, KU4; KU6			6 Theory (01:00) Practical (05:00)
5	**Maintain work area, machinery, tools and equipment**	**Work Area and Tool Maintenance**	• Describe the importance of handling materials, equipment, computer, and software safely and correctly to maintain a clean and hazard-free working area. • Elaborate on using correct handling procedures and maintaining tools and equipment while promoting sustainable consumption practices. • Illustrate working in a comfortable position and maintaining correct posture during operations.	AMH/N1102, PC1, PC2, PC3, KU1; KU2; KU3	Classroom lecture/ PowerPoint Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	8 Theory (03:00) Practical (05:00)
		Work Interruption Management	• Describe how to deal with work interruptions effectively to maintain productivity. • Elaborate on identifying potential disturbances in the work process and taking appropriate action. • Illustrate maintaining workflow continuity while adhering to safety and quality standards.	AMH/N1102, PC4, KU4; KU5			8 Theory (03:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Routine Maintenance	• Describe carrying out running maintenance and cleaning within one's responsibility and agreed schedules. • Elaborate on reporting unsafe equipment and other dangerous occurrences to concerned personnel. • Illustrate using cleaning equipment and methods appropriate for the work to be carried out.	AMH/N1102, PC5, PC6, PC7, KU12; KU13; KU14			8 Theory (03:00) Practical (05:00)
		System and Software Management	• Describe how to request upgrading of systems or software when required for effective working. • Elaborate on maintaining backup files while working on various design software. • Illustrate organising and maintaining all soft copies of design work for future reference.	AMH/N1102, PC8, PC9, PC10, KU6; KU7; KU8			8 Theory (03:00) Practical (05:00)
		Health, Hygiene and Safety	• Describe the importance of good health, personal hygiene, and duty of care in the workplace. • Elaborate on following safe working practices, codes of conduct, and social accountability standards. • Illustrate maintaining awareness of the limits of one's own responsibility while performing tasks.	AMH/N1102, KU1; KU2; KU3			8 Theory (03:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Communication and Reporting	• Describe the line and importance of effective communication with superiors and colleagues. • Elaborate on the organisation's rules, codes, quality standards, and reporting procedures. • Illustrate interpreting work instructions and specifications accurately for operational efficiency.	AMH/N1102, KU5; KU6; KU7			8 Theory (03:00) Practical (05:00)
		Waste Minimisation and Contamination Control	• Describe different ways of minimising waste in the workplace. • Elaborate on the effects of contamination on products, such as machine oil and dirt. • Illustrate applying methods to maintain clean and safe work areas to prevent product defects.	AMH/N1102, KU11; KU13; KU16			8 Theory (03:00) Practical (05:00)
		Sustainable and Green Practices	• Describe maintenance procedures and common faults with equipment and methods to rectify them. • Elaborate on safe working practices for cleaning and the method of carrying them out. • Illustrate making conscious and sustainable decisions to achieve an effective and green workplace.	AMH/N1102, KU15; KU16; KU17			8 Theory (03:00) Practical (05:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
6	**Promote and sustain safety, health, and security in workplace, while fostering Gender and Persons with Disabilities (PwD) Sensitisation**	**Workplace Safety, Gender and PwD Awareness**	• Describe the importance of adhering strictly to health, safety, gender, and PwD guidelines governing the workplace environment. • Elaborate on engaging actively in mock drills, evacuation exercises, and group discussions pertaining to workplace safety and security protocols. • Illustrate participating in advanced training and sensitisation programs focused on gender equality and PwD awareness to facilitate a more inclusive workplace environment.	AMH/N0620, PC1, PC2, PC3, KU1; KU2; KU3	Classroom lecture/ PowerPoint Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	6 Theory (03:00) Practical (03:00)
		Material and Equipment Handling	• Describe executing proper handling and maintenance of materials and equipment in accordance with established protocols and standards. • Elaborate on monitoring workplace conditions, identifying risks, and reporting promptly to ensure safety for all employees, including individuals with disabilities. • Illustrate upholding gender equality principles while handling materials and equipment safely.	AMH/N0620, PC4, PC6, KU4; KU6; KU7			6 Theory (03:00) Practical (03:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Emergency Response Procedures	• Describe performing first-aid, firefighting, and other emergency response procedures effectively. • Elaborate on adhering promptly to organisational shutdown and evacuation protocols during emergencies. • Illustrate identifying potential hazards and applying appropriate response methods to maintain workplace safety.	AMH/N0620, PC5, KU5; KU6; KU8			6 Theory (03:00) Practical (03:00)
		Gender Sensitisation and Inclusion	• Describe promoting a safe, accessible, and healthy workplace for disabled employees. • Elaborate on applying proper etiquette, communication, and assistance for people with disabilities or special needs. • Illustrate fostering gender equality and inclusivity in daily workplace interactions and processes.	AMH/N0620, PC3, KU1; KU2; KU3; KU4			6 Theory (03:00) Practical (03:00)
		Health and Safety Compliance	• Describe implementing health and safety related practices applicable at the workplace. • Elaborate on identifying, handling, and storing hazardous substances according to guidelines. • Illustrate maintaining personal hygiene, using protective equipment, and following safety signage and protocols to prevent workplace accidents.	AMH/N0620, PC1, PC5, KU5; KU9; KU10; KU11; KU12; KU13; KU14			6 Theory (03:00) Practical (03:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
7	**Employability Skills**	**Introduction to Employability Skills**	• Describe the outline of employability skills required for jobs in various industries. • Elaborate on exploring different learning and employability portals for skill enhancement. • Illustrate recognising the significance of constitutional values, civic responsibilities, and personal ethics such as honesty, integrity, and respect for others.	DGT/VSQ/ N0102, PC1, PC2, PC3, KU1; KU2; KU3	Classroom lecture/ PowerPoint Presentation/Question & Answer and Group Discussion	Whiteboard and markers, Chart paper and sketch pens, an LCD Projector and Laptop for presentations, PCs/ Laptops, and Internet with Wi-Fi (at Least 2 Mbps Dedicated).	6 Theory (06:00) Practical (00:00)
		Environmental Sustainability	• Describe following environmentally sustainable practices in the workplace. • Elaborate on recognising the significance of 21st-century skills for personal and professional growth. • Illustrate practicing skills such as self-awareness, time management, critical and adaptive thinking, problem-solving, and learning to learn.	DGT/VSQ/ N0102, PC4, PC5, PC6, KU3; KU4			6 Theory (06:00) Practical (00:00)
		Basic English Skills	• Describe using basic English for everyday conversation in different contexts, both in person and over the telephone. • Elaborate on reading and understanding routine information, instructions, emails, and letters written in English. • Illustrate writing short messages, notes, letters, and emails effectively.	DGT/VSQ/ N0102, PC7, PC8, PC9, KU5			6 Theory (06:00) Practical (00:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Career Development and Goal Setting	• Describe understanding the difference between a job and a career. • Elaborate on preparing a career development plan with short- and long-term goals based on personal aptitude. • Illustrate aligning career goals with personal and professional development opportunities.	DGT/VSQ/ N0102, PC10, PC11, KU6			6 Theory (06:00) Practical (00:00)
		Communication Skills	• Describe following verbal and non-verbal communication etiquette in various settings. • Elaborate on practicing active listening techniques for effective communication. • Illustrate working collaboratively with others in a team to achieve shared objectives.	DGT/VSQ/ N0102, PC12, PC13, KU7			6 Theory (06:00) Practical (00:00)
		Diversity and Inclusion	• Describe communicating and behaving appropriately with all genders and persons with disabilities (PwD). • Elaborate on recognising and addressing issues related to sexual harassment at the workplace according to the POSH Act. • Illustrate fostering an inclusive and respectful work environment.	DGT/VSQ/ N0102, PC14, PC15, KU8; KU9			6 Theory (06:00) Practical (00:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Financial and Legal Literacy	• Describe selecting financial institutions, products, and services as per requirement. • Elaborate on carrying out offline and online financial transactions safely and securely. • Illustrate identifying salary components, computing income, expenses, taxes, investments, and understanding relevant legal rights and laws.	DGT/VSQ/ N0102, PC16, PC17, PC18, PC19, KU10; KU11; KU12; KU13			6 Theory (06:00) Practical (00:00)
		Essential Digital Skills	• Describe operating digital devices and carrying out basic internet operations securely. • Elaborate on using email, social media platforms, and virtual collaboration tools effectively. • Illustrate using basic features of word processors, spreadsheets, and presentation tools for professional tasks.	DGT/VSQ/ N0102, PC20, PC21, PC22, KU14; KU15			6 Theory (06:00) Practical (00:00)
		Entrepre-neurship	• Describe identifying different types of entrepreneurship and assessing potential business opportunities through research. • Elaborate on developing a business plan and work model considering the 4Ps of marketing: Product, Price, Place, and Promotion. • Illustrate identifying sources of funding and mitigating potential financial and legal hurdles.	DGT/VSQ/ N0102, PC23, PC24, PC25, KU16			6 Theory (06:00) Practical (00:00)

SL	Module Name	Session name	Session Objectives	NOS	Methodology	Training Tools/Aids	Duration (hours)
		Customer Service and Job Readiness	• Describe identifying different types of customers and responding to their requests professionally. Elaborate • on following appropriate hygiene and grooming standards. • Illustrate creating a professional CV, searching for suitable jobs, applying to openings, answering interview questions confidently, and registering for apprenticeship opportunities as per guidelines.	DGT/VSQ/ N0102, PC26, PC27, PC28, PC29, PC30, PC31, PC32, PC33, KU17; KU18; KU19			6 Theory (06:00) Practical (00:00)
Total Duration							**Theory: 96:00** **Practical: 294:00**
Employability Skills (DGT/VSQ/N0102) **https://www.skillindiadigital.gov.in/content/list**							**60:00**
OJT Duration (Mandatory)							**60:00**
Total							**Theory + Practical + ES 510:00**

Annexure II

Assessment Criteria

CRITERIA FOR ASSESSMENT OF TRAINEES

Assessment Criteria for Advanced Pattern Maker(CAD/CAM)	
Job Role	**Advanced Pattern Maker(CAD/CAM)**
Qualification Pack	**AMH/Q1101 , V4.0**
Sector Skill Council	**Apparel**

S. No.	Guidelines for Assessment
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below.)
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/ training center based on these criteria.
5	To pass the Qualification Pack, every trainee should score a minimum of 70% in every NOS.
6	In case of successfully passing only certain number of NOSs, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.
7	In case of unsuccessful completion, the trainee may seek reassessment on the Qualification Pack.

Assessment Outcomes	Assessment Criteria for Outcomes	Marks Allocation		
		Theory	Practical	Viva
AMH/N1101: Pattern development through CAD/CAM	Prepare the prerequisites for CAD/CAM operation	3	12	3
	PC1. Download and organize information obtained by designer/buyer	1	5	1
	PC2. Analyze specific information and translating according to company procedure	1	6	1
	PC3. Coordinate with merchandiser to ensure clarity of information and resolve any possible misinterpretations	1	1	1
	Operate the CAD/CAM	33	114	15
	PC4. Draft the pattern or digitize the manual pattern on the CAD software as per specification given	6	30	3
	PC5. Adjust the pattern specifications as per the standard and allowances required	4	9	1
	PC6. Incorporate shrinkage and perform size wise grading of patterns as provided in the BOM (bill of material)	8	23	3
	PC7. Determine the cut ratio plan	4	9	2
	PC8. Perform the most efficient marker (lay planning) according to the configuration intended	3	12	1

	PC9. Set parameters on CAM as per required output	1	10	1
	PC10. Ensure the design output is cut and hand over to the next department	1	5	1
	PC11. Ensure the work is saved as a back-up before shutting down the CAD machine	2	4	1
	PC12. Take printout of mini marker to be handed over to the merchandiser, for reference	2	6	1
	PC13. Shut down, after every use, the CAD/CAM system carefully and in accordance with company instructions	2	6	1
	NOS Total	**36**	**126**	**18**
AMH/N1102: Maintenance of work area, machinery, tools and equipment.	To maintain the work area, tools and machines and observe greening of job functions.	16	56	8
	PC1. Handle materials, equipment, computer and software safely and correctly to maintain a clean and hazard free working area and support adaptation to more environmentally friendly processes	1	5	0.5
	PC2. Use correct handling procedures and maintain tools and equipment; and inculcate sustainable consumption practices and offer relevant greening solutions	2	10	1
	PC3. Work in comfortable position and maintain correct posture	2	10	1
	PC4. Deal with work interruptions effectively	1	1	0.5
	PC5. Carry out running maintenance and/or cleaning within one's responsibility and agreed schedules	3	15	0.5
	PC6. Report unsafe equipment and other dangerous occurrences to concerned personnel	1	-	1
	PC7. Use cleaning equipment and methods appropriate for the work to be carried out	2	5	1
	PC8. Request for upgrading of system or software when required for effective working	1	-	0.5
	PC9. Always maintain a backup file when working on various design software	2	5	1
	PC10. All soft copies of design work to be maintained in files as well for future reference	1	5	1
	NOS Total	**16**	**56**	**8**
AMH/N0620: Promote and sustain safety, health, and security in workplace, while fostering Gender and Persons with Disabilities (PwD) Sensitization	Identify process hazards, follow medical emergency and evacuation guidelines, and promote gender and PwD sensitivity.	22	12	6
	PC1. Demonstrate strict adherence to health, safety, gender, and PwD (People with Disability) guidelines governing the workplace environment.	4	2	1
	PC2. Engage actively in mock drills, evacuation exercises, and group discussions pertaining to workplace safety and security protocols.	4	2	1
	PC3. Participate in advanced training and sensitization programs focused on gender equality and PwD awareness, facilitating a more inclusive workplace environment.	4	2	1
	PC4. Execute proper handling and maintenance of materials and equipment in accordance with established protocols and standards.	3	2	1
	PC5. Exhibit proficiency in performing first-aid, firefighting, and other emergency response procedures, promptly adhering to organizational shutdown and evacuation protocols when necessary.	4	2	1

	PC6. Monitor workplace conditions, identify risks, report promptly, ensure safety, including for individuals with disabilities, and uphold gender equality principles.	3	2	1
	NOS Total	**22**	**12**	**6**
DGT/VSQ/N0102: Employability Skills (60 Hours)	Introduction to Employability Skills	1	1	-
	PC1. identify employability skills required for jobs in various industries	-	-	-
	PC2. identify and explore learning and employability portals	-	-	-
	Constitutional values – Citizenship	1	1	-
	PC3. recognize the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-
	PC4. follow environmentally sustainable practices	-	-	-
	Becoming a Professional in the 21st Century	2	4	-
	PC5. recognize the significance of 21st Century Skills for employment	-	-	-
	PC6. practice the 21st Century Skills such as Self-Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning etc. in personal and professional life	-	-	-
	Basic English Skills	2	3	-
	PC7. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-
	PC8. read and understand routine information, notes, instructions, mails, letters etc. written in English	-	-	-
	PC9. write short messages, notes, letters, e-mails etc. in English	-	-	-
	Career Development & Goal Setting	1	2	-
	PC10. understand the difference between job and career	-	-	-
	PC11. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-
	Communication Skills	2	2	-
	PC12. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-
	PC13. work collaboratively with others in a team	-	-	-
	Diversity & Inclusion	1	2	-
	PC14. communicate and behave appropriately with all genders and PwD	-	-	-
	PC15. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-
	Financial and Legal Literacy	2	3	-
	PC16. select financial institutions, products and services as per requirement	-	-	-
	PC17. carry out offline and online financial transactions, safely and securely	-	-	-
	PC18. identify common components of salary and compute income, expenses, taxes, investments etc	-	-	-
	PC19. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-
	Essential Digital Skills	3	4	-

	PC20. operate digital devices and carry out basic internet operations securely and safely	-	-	-
	PC21. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-
	PC22. use basic features of word processor, spreadsheets, and presentations	-	-	-
	Entrepreneurship	2	3	-
	PC23. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-
	PC24. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-
	PC25. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-
	Customer Service	1	2	-
	PC26. identify different types of customers	-	-	-
	PC27. identify and respond to customer requests and needs in a professional manner.	-	-	-
	PC28. follow appropriate hygiene and grooming standards	-	-	-
	Getting ready for apprenticeship & Jobs	2	3	-
	PC29. create a professional Curriculum vitae (Résumé)	-	-	-
	PC30. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers etc. and job portals, respectively	-	-	-
	PC31. apply to identified job openings using offline /online methods as per requirement	-	-	-
	PC32. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-
	PC33. identify apprenticeship opportunities and register for it as per guidelines and requirements	-	-	-
	NOS Total	**20**	**30**	**-**

Annexure III

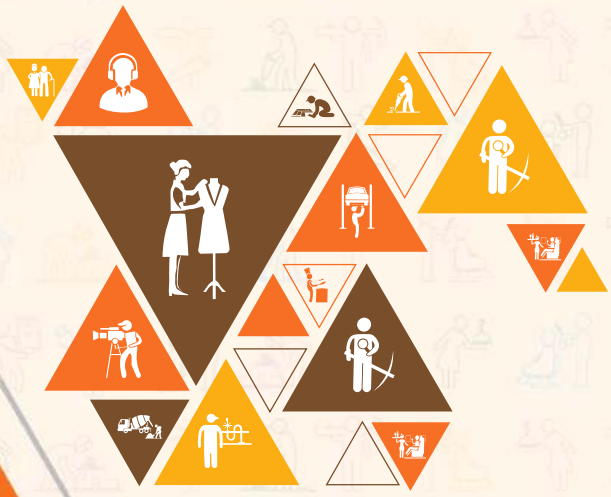
List of QR Codes Used in PHB

Module No.	Unit No.	Topic Name	Page No. in PHB	URL	QR Code (s)
Module 1: Introduction and Orientation to Advanced Pattern Maker (Bridge Module)	Unit 1.1: Overview of the Apparel Industry and the Role of an Advanced Pattern Maker	1.1.1 Employment Opportunities for Industrial Engineer	10	https://youtu.be/ddisteV3tOo?si=uFDW4QKnI-toOKknY	Textile Sector in India
		1.1.2 Apparel Production Process and Role of the Advanced Pattern Maker	10	https://youtu.be/Jfeu-rB-Vm-o?si=P8oLTmvZHd2NPwQk	Explain the role and importance of a Pattern Maker and Marker Maker in the garment industry
		1.1.4 Roles and Responsibilities of an Advanced Pattern Maker	10	https://youtu.be/BOFx1LB9I-FY?si=W74OEfq-LaAmT9He-	Pattern Making
Module 2: Prepare to develop pattern through (CAD/CAM) (AMH/N1101)	Unit 2.1: Information Flow and Planning	2.1.1 Meaning and Significance of the Spec Sheet	33	https://youtu.be/Bnfzbh-vQ05k?si=1l_p0v0xBCVvRK8I	Clothing Tech Pack
		2.1.4 Tools and Equipment Needed for Pattern Development	33	https://youtu.be/1BOvn-IwAmU?si=QRM-FZh6AzqPo-eLl	Evolution of CAD Tools

Module No.	Unit No.	Topic Name	Page No. in PHB	URL	QR Code (s)
		2.1.5 Analysing the Bill of Materials (BOM)	33	https://youtu.be/WrDu5rHA-cIM?si=BbpaL6oO-X7nN4v6K	Bill of materials
Module 3: Develop the pattern through (CAD/CAM) (AMH/ N1101)	Unit 3.1: Pattern Development and Preparation	3.1.1 Incorporation of Shrinkage in the Pattern	53	https://youtu.be/XcHqHL-vdR9Y?si=IHeW9I79w-DmCX-FOt	Shrinkage Or Dimensional Stability to wash Test Process For Fabric
	Unit 3.2: Marker Efficiency and Cutting Execution	3.2.1 Marker Types and Their Applications	53	https://youtu.be/1lGMdp-scPLk?si=VFG20fAzQ9mO6ZWz	Top 6 Best Fabric Marker Reviews In 2025
		3.2.4 Setting Parameters on CAM Systems	53	https://youtu.be/NBHYb29flX-k?si=SPqK6GH-0bJYtq47u	Basics of CAD, CAE and CAM
Module 4: Take the print-out through (CAD/CAM) (AMH/ N1101)	Unit 4.1: Processes Related to System Closure and Output Delivery	4.1.3 The CAM System for Printing	71	https://youtu.be/Hx6DXuild-Sc?si=CFGCno1Xn-wpX6ZR4	What is computer Aided Manufacturing (CAM)?

Module No.	Unit No.	Topic Name	Page No. in PHB	URL	QR Code (s)
Module 5: Maintain work area, machinery, tools and equipment (AMH/ N1102)	Unit 5.1: Safe and Efficient Use of Tools and Equipment	5.1.1 Maintenance of Tools and Equipment	100	https://youtu.be/4ZXfpfs-09g8?si=l-Jc5_rRUdLDbgD6	Types of Maintenance
		5.1.3 Cleaning Tools and Equipment	100	https://youtu.be/W_3M9l-J0yN4?si=GOiLaWisqzR42QDv	Basic Patterning Tools Every Pattern Maker Should Have
		5.1.6 Waste Disposal Protocols	100	https://youtu.be/E1Y2mg-UX-GdM?si=nior_3vyt1f-oPF69	Start Fabric Waste Recycling Business
Module 6: Promote and sustain safety, health, and security in workplace, while fostering Gender and Persons with Disabilities (PwD) Sensitisation (AMH/ N0620	Unit 6.1: Health, Safety and Environmental Practices	6.1.1 Workplace Health and Safety Practices	128	https://youtu.be/ltW7KVY-J1go?si=m0Re9uMPKqVSZVr1	Personal Protective Equipment (PPE)
		6.1.3 Mock Drills, Shutdown, and Evacuation Procedures	128	https://youtu.be/wc_YwajwW-Pg?si=KYaBhsPERV-GNIMkR	Emergency Evacuation Procedure

Module No.	Unit No.	Topic Name	Page No. in PHB	URL	QR Code (s)
		6.1.8 Personal Hygiene and Healthy Life-style	128	https://youtu.be/Co9j_HKx9f-w?si=RiyV4iP8bHZXOhcL	Personal Hygiene and Healthy Living



Skill India
कौशल भारत-कुशल भारत

सत्यमेव जयते
GOVERNMENT OF INDIA
MINISTRY OF SKILL DEVELOPMENT
& ENTREPRENEURSHIP

N·S·D·C
RE IMAGINE FUTURE

APPAREL MADE-UPS HOME FURNISHING
SECTOR SKILL COUNCIL

Address: **Apparel Made-ups & Home Furnishing Sector Skill Council**
Flat No. A-312 to A-323, 3rd Floor, Somdatt Chamber-1,
Bhikaji Cama Place, Africa Avenue, New Delhi-110066

Email: info@sscamh.com

Web: www.sscamh.com