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Tailoring and Dress Designing • Apparel and Textile Design

Tailoring and Dress Designing

Apparel and Textile Design



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Unit 5 □ Introduction to Pattern Making

Structure

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5.0 Objectives

After going through this unit you will be able to—

- Understand the Pattern Making
- Know about Historical background
- Know about Measurement Technique

Learning outcome

After learning about pattern making, its help to make a proper dress with proper fittings and measuring technic help to take proper measurement.

5.1 Introduction

Pattern making function connects design to production by producing paper templates for all the components, such as cloth, lining and fusible. Which have to be cut for a garment. Pattern making is a highly skilled technique, which calls for technical ability a sensitivity for design interpretation and a practical understanding of the process technology used by the factory industrial pattern making has two basic stages, the block pattern and the garment pattern.

5.2 Pattern Making and Garment Production

Pattern making function connects design to producing paper templates for all the components, such as cloth, lining and fusible, which have to be cut for a garment. Patternmaking is a highly skilled technique, which calls for technical ability, a sensitivity for design interpretation and a practical understanding of the process technology used by the garment pattern.

5.2.1 The Block Pattern

This is a basic pattern without any style features and incorporates the measurements, proportions and posture of the today for which garments, developed from this pattern, are intended. The block pattern can be created by either of the following methods.

- a) **Flat Method** : The components of the pattern, usually the body and sleeves, are constructed by a draft (technical drawing), which incorporates the

measurements and proportions of the particular system used by the pattern maker. This type of pattern draft can also be produced by a computer, which has been programmed to construct basic patterns according to given measurements and proportions.

- b) **Modeling** : This was the original method of constructing garment patterns before the advent of the flat systems and it is still widely used in the haute couture end of the clothing business. Modeling entails the fitting of the block garment, usually in toll on a workroom stand of the appropriate size, when the fit and balance are satisfactory, the toile is removed from the stand and each component is copied on the pattern paper and the necessary making – up allowances added.

Flat systems owe their origins to modeling because a pattern draft is only a quick and standardized method of reproducing the basic components, which were originally arrived at through modeling.

5.2.2 The Garment Pattern

The styled patterns used for cutting the original sample garments can be developed by a variety of means, including the that method, modeling or a combination of both, when using the flat method the pattern maker superimposes the style lines of the garment on to a copy of the block pattern, performs the necessary manipulations and then adds the requisite sawing and other allowances to each component. Related components are aligned to check their accuracy and nips. Notches are made in the seam lines as guides for alignment and matching during sewing and making up.

The conventional methods of pattern construction are gradually being replaced by computerized systems, which interact with the pattern maker. The essential features of this technology are pattern design and pattern generation systems.

5.2.3 Pattern Design Systems

The pattern maker inputs to the system all the block patterns in current use. With the aid of the computer the pattern maker can construct garment patterns from them . alternatively a previously constructed pattern, stored in the system can be used as the base pattern for a new style. It is also possible to store specific features such as collars, lapels and pockets, provided the pattern maker has inputted matching alignment points. For example, an existing lapel can be literally stuck-on to a different forepart with a minimum of time and effort.

The finalized patterns can be plotted for verification before cutting them out, or

they can be cut out on a regular plotter using a cutting head instead of a pen. Due to the many set routines built into pattern design systems. The productivity of the pattern maker is substantially higher than that achieved when using the traditional methods of tracing, drawing, cutting out and marking by hand. The increased productivity of PDS (Pattern Design System) makes a significant reduction in the throughput time of new samples, and this a one the important factors of quick response technology.

5.2.4 Pattern Generation Systems

When the pattern components for the top cloth have been developed on the computer via PDS, the pattern generation system (PGS) automatically generates the patterns for auxiliary components such as linings and fusible. It operates according to rules specified in advance by the pattern maker on the relationship between top cloth and lining or top cloth and fusible. The playing matrix of the system can also take into account the characteristics of the top cloth to be used , incorporating this information when generating the auxiliary patterns. A typical example of this is the generation of a top collar from the under collar pattern where, if a heavy cloth is to be used. The fullness allowance would be different from that required or a lightweight fabric.

5.3 Historical Background

The art of tailoring can be traced back at least to the fourteenth century . when it became fashionable in Europe to add an under layer of packing in the chest area of men's jackets Rather than taking its from the contours of the wearer's body the garment fabric was cut and carefully shaped in fit over the packed from. Through the ages the packing was extended according to fashion, to the sleeves the shoulders, even to the stomach area. The padded under structure provided what was considered to be the improvements ever the contours of the body it also enabled the garment fabric to lie mealy, relatively unaffected by the body's wrinkle movements.

The construction techniques developed to create these structured garments were quite different from those used to produce shirts and dresses . by the sixteenth century the makers of men's jackets had formed a separate branch of the clothing makers guild's, complete with precise specifications for the quality and color of packing materials and linings for gentlemen's silk brocade jackets. By the late seventeenth century women's fashion began to be influenced by the man tailored coat, tailors were presented with the new challenger of adapting their craft to feminine from and fancy.

Not until the early nineteenth century did careful fit become a criterion of well-tailored garments the under structure remained, but the shaping became more subtle, its purpose now being to complement rather than to distort the natural lines of the body. Great attention was also given to the flawless lay of the garment fabric over the canvas form. The lapel was to roll gracefully open at the chest, without pulling the garment forward, away from the body all edge of the jacket were to belie the existence of the several layers of fabric beneath, by being flat and sharp, without noticeably bulk. The collar, and all curved edges of the garment were to incline slightly inward toward the body which causes a graceful avoidance of the awkward upward curl of collar tips and pocket flaps pockets were never to gape open when not in use. And vents were expected to lie flat and firm. The result was a clean definition of design lines, a controlled yet graceful presentation of the garment fabric, impeccable fit, form and detail.

Today's tailors continue to practice their art almost exactly as it was practiced a century ago. Not because slower is necessarily better, but because these methods produce body and form, detail and durability which newer, faster methods of tailoring are simply unable to equal.

5.4 Measurement Techniques

5.4.1 Measurements

Proper instruments are necessary for making good drillings and proper patterns. A number of measurement charts are available for making paper patterns. They are all based on anthropometric surveys (body measurement surveys). These surveys have been conducted in the advanced countries and not in India.

For making the drafting or pattern making of a particular person, body measurements have to be taken. Points to remember while taking body measurements are.

- Correct standing position in erect posture

- Persons should be wearing well fitted garments.

- Tell the person to take a deep breath to allow some ease

- While taking round measurements make sure that the tape is parallel to the and is not sagging down.

- The procedure for taking body measurements is as follows.

Waist length : from highest point of shoulder over the bust point to the waist

Round bust : round measurement taken over the fullest part of bust in front and over the lower part of shoulder blades in back.

Round waist : round measurement taken closely but not tightly around the waist.

Across shoulders : from arms eye to arms eye at the top of the shoulder across the neck.

Pivot point : From highest point of shoulder to the bust point.

Round Hips : Measure around the widest part of hips with two fingers inside the tape

Overarm Length : Bend the arm keeping the hand at the waist and measure by passing through.

Underarm Length : From armpit to wrist, measured on straight arm and not on bent arm.

Round Elbow : Measurement taken round the elbow with arm

Round Wrist : Measurement taken round the wrist

5.4.2 The Concept of Wearing Ease

Fitted garments are not made on exact body measurements. Some amount of wearing ease is essential, it is an allowance that makes a garment comfortable to the wearer. Ease varies according to the looseness desired at different parts of the body.

5.4.3 Tools and Equipment

The following tools and equipments are essential from the pattern making and garment construction point of view.

Working Surface : A flat surface is required. Ideally it should be 90-92 cm. high.

Paper : Strong brown paper is used for patterns. Parchment or window card should be used for blocks that are used frequently

Pencils : use hard pencils for drafting problems (2H), and colored pencils to outlining complicated areas.

Fiber Pens : For writing clear instruments patterns.

Bent Handle Shears : these shears are designed for the most convenient and

careful cutting of fabric in use. The handle bents up and away from the cutting surface while the blade is allowed to slide along the surface without disturbing the layout of the fabric. A 10 (25.4 cm.) to 12 (30.5 cm.) pair will handle most of the tailoring needs . fine shears will give best service if they are oiled and sharpened when necessary, and if they are not used to cut materials other than fabric.

Thread Snips : Small, sharp. Pointed scissors are used for easy access to small areas, and for cutting threads.

Clay Tailor's Chalk : while clay chalk is used for marking pattern information into the garment fabric. The edge of the chalk should be sharpened before use, for a clean, fine line. Clay chalk can be brushed away easily when no longer needed. However, avoid pressing on top of the chafe marks. As this will make removal more difficult, Darker colored chawks are used for markings on interfacings.

Tape measure : Tape measure is necessary for taking body measurements. Available with inches printed on one side and centimeters on the other Special tape measures are also available for taking the inseam measurement for trousers. These tape measures have cardboard stiffening at one end. The cardboard, and not the tailors hand can be placed at the top of the seam for measuring Plastic, rather than cloth tape measures should be purchased since those made of cloth are inclined to shrink.

Ruler : Flexible, plastic see through rulers are very convenient for measuring curved areas on patterns and fabric, as well as for flat surfaces. Do keep them away from the iron.

Hip Curve Ruler : It is a gracefully curved ruler essential for making and adjusting pattern lines

Straight Pins : Either dressmaker pins, which are of medium thickness, or silk pins, which are somewhat thinner are appropriate for tailoring needs.

Basting Thread : while cotton thread #40 - #50, easy to break for removal when necessary

General Sewing Thread : Mercerized cotton thread, slid thread, is suitable for both hand and machine stitching.

Rubber, Metric ruler, Curved ruler, Meter stick

Set Square : A large setsquare with a 45 degree angle is very useful, metric grading squares can be obtained with this equipment.

Metric Tape Measure, Tracing Wheel

Shears : Use separate shears for cutting cloth and paper, as cutting paper will blunt the blades, Sell tape, Pins

One –Quarter and one –fifth Scale Squares : These are essential for students to record pattern blocks and adaptations in their notebooks.

Stanley Knife

Tailor’s Fabrics : Calico is used for making toile’s for designs in woven fabrics. Make sure the weight of the calico is as close to the weight of the cloth as possible knitted fabric of the same stretch quality must be used for making toile’s for designs in jersey fabrics

Metric Square

Calculator : The calculator is now a common tool in all areas of skill ;

French Curves : Plastic shapes and curves ;

Pattern Notched, Pattern Punch, Pattern Hooks, Pattern Weights, Model Strands, Computer Equipment

5.5 Figure Measurement

5.5.1 Direct Measurement

The following are standard measurements taken by tailors, and used by them to draft patterns, while will fit their clients as closely and as comfortable as possible . in conjunction with the measurements, the tailor also notes important information about the client’s body : whether her posture is stooped or overly erect. Whether her shoulders are square or sloped, whether her bust and buttocks are full or flat, whether her stomach protrudes. Whether one hip or one shoulder is higher than the other etc.

5.5.2 Taking Measurements

The first five measurements are taken over the best fitting jacket the client has available . don’t be concerned if the jacket is not a perfect fit. You will have an opportunity to improve the fit during the measurements and the muslin fatling.

1. **Centre back/Neck to waist** : With the jacket collar up, measure from the collar seam to the waist at centre back.
2. **Centre back Neck to hip** : with the tape measure touching the body at the

- waist measure from the collar seam to the hip level . of course the length of your jacket depends on the style you have chosen. Take your measurement to the hip level as a point of reference : for adjustments in the muslin fitting.
3. **Back** : At about centre armhole lever, measure across the back from the armhole seam to the centre back seam.
 4. **Shoulder** : Measure the shoulder seam from collar seam to armhole seam.
 5. **Sleeve Length** : Measure the sleeve from the shoulder seam to the hem fold taking into consideration the slight rise of the sleeve over the shoulder pad.
 6. **Bust Level** : Measure around the body at the fullest part of the bust. This measurement can be taken over a blouse, but not a sweater. Check that the tape measure is at the same level at the back as in the front. The measurement should be comfortable, neither too loose nor too light.
 7. **Bust Level** : Measure from the shoulder (about 1* (2.5 cm.) from the base of the neck down to the centre of the bust. Be aware that this measurement can change significantly depending on the bra that is worn. Therefore, the type of bra that will usually be worn under the jacket should be worn for this measurement.
 8. **Waist** : The waist measurement can be taken over a blouse but not over a skill waistband or a belt. The measurement should be comfortable but without additional ease .
 9. **Hip Level** : Measure down from the waist at the seam, to the level at which the hips are fullest.
 10. **Hips** : The hip measurement can be taken over an unbulky straight skirt or trousers. The pockets, if any, should be empty and the clients feet should be together. With two fingers under the tape for ease, measure around the fullest part of the hip,
 11. **Skirt Length** : Measure down from the waist at the side seam, to the desired length of the skirt.
 12. **The Fly** : Measure the fly from what would be the top of the waist banc, down to the beginning of the curve of the crutch .
 13. **Pants Inseam** : With the pants waistline at a comfortable level for the client, measure the pants inseam from the crotch to the middle of the shoe.
 14. **Pants Out seam** : With the pants waistline at a comfortable level for the client measure down the out seam from the top of the waistband to the middle of the shoe.

15. **Knee Width** : Measure across the knee of the pants from crease to crease.
16. **Width of Pants at Hem** : Measure across the bottom edge of the pants leg from crease to crease.

5.5.3 Size coded and Associated Body Measurements

Size Codes	Body Measurements From cm.	Hips To cm.	Body Measurements From cm.	Bust To cm.
8	83	87	78	82
10	87	91	82	86
12	91	95	86	90
14	95	99	90	94
16	100	104	95	99
18	105	109	100	104
20	110	114	105	109
22	115	119	110	114
24	120	124	115	119
26	125	129	120	124
28	130	134	125	129
30	135	139	130	134
32	140	144	135	139

5.5.4 Women of Medium Hight 160 cm. - 170 cm. (5Ft 2½in - 6Ft ½ in)

Size Symbol	8	16	24
Bust	80	97	117
Waist	60	77	97
Hips	85	102	122
Back Width	32.4	36.6	41.4
Chest	30	35	41
Shoulder	11.75	12.8	14
Neck Size	35	39.2	44
Dart	5.8	8.2	10.6

Top Arm	26	31	37.8
Wrist	15	17	19
Ankle	23	25.1	27.5
High Ankle	20	22.1	24.5
Nape to Waist	39	41	43
From Shoulder to Waist	39	41.3	44.5
Armhole Depth	20	22	24.2
Waist to Knee	57.5	59.5	61,25
Waist to Hip	20	21.2	22.3
Waist to Floor	102	106	109.5
Body Rice	26.6	29.4	32.5
Sleeve Length	57.2	59.5	61.2
Sleeve Length (Jersey)	51.2	53.5	55.2

The chart is compiled for High Street Fashion garments

Small = approx size 8 – 10

Medium = size 12

Large = approx size 14 – 16

XLarge = size 18

Example 1 :

	SMALL	MEDIUM	LARGE	XLARGE
	92-96	100-104	108-112	116-120
Chest	96	104	112	120

Or,

Example 2 :

	SMALL	MEDIUM	LARGE	XLARGE
	88-92	96-100	104-108	112-116
Chest	92	100	108	116

Body Measurement Chart for Small Medium Large – Xlarge Sizes

The six chart offered below uses the range of Example 2 shown above. It is useful for the younger unisex (athletic) market and has some height

5.5.5 Differential in the larger sizes

Chest Size Between	SMALL	MEDIUM	LARGE	XLARGE
Chest	92	100	108	116
Seat	94	102	110	118
Natural Waist	75	83	91	99
Trouser waist (4cm. below Natural Waist)	78	86	94	102
Half Back	19	20	21	22
Natural Waist Length	44	44.8	45.6	46.4
Scye Depth	23	24.6	26.2	27.8
Neck Size (Easy Fitting)	39	41	43	45
Sleeve Length One Piece Sleeve	64	65	66	67
Sleeve Length Two Piece Sleeve	80	82	84	88
Inside Leg	79	81	83	85
Body Rise	27.5	28.5	29.5	30.5
Close Wrist Measurement	16.8	17.6	18.4	19.2

5.6 Terms of Pattern Making

5.6.1 Pattern Making Terms

The following terms and definitions are related to the workroom

Pattern drafting : A system of pattern making that is depends on measurements takes from a form or model to cleat basic. Foundation, or design patterns. An example is the draft to the basic pattern set

Flat patternmaking : A system of patternmaking that is dependent on previously developed patterns. In flat patternmaking the patterns are manipulated by using a slash or pivotal method to create design patterns.

Basic pattern set : A five piece pattern set, consisting of front and back bodice and skirt and long sleeve, which represents the dimensions of a specific form of figure it is developed without design features. The traced copy is referred to as a working pattern.

Working pattern : Any pattern used as a base for manipulation when generating design patterns.

5.6.2 Pattern Production Terms

First Patterns : The original pattern developed for each design. This pattern is generally made from marking paper and usually requires fitting and adjustments half a pattern is developed unless the design is asymmetrical.

Production Pattern : The production pattern is a pattern set that has been corrected and perfected and contains every pattern piece required to complete the garment it is used by the grader for grading sizes, and by the marker maker for a fabric layout.

Marker maker : The marker makers responsibility is to lay the production pattern on marking paper so that there is little waste of fabric. Pattern sizes are often mixed on the marker to prevent waste. The maker is either pencil marked, photo marked, or marked on a computer system. We have discussed lay plans extensively in block iii unit 1.

Pattern grader : The grader proportionately increases and decreases the size of an original pattern within a size range (referred to as the pattern grade) . the grade is in the length, width, and circumference grading is done using one of the following tools.

Dario Grading Machine : Purchase through Veccharelli Bros. PO Box 15443, Los Angeles, CA90015

Computer Accomack 100 and 200 : Offered by Gerber Computer Company

Grading ruler : the grading ruler and text can be purchased by contacting Eleanor Davis, 1128 Lafayette St. San Gabriel, CA 91776 (Convenient for classroom or the designing room)

Pattern marker maker : A marker is a length of paper containing a copy of all pattern pieces to be cut at one time . all patterns are interlocked and aligned on the marker paper so that when cut, the grain lines will be parallel to the selvage of the fabric. The completed marker is placed on top of layers of fabric as a guide for the other. There are three methods for making markers.

1. A pattern marker maker fracas each pattern on marker paper
2. Patterns re photographed (photo marking) on paper as a conveyor belt carries the patterns under a camera.
3. A computer system will miniaturized copies of the original pattern used in

the lay-up process houses the information in its memory bank until needed (AccuMark™ 200 and 500 systems).

Pattern Cutter : After the marker is made and laid on top of the layers of fabric, the garments are cut by the cutter or by a computer cutting machine.

High – ply cutter : Up to three inches of compressed fabric can be consistently and accurately cut using a high efficiency vacuum hold-down system.

5.6.3 Pattern Development Systems

Design patterns can be generated through pattern manipulation by hand, or with the use of computer systems called PDS (pattern development system) , CAD (computer aided design), and PAD (pattern aided design) . computer companies offer several methods for pattern generation.

Accomack Silhouette is an innovative concept designed to enhance the skills, experience and capabilities of the patternmaker. Designed are free to apply their instinctive talents individual techniques and preferred tools to patterns. Excellent for copying ready made designs.

5.6.4 Pattern Design System

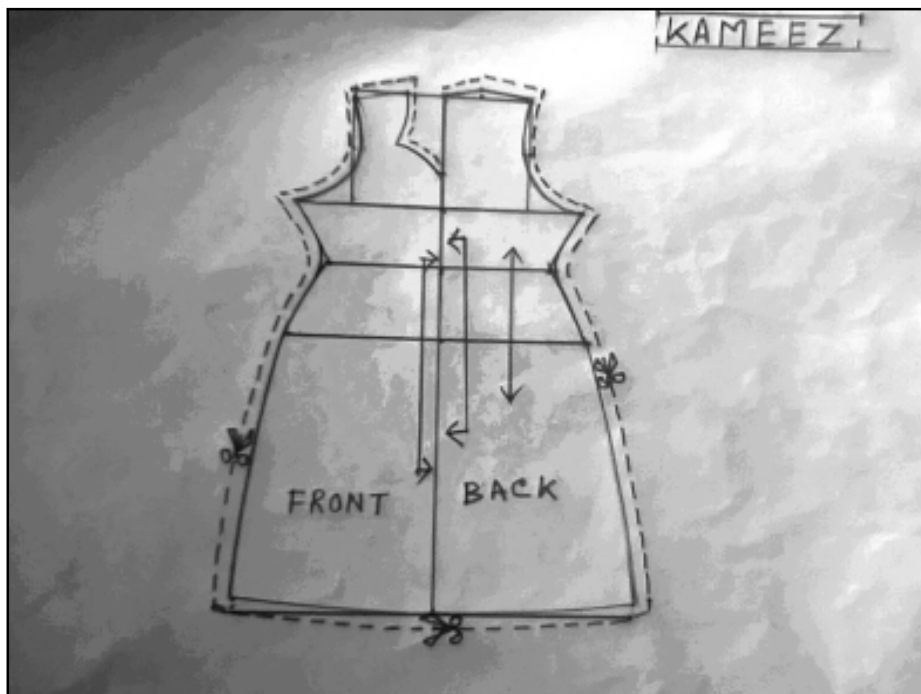
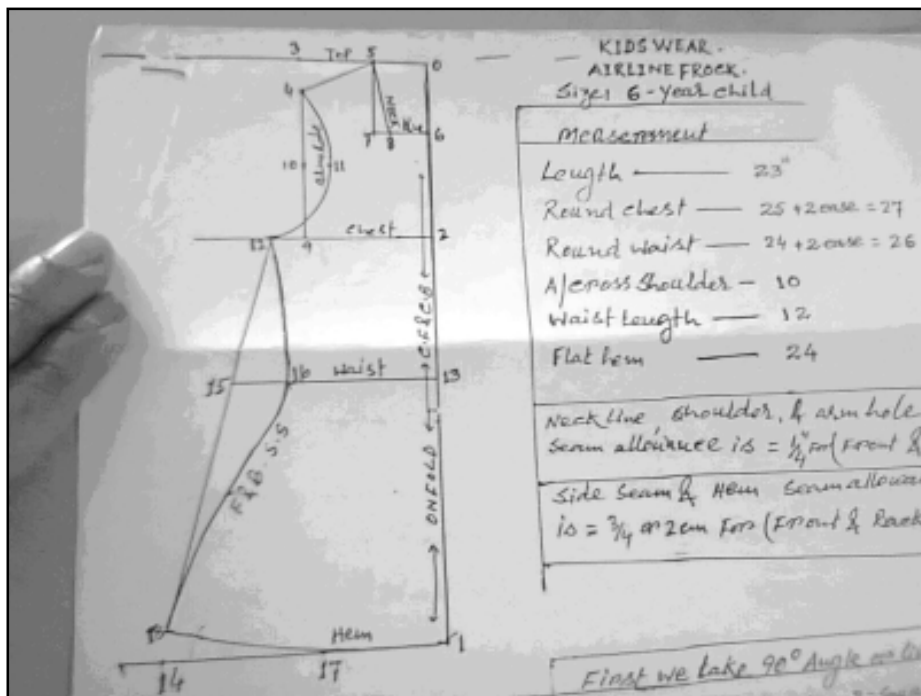
Micro Mark PDS : The system provides the following functions. Pattern drafting and design, pattern modification, style changes and others.

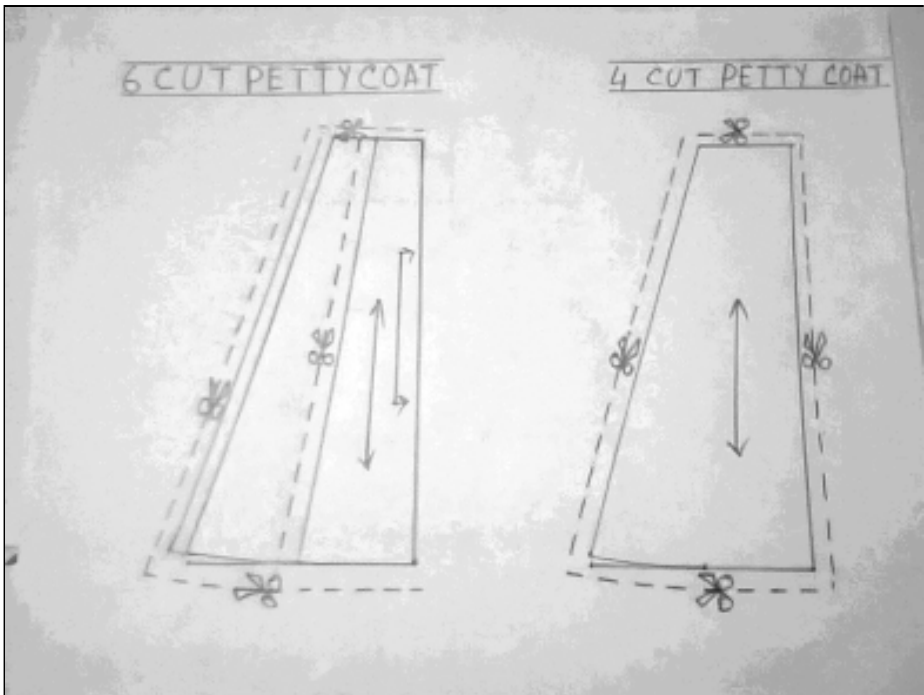
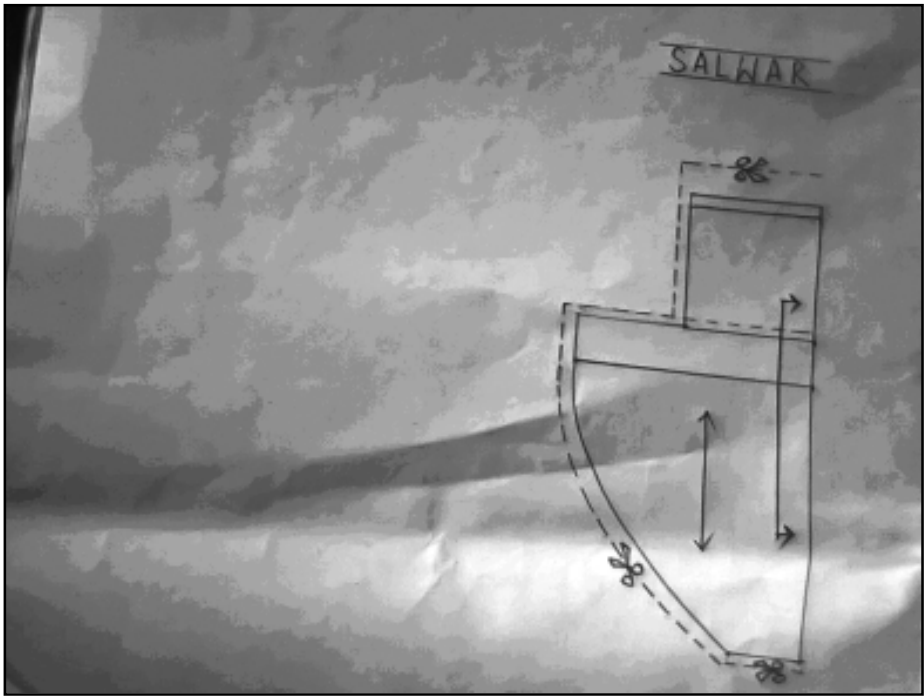
5.7 Cost Sheet

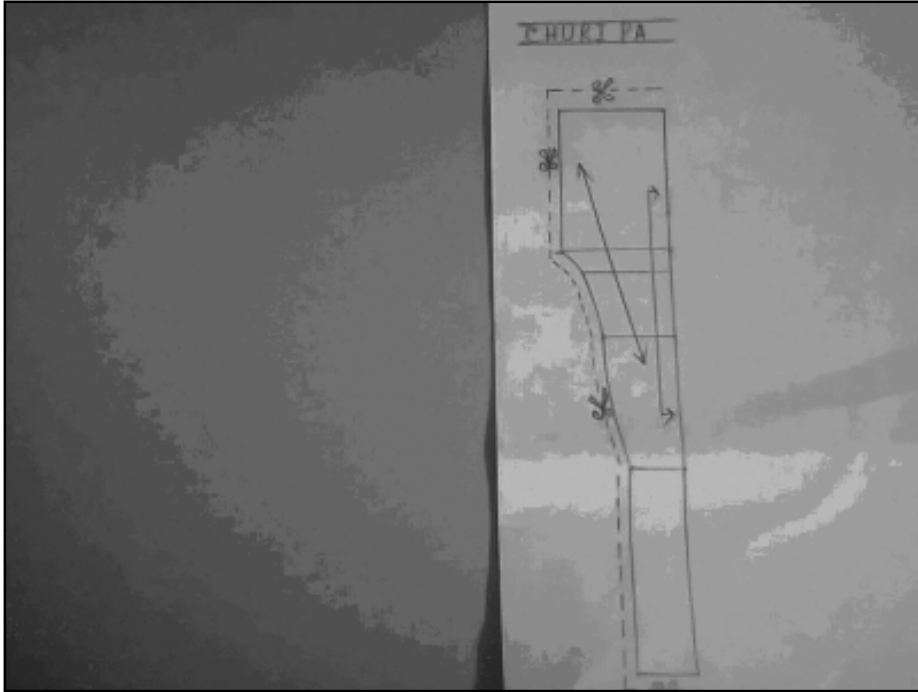
A cost sheet is a complete record to each design and is used to cost the garment and establish the wholesale price. The top part of the form (items 1 and 2) is completed in the design room. It should include the names and telephone numbers of salesperson fabric and from companies. As well as fabric swatches, a sketch and special pattern information or instructions. A blank copy is included in the back of the book for duplicating.

The original copy is for the manufacturer or production person, who completes the lower part (items 3 and 4) and marks yardage. This provides the manufacturer with information required for production. A duplicate kept in the design room for quick reference makes for fewer interruptions in the design department.

DRAFTING FOR DIFFERENT GARMENTS







5.8 Summary

In this unit, we have learnt about the concept of pattern making and garments production here, we have learnt about the block pattern, garment pattern, pattern design system and patterns generation systems. Then we have learnt about the historical background of the pattern making and garment production. Then we got acquainted with the technical skills required in pattern making and garment construction, where we learnt about the theory of wearing ease. Then we learnt about the technical skills required in making up. Next, we got familiar with the tools and equipments required for pattern making and garment construction. Then we learnt how to measure figures and take measurements. Then we learnt about the sizing systems, standard body measurement, and various sizes of women's garments and fashion information. And finally we discussed about the pattern construction process – where we learnt about the basic blocks, block patterns, seam allowances etc.

5.9 References

An introduction to pattern making – G. Coockiln

5.10 Assessment

1. Briefly discuss about the concept of pattern making and garment production.
2. Write short notes on—
 - A) Block pattern
 - B) Garment pattern
 - C) Pattern design and generation system
3. Discuss about the historical background of the pattern making and garment production.
4. How to measure figure and take measurement?
5. What do you know about the sizing system?