PAPER I: FUNDAMENTALS OF GARMENT PRODUCTION

UNIT : I BASIC FASHION TERMS

Garment - A garment is **a piece of clothing**. ... Derived from the French word for "equipment," garment is a somewhat generic term you can use when the specific kind of clothing you're describing is not the point. A dress, for example, is a dress, and pants are pants.

Style – It is something that is unique to everyone. Style is the person's own choice in clothes, accessories, and others. Style is not totally dependent on clothing; it can be related to anything that makes the person look stylish. In another view, style is the extension of fashion which does not change like fashion.

Fashion- It is a style that is accepted and used by a majority of group at anyone time, no matter how small the group is. But it does not mean that every style is in fashion. Styles may come and go but fashion is always present in some form or the other. A style does not become fashion until it gains some popularity and is accepted and it remains in fashion as long as it is accepted. It can also be said that fashion denotes the display of the prevailing and popular style of clothing.

Fashion design- It is a form of art dedicated to the creation of clothing and other lifestyle accessories. Modern **fashion design** is divided into two basic categories: haute couture and ready-to-wear. The haute couture collection is dedicated to certain customers and is custom sized to fit these customers exactly. In order to qualify as a haute couture house, a designer has to be part of the Syndical Chamber for Haute Couture and show a new collection twice a year presenting a minimum of 35 different outfits each time.

Ready-to-wear- collections are standard sized, not custom made, so they are more suitable for large production runs. They are also split into two categories: designer/createur and confection collections. **Designer collections** have a higher quality and finish as well as an unique design. They often represent a certain philosophy and are created to make a statement rather than for sale. Both ready-to-wear and haute-couture collections are presented on international catwalks.

Accessories- are items of equipment that are not usually essential, but which can be used with or added to something else in order to make it more efficient, useful, or decorative. For example jewellery, purse, footwear etc.

Classic - Apparel made in a style that continues to be fashionable over a long period of time, and that may return as high fashion at regular intervals. When revived, classic fashions retain the basic line of the original style, but are sometimes altered in minor details

Fad- Short-lived fashion that becomes suddenly extremely popular, remains for a short period of time, and fades quickly. Fads in India :- India's traditional six-yard wonder is igniting imaginations anew. The sari, say fashion designers, can be worn over a pair of jeans or jazzed up with a sexy slim belt for a trendy look.

Fashion Trends - These are the popular styles of clothing and accessories at a particular moment in time. ... Macro trends change over a longer period of time and have more to do with lifestyle and demographic changes than the latest fashion designs.

Fashion Designer - responsible for creating the specific look of individual garments-including a garment's shape, color, fabric, trimmings, and other aspects of the whole. The fashion designer begins with an idea of how a garment should look, turns that idea into a design (such as a sketch), and specifies how that design should be made into an actual piece of clothing by other workers (from patternmakers to finishers). The category of fashion designer includes people at different levels of the fashion business, from well-known couturiers, to anonymous designers working for commercial ready-to-wear houses, to stylists who might make only small modifications in existing designs.

Avant Grade (ah-vant gard) - French term commonly used in English meaning new, unconventional, ahead of its time. Used as an adjective to describe apparel that may be provocative or surprising.

Couture (Koo-ture)- French term for business in which original apparel designs are created by designers & the items are manufactured in the design house using exceptionally fine sewing & tailoring and expensive fabrics

Couturier – it is the French term for male designer. Couturiere is the female designer. They have their own couture house and create original designs that are presented in a collection each season primarily aimed at individual or private customers. The designs created by the couturier are known for their beautiful detailing and use of luxury fabrics.

Haute Couture (oat koo-toor) - Haute couture (French for "high sewing" or "high dressmaking") refers to the creation of exclusive custom-fitted clothing. Haute couture is made to order for a specific customer, and it is usually made from high-quality, expensive fabric and sewn with extreme attention to detail and finish, often using time-consuming, hand-executed techniques.

Label- The term fashion label refers to upcoming designers who make ready-to-wear outfits in limited numbers. These outfits are high on style and are often expensive than regular store garments but lesser than established designer wear. The difference between a label and a brand is that the latter has been in business for longer and is already a known name.

Ensemble -A French word, ensemble has been oft-used by fashion designers and you surely must have heard or read it quite often. In fashion terms, ensemble is usually referred to an outfit complete with accessories, jewellery etc. The whole look is called an ensemble.

Silhouette- In fashion, a silhouette is essentially the basic shape or outline of an outfit. Some common silhouettes include A-line, straight, flared, asymmetrical, etc. Wearing the right silhouette according to your body type can work wonders for your frame.

Off-the-Rack- There are designer and custom-made clothes, and then there are off-the-rack outfits that refer to clothing that is made in a large number and is readily available in stores. Off-the-rack also means readymade garments that made in standard sizes.

Hemline - Also referred to as the hem of an outfit, the hemline refers to the lower edge of a garment. It is termed long or short depending on its distance from the floor. A dress with a short hemline will expose your legs more while one with a floor-length hemline will barely show your feet.

Vogue- When something is said to be in vogue, it's mean it is currently in trend or in style. If you keep up with fashion trends, you are likely to know what's in vogue for a particular season.

High fashion - High fashion or high style items are the very latest or newest fashions. Because of the fine quality they are expensive; high fashion garments often seem extreme and unusual. They originate from the name of designers in leading fashion cities. High fashion as a term is best applied to high-priced exclusive, designer branded styles. They are worn by wealthy or famous people. These styles may also be limited because they are too sophisticated or extreme to call the attention of general public or they are not within the reach of most people in terms of price.

Mass Fashion- fashion consists of styles that are widely accepted by majority of consumers. A classic may achieve a peak in popularity and become a mass fashion. They are sold in a variety of price ranges at department, specialty, and discount stores. Mass fashions constitute the 'bread and butter' of the fashion industry as they accounts for the major of sales in the fashion business. It also allows a variety of fashion looks to be available to all.

Custom – it means made for the individual customer. It is also called made-to-order apparel. Garments are produced by professional dressmakers with special design, fabric and fit to body contour of a specific person. This is usually done after the customer has seen a sample garment, sketch or picture. Custom made clothing was produced mostly by women of the house prior to the mass production at the factories. The garments were also stitched by hand very meticulously.

Knock – off- it is the stealing of design ideas, or the use of a design, without the consent of the originator/ manufacturer. Designs are generally copied from higher priced garments. They are produced in great volume with lower quality materials and workmanship.

Trunk Show - A producer's or designers complete or part of collection of samples brought into the store for a limited time to take orders from customers. The garments are exhibited to customers at scheduled, announced showings. It is a form of pre-testing that involves a producer's sending a representative to a store for the display of garments.

Model - A model is **a person with a role either to promote, display or advertise commercial products** (notably fashion clothing in fashion shows) or to serve as a visual aid for people who are creating works of art or to pose for photography.

Drafting

Drafting is defined as a method of drawing patterns on paper with mechanical precision using body measurements. A basic pattern or a 'block' or a 'master' or a 'foundation pattern' can be generated

through drafting. A *'sloper'* or *'block'* is a custom-fitted basic pattern from which patterns for many different styles can be created. It consists of five basic pattern pieces or set – bodice front, bodice back, skirt front, skirt back and the sleeve. This basic block does not contain seam allowances, hem allowances. Design features are frequently added to a copy of this block to create variety in a design.

Since drafting employs the use of actual measurements of an individual, they need to be accurately recorded. Inaccuracy in measurements will lead to a faulty drafting resulting in an ill fitted garment. Also, some measurements are calculated on the basis of other measurements. E.g. Normally neck is taken as 1/12 of round bust. So measurements play an important role for drafting

Merits of Drafting:

- A good drafting gives a good fit.
- A basic block can be graded to any desired size pattern.
- Different designs can be made with just a basic draft.
- Accuracy in cutting can be achieved when a draft is available.
- The wastage of fabric can be avoided as all pieces of draft can be laid on the material and adjusted before cutting.
- A draft can be stored and used many times which saves time.
- In case of any figure irregularities, alterations can be made on a copy of the paper draft before finally cutting the fabric. Ex: broad shoulder, drooping shoulder etc.

Demerits of Drafting:

1. A basic draft has no seam allowance but only ease. Hence seam allowances are to be marked on the fabric.
2. Does not fit all, as the sloper is made according to individual body measurements

Draping

Draping is also a method of pattern making where in a muslin cloth is used to drape over a dress form or a model. It is a three-dimensional process of pattern making. Draping allows the designer to freely and accurately express his/her ideas. Proportion of design details can be related to the human body and their effect is clearly visible.

The medium for draping is usually muslin, plain weave fabric of unfinished cotton. The direction of the grain is easily visible and its relatively low cost permits free use for experimentation.

The pattern maker simply constructs a pattern by pinning and manipulating fabric onto an appropriately sized model/dress form. Draped pattern can be marked with pencil lines and the finished muslin pattern can be used repeatedly. This often requires more material and time than flat pattern method, but can be far less frustrating. It affords the patternmaker the luxury of putting fabric on and examining how it looks and hangs before finalizing the design. No bodice block measurements and special steps of adaptation are required.

Merits

1. Easily visualize the effect of style when draped on the dress form
2. Design and style can be modified if unappealing and unattractive
3. Designer can express his/her skill and creativity freely
4. Usually fits accurately

Demerits

1. Expensive method
2. Dress form is essential
3. Dress form with different sizes is needed
4. Unsuitable for commercial production
5. Possibility of wastage of cloth
6. Coarser and thicker fabrics are not suitable for draping
7. Process is elaborate and time consuming
8. Suitable only for production of designer garments

Gather

Gathered fabric is used to create fullness or ruffles. You sew one or two lines of gathering stitches just inside and/or outside the stitch line.Use a long stitch length (5mm and up) on your sewing machine and loosen the top tension on your sewing machine for easier gathering. Don't back tack when you start stitching and leave long thread tails. Anchor the thread tails on one side around a pin, and carefully hold the loose (top or bottom) thread tails and slide the fabric you want to gather along the thread.

Flares- it refers to a projection of volume in a silhouette, flares are also referred to as a type of trouser style. A flare can feature on dresses or tops, particularly seeing reference in peplum tops and skirts. ... The bottom of the trouser may have a design feature of a turned up hem and a wider belt.

Fashion journalists - focus mostly on trends and events, and maintain relationships with designers and stylists. A fashion journalist has knowledge of fashion history, and stays up to date on industry trends. Fashion journalists are either employed full-time by a publication, or they submit articles on a freelance basis.

Fashion Forecasters - he predict which silhouettes colours, textures, fabrics, graphics, prints, footwear, accessories, etc. will be the forthcoming trends on the runway and in retail stores from season to season.

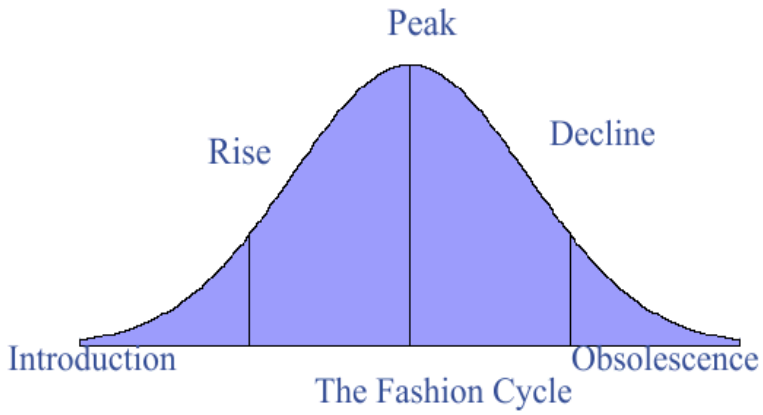
The Fashion Cycle- The ways fashion changes are described as the “Fashion Cycle”. A cycle: Is the period of time or life span during which fashion exists. Style: is a particular look, shape or type of apparel. The fashion cycle is usually depicted as a bellshaped curve encompassing five stages: Introduction, Rise in popularity, Peak, Decline in popularity, and Rejection. Consumers are exposed every season to a multitudes of new styles created by designers and are launched by big clothing companies. Some styles are rejected immediately by the buyers on the retail level, while some styles

are accepted for a short time. That is demonstrated by the consumers purchasing and accepting to wear these new styles.

Stages of the Fashion Cycle: Introduction of a style: Fashion leaders introduce new collections every season for the sake of being innovative and creative. During the introductory phase, the new style is introduced to the public. This new style may or may not appeal to the mass, and therefore be accepted by the consumers. New styles are usually introduced in high price with minimum quantities, to test the market. Usually a new style is worn by the Fashion leaders, athletes, or movie stars, and selected people who can afford it, and mostly celebrities and rich people who love to experiment and try out new styles to grab the attention of the media, and to stand out among the rest. 2. (Rise) Increase in popularity: A new style worn by a celebrity or famous personality, seen by many people and it may draw attention of buyers, the press, and the public. Most designers also have prêt line that sells at comparatively low prices and can sell their designs in quantities. Manufacturers adopt design and styles to produce with less expensive fabric or less details. The adaptations are made for mass production. 3. Peak in popularity: Styles at this stage is most popular. When production of any style is in volume, it requires mass acceptance. The manufacturers carefully study trends because the consumer will always prefer clothes that are in the main stream of fashion. When a fashion is at height of its

- Period of time or life span during which fashion exists

Stages of the Fashion Cycle



- Introduction
- Rise
- Peak
- Decline
- Obsolescence

Introduction Stage

- Designs and styles previewed at major design centers

- Limited acceptance by consumers
- Fashion leaders
- Higher prices
- Small quantities produced

Rise Stage

- Manufacturers adopt designs and styles to produce with less expensive fabrics or less detail
- More affordable and more availability
- Acceptance by more people
- Adaptations and changes
- Mass production

Peak Stage

- Fashion most popular and accepted
- Variety of fashion versions
- Variety of price levels
- Length at this stage determines if fashion becomes a classic

Decline Stage

- Decreasing demand for the fashion
- Fashion has “oversaturated” or flooded the market
- Consumers won’t pay high price for the fashion
- Retail markdowns occur

Obsolescence Stage

- Consumers no longer interested
- Low price
- Retailers not restocking
- Manufacturers not producing

Factors Affecting Fashion Movement

- Consumer acceptance and desire
- Economic acceptance - affordability
- Social acceptance
- Adaptations
  - Fibers , fabrics, textures
  - Color
- Marketing - Advertising techniques
- Fashion Leaders

THEORIES OF FASHION

- Trickle-Down Theory
- Trickle-Up Theory
- Trickle-Across Theory

Trickle-Down Theory

- Movement of fashion starts at the top socioeconomic status of consumers
- Fashion then accepted “down” to the general public
- Oldest and most accepted theory

Trickle-Up Theory

- Fashion movement starts with lower socioeconomic levels
- Acceptance by consumers with higher incomes
- Athletic apparel style
- Jeans
- Hair style
- Punk style

Trickle-Across Theory

- Fashion acceptance begins among several socioeconomic groups
- All price levels at same time
- Quality and lines vary
- Most prevalent in 21st century – technology

UNIT: II BASIC SEWING TERMS

Grainline -The long line with an arrow printed on the pattern. Most of the time this line should be placed parallel to the lengthwise grain/selvage / the length of the fabric. This is also referred to as, on-grain, straight of grain.

In general, always place pattern pieces on-grain and in the same direction, because if the fabric has a nap (velour, velvet, fake fur, corduroy, etc.) you will see that they seem to have a different colour or shade in when light hits the fabric.In some cases, you can also use the crosswise grain. For example; if you want to create a fun design detail with striped fabrics, and play with the direction of the print on a yoke or a pattern.Another time to experiment with lengthwise vs crosswise grain placement is when you don't have enough fabric and need to get creative with your yardage.

Bias - Bias refers to the diagonal direction of a piece of fabric, drawn at an exact 45-degree angle to the selvage or grain line. Woven fabric has the greatest amount of stretch in this direction even when it is a non-stretch fabric.

Binding - A narrow strip of material which is sewn around the edge of a garment, a bag or even a quilt.

Casing - A folded over edge of a garment, which is usually at the waist. It is used to enclose a way of adjusting the fit – for example for a drawstring.

Darts - Darts are used to shape the garment around the waist, bust, shoulders, and sometimes sleeves. They are often shaped like triangles or diamonds.

Darning - it is a sewing technique for repairing holes or worn areas in fabric or knitting using needle and thread alone. ... Pattern darning is a type of embroidery that uses parallel rows of straight stitches of different lengths to create a geometric design.

Dressmaker Chalk - a thin flat piece of hard chalk or soapstone used by tailors and seamstresses for making temporary marks on cloth.

Facing - Facing is a way to finish the raw fabric edges, stabilize, add structure, and strength. They are a partial lining often made from the main fabric and are used on necklines and armholes.Facing can be a separate panel or cut-on facing. Cut on facings are part of the panel they are facing. Cut on facings are often used in a waterfall neckline or a button band. Facings are often used in combination with interfacing

Fusible- A material used as an extra lining between the ordinary lining and the fabric of a garment, curtain, etc." Whereas fusible interlining is: “a base fabric coated on one side with a thermoplastic adhesive resin which can be bonded to another fabric by the controlled application of heat and pressure.

Interfacing - An additional layer of fabric that is used to stabilize, add structure, "crispness" and strength. It lays between the lining/facing and the outer fabric of a garment.

Interlining -A layer used to add warmth to your garment. It sits between the outer fabric and the lining.

Lining -A layer of fabric on the inside of a garment to hide construction seams and details, add warmth and make it more comfortable to wear and easier to put on.

Muslin - plain-**woven cotton fabric** made in various weights. The better qualities of muslin are fine and smooth in texture and are woven from evenly spun warps and wefts, or fillings. They are given a soft finish, bleached or piece-dyed, and are sometimes patterned in the loom or printed.

Notch - A notch can also mean a marking on the pattern to help align two pieces. You can often find notches on a long seam or curved pattern pieces.

Pattern - A template on paper or cardboard from which all of the pieces of the garment are traced onto fabric. All the parts are then cut out and assembled to create the final piece.

Piping – it is a trim or edging formed by sewing a thin strip of folded fabric — typically bias binding — into a narrow tube and attaching it to the edge of a piece of fabric. It can also include cord to give it extra body. Piping is often used to define or reinforce the style lines of a garment.

Placket - A placket (also spelled placquet) is an opening in the upper part of trousers or skirts, or at the neck or sleeve of a garment.[1] Plackets are almost always used to allow clothing to be put on or removed easily but are sometimes used purely as a design element. Modern plackets often contain fabric facings or attached bands to surround and reinforce fasteners such as buttons, snaps, or zippers.

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

Underlining - Underlining an extra layer of fabric cut as a duplicate of a section in a garment. When the garment is sewn, there two pieces are treated as one. Underlining is used with sheer fabrics adding an opaque backing. It can also serve as a backing for an unstable fabric.

UNIT: III BASIC EMBELLISHMENT TERMS

Printing - it is the process of applying color to fabric in definite patterns or designs. In properly printed fabrics the colour is bonded with the fibre, so as to resist washing and friction. Textile printing is related to dyeing but in dyeing properly the whole fabric is uniformly covered with one colour, whereas in printing one or more colours are applied to it in certain parts only, and in sharply defined patterns.

Dyeing - is the application of dyes or pigments on textile materials such as fibers, yarns, and fabrics with the goal of achieving color with desired color fastness. Dyeing is normally done in a special solution containing dyes and particular chemical material. Dye molecules are fixed to the fiber by absorption, diffusion, or bonding with temperature and time being key controlling factors. The bond between dye molecule and fiber may be strong or weak, depending on the dye used. Dyeing and printing are different applications; in printing, color is applied to a localized area with desired patterns. In dyeing, it is applied to the entire textile.

Embroidery - An ancient variety of decorative needlework. Designs and images are created by stitching strands of one material onto another.

Applique -This comes from the French word "appliquer," which means to apply or put on. In sewing, applique is used to describe the process of applying one kind of fabric on top of another layer of fabric. This is fixed into place by sewing or by another fusing means. It can also refer to a surface embellishment.

Quilting - It is a technique where two or more layers of fabric, usually with light padding in between, are sewn together with lines of stitching. The stitches are often worked in parallel lines, forming squares or diamonds in a geometric pattern.

Patchwork - A form of needlework that involves sewing together small pieces of fabric to create a patchwork like effect. This is very popular for quilting. Can be done by hand or machine**.**

Smocking – it is a traditional embroidery technique that gathers fabric together into tight pleats so that it can stretch and return to its gathered shape. It is often used as a form of decoration on a garment, as the gathering of the material and stitches can be formulated to create patterns.

Trims- These are the Material which are used in the sewing room other than the fabric to make a garment, are trims. They are directly attached to the fabric to make garments. Trims can be threads, buttons, lining, beads, zippers, motifs, patches etc. They add a style quotient to the overall look of the wearer

Fringe- it is an ornamental border consisting of short straight or twisted threads or strips hanging from cut or raveled edges or from a separate band a lampshade with a fringe.

Painting - It is defined as the process of applying paint, or another medium, to a solid surface – usually a canvas. Paints or other forms of color are commonly applied to using a paintbrush. ... In the art world, the term "painting" is used to describe both the act of painting and the resulting artwork created by the action.

Printing - In printing, one or more colors are applied to the fabric in certain parts only, and in sharply defined patterns. Printing is therefore called as localized dyeing. The dyes and pigments are applied locally or discontinuously. In this article I will concentrate of the types of printing methods in terms of the machinery used to deliver the print paste and the mode by which paste is delivered to the substrate, be it flat screen, rotary screen, copper roller, ink jet printing or another mechanism.

Different Types of Textile Printing Methods:

There are five main methods of printing a fabric, these being the block, roller, screen, heat transfer and ink-jet methods. The heat transfer method differs from the others in that it involves the transfer of color from the design printed on paper through the vapor phase into the fibers of the fabric. With the other methods the dye or pigment is applied to the fabric surface through a print paste medium. The ink jet printing process however is a comparatively recent innovation and is referred to as a 'non-impact' method, because the print paste is fired on to the textile from a jet which is not actually in contact with the fabric.

Printing is carried out with different instruments. Different methods are used to produce an impression on fabrics. Method of printing depends on the demand of the user and the quantity to be printed. It also depends on the type of material and the end use of the printed product.

Following methods can be used for printing of a fabric:

1. Block Printing
2. Roller Printing
3. Screen Printing
4. Flat Screen Printing
5. Rotary Screen Printing
6. Transfer Printing
7. Ink-Jet Printing
8. Carpet Printing
9. Jet spray printing
10. Warp Printing

11. Resist Printing
12. Electrostatic Printing
13. Photographic Printing
14. Photo Printing
15. Pigment Printing
16. Blotch Printing
17. Non-fabric printing
18. Burn-Out Printing
19. Flock printing
20. Direct Printing
21. Discharge Printing
22. Duplex Printing
23. Stencil printing
24. Two-phase printing
25. All over printing
26. Special printing methods:
    - Space dyeing
    - Kalamkari

1. Block Printing:

Block printing is a method where the pattern was cut into wooden blocks, or was built through an assembly of metal stripes, nails and so on. The print paste is applied to the design surface on the block and the block then pressed against the fabric. The process is repeated with different designs and colors until the pattern is complete. The block printing is used from time immemorial and is still being practiced in all Asian countries as it can be done even at homes by the people in their free time. **Block printing** is a slow and laborious process and is not suitable for high volume commercial use. This printing method is used only at small scale or in cottage industry and is not used at industrial scale because of less flexibility and productivity.

2. Roller Printing:

In this method, engraved copper cylinders or rollers are used in place of handcarved blocks. When

the rollers move, a repeat of the design is printed on the fabric. **Roller printing** has traditionally been preferred for long production runs because of the very high speeds possible. It is also a versatile technique since up to a dozen different colors can be printed simultaneously. The basic roller printing equipment consists of a number of copper faced rollers in which the design is etched. There is a separate printing roller for each color being printed. Each of the rollers rotates over the fabric under pressure against an iron pressure roller. A blanket and backing cloth rotate over the pressure roller under the fabric and provide a flexible support for the fabric being printed. A color doctor blade removes paste or fibers adhering to the roller after contact with the fabric. After the impression stage the fabric passes to the drying and steaming stages.

3. Screen Printing:

This type of printing has increased enormously in its use in recent years because of its versatility and the development of rotary screen printing machines which are capable of very high rates of production. An additional significant advantage is that heavy depths of shade can be produced by screen printing, a feature which has always been a limitation of roller printing because of the restriction to the amount of print paste which can be held in the shallow depth of the engraving on the print roller.

There are two basic types of screen printing process, the flat screen and the rotary screen methods.

4. Flat Screen Printing:

As the name suggests, the screens for this printing method are flat as opposed to circular as in rotary screen printing. The screen is a woven mesh, made from either polyester or polyamide. The mesh is stretched over a rectangular frame, originally made from wood, but now made from metal alloy to reduce weight and increase durability. Worldwide, about 23% of all printed textile fabric is produced by by flat screen printing.

5. Rotary Screen Printing:

Rotary screen printing uses cylindrical screens as opposed to flat screens. Again, a separate screen is required for each color of the design being printed. More complex designs require the application of many different colors, and typical rotary screen printing machines have the capacity for up to 20 screens. The screens rotate in contact with the substrate and the print paste is fed from inside the

screens. The paste is forced from out of the inside of the screen by means of a metal squeegee blade. Worldwide, about 61% of all printed textile fabric is produced by the **rotary screen** method.

5. Heat Transfer Printing:

Transfer printing techniques involve the transfer of a design from one medium to another. The most common form used is heat transfer printing in which the design is printed initially on to a special paper, using conventional printing machinery. The paper is then placed in close contact with the fabric and heated, when the dyes sublime and transfer to the fabric through the vapor phase.

6. Ink-Jet Printing:

Digital ink-jet printing is one of the most modern ways of printing textile fabrics. This method can be used for most of the commercially available fabrics. There has been considerable interest in the technology surrounding non-impact printing, mainly for the graphic market, but the potential benefits of reductions in the time scale from original design to final production has led to much activity in developing this technology for textile and carpet printing processes. The types of machines developed fall into two classes, drop-on-demand (DOD) and continuous stream (CS).

7. Carpet Printing:

The printing of carpets only really achieved importance after the introduction of tufted carpets in the late 1950s. Until then the market was dominated by the woven Wilton carpets and Axminster designs were well established, but by the 1980s tufted carpet production accounted for some 80% (by area) of UK production. Much of this carpet production was printed because the range of patterns possible to produce using tufting machines was limited and there was a desire to produce a greater flexibility of design for these types of carpet.

8. Jet Spray Printing:

Jet printing is a non-contact application system originally developed for printing carpets, but now increasingly used in the textile sector. Designs are imparted to fabrics by spraying colors in a controlled manner through nozzles.

9. Warp Printing:

The printing of a design on the sheet of warp yarns before weaving. The filling is either white or a neutral color, and a grayed effect is produced in the areas of the design.

10. Resist Printing:

A printing method in which the design can be produced: (1) by applying a resist agent in the desired design, then dyeing the fabric, in which case, the design remains white although the rest of the fabric is dyed; or (2) by including a resist agent and a dye in the paste which is applied for the design, in which case, the color of the design is not affected by subsequent dyeing of the fabric background.

11. Electrostatic Printing:

In electrostatic printing, a plate with electrostatic charge (to attract powdered dyes or ink into the fabric) is positioned behind the fabric and a stencil of the design to be printed is positioned between the fabric and the powder supply so the design is applied in the correct area. A dye–resin mixture is

spread on a screen bearing the design and the fabric is passed into an electrostatic field under the screen. The dye–resin mixture is pulled by the electrostatic field through the pattern area onto the fabric.

12. Photographic Printing:
A method of printing from photoengraved rollers. The resultant design looks like a photograph. The designs may also be photographed on a silk screen which is used in screen printing.

13. Photo Printing:
In the photo printing, the fabric is coated with a chemical that is sensitive to light and then any photograph may be printed on it. The controlled light passes to the fabric through negative or a photo film, which allows the light to fall on the fabric as per the details in the photo.

14. Pigment Printing:
Printing by the use of pigments instead of dyes. The pigments do not penetrate the fiber but are affixed to the surface of the fabric by means of synthetic resins which are cured after application to make them insoluble. The pigments are insoluble, and application is in the form of water-in-oil or oil-in-water emulsions of pigment pastes and resins. The colors produced are bright and generally fat except to crocking.

15. Blotch Printing:
Blotch printing is a process wherein the background color of a design is printed rather than dyed. The result is that the reverse side of the fabric is typically white. This is a direct printing technique where both the background color and the design are printed onto a white fabric, usually in one operation. Any methods such as block, roller or screen may be used. The ground color is transferred from the cylinder and the motif retains the original hue of the cloth.

16. Non-fabric Printing:
Printing techniques can be applied also on pre-stages in textile production, e.g. sliver yarn, warp beams, thus leading to special irregular patterns.

17. Burn-Out Printing:
A method of printing to obtain a raised design on a sheer ground. The design is applied with a special chemical onto a fabric woven of pairs of threads of different fibers. One of the fibers is then destroyed locally by chemical action. Burn-out printing is often used on velvet. The product of this operation is known as a **burn out print**.

18. Flock Printing:
Flocking is the technique of depositing many small fiber particles, called ‘flock’, onto a surface of a fabric to produce the design. Flock printing is a representative for techniques where an adhesive is printed in the first stage. In the second step, an effect material is fixed to the adhesive.

In case of flock print, short staple fibers (flocks, 0.3–3 mm) are fixed on the adhesive layer by means of an electrostatic field (20–60 kV) which also orients the fibers in direction perpendicular to the fabric surface, thereby a velvet-like surface structure is obtained.

Many other effect materials can be fixed on the adhesive layer:

- Finely chopped thin plastic particles lead to a glitter effect
- Metal film can be fixed as conductive surface layer or to achieve a metal effect

19. Direct Printing:
A process wherein the colors for the desired designs are applied directly to the white or dyed cloth, as distinguished from discharge printing and resist printing.

20. Discharge Printing:
In "white" **discharge printing**, the fabric is piece dyed, then printed with a paste containing a chemical that reduces the dye and hence removes the color where the white designs are desired. In "colored" discharge printing, a color is added to the discharge paste in order to replace the discharged color with another shade.

21. Duplex Printing:
Duplex printing is a method of printing a pattern on the face and the back of a fabric with equal clarity. Printing is done on both sides of the fabric either through roller printing machine in two operations or a duplex printing machine in a single operation.

22. Stencil Printing:
In stencil printing, the design is first cut in cardboard, wood or metal. The stencils may have fine delicate designs or large spaces through which color is applied on the fabric. The pattern is cut out of a sheet of stout paper or thin metal with a sharp-pointed knife, the uncut portions representing the part that is to be reserved or left uncolored. The sheet is now laid on the material to be decorated and the color is brushed through its interstices.

23. Two-phase Printing:
In two-phase printing, the pattern printing and dyestuff fixation processes are separated into two stages. As an example after printing of a **reactive dye** and intermediate drying, the print is fixed in a continuous process through padding in rather concentrated alkali solution. Similarly, vat dyes can be printed and fixed in the reducing agent.

24. All Over Printing:
All over printing is a special type of printing technology that allows a particular design to be repeated continuously throughout the fabric. As a result, the fabric becomes more attractive. Fabrics made with AOP technology are also being used in denim products including woven shirts, T-shirts, Ladies gowns, Tops, Punjabi, Woven pants, Home textiles etc.

25. Space Dyeing:
Space dyeing is a method of printing yarns using jet spray of colors. In space dyeing machines, 64 jet sprays are provided and 8 colors can be accommodated. There cannot be any uniformity or repetition of designs when these yarns are woven or knitted. It gives a special effect that is unique.

26. Kalamkari:
Fabric is painted using a pen with dyes and mordants. Printing the outline of the design and filling inside with a pen (kalam) combine the printing and art with pen, that is, kalamkari. Kalamkari is an exquisite ancient craft of painted and printed fabrics practiced in Indian temples.

Concept Of Dyeing

We know that textile dyes is organic substance and inorganic substance. the tendency of textile dyes is to absorb light and reflect light to show colour. and dye have also tendency to properly soluble in water. this are the best tendency of dyes. that is reson dyes are used for colouration of textile materials.

the basic concepts of textile dyeing is, the interaction between a dye and a fibre (textile materials/textile goods). and it consist several steps. and in textile dyeing process, involved follow terms, such as,

1. Disorganisation of the dye
2. Exhaustion – dye uptake
3. Adsorption – transfer of dye from aqueous solution onto fibre surface.
4. Diffusion – Textile dye is diffused into the fibre.
5. Fixation – dye is fixed on to the fibre

Different Types of Dyes:

Now, we will discuss about different types of dyes with their properties;

1. Vat dyes

2. Basic dyes

3. Direct dyes

4. Reactive dyes

5. Azo dyes

6. Acid dyes

7. Azoic dyes

8. Sulphur dyes

9. Pigment dyes

10. Mordant dyes

11. Synthatic dyes

12. Disperse dyes

13. Develop dyes

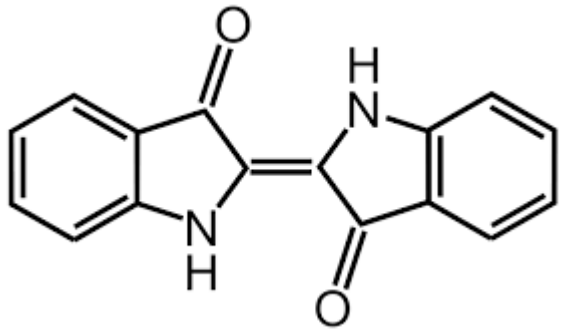
14. Aniline dyes

15. Nitro dyes

16. Anthraquinone dyes

17. Turmeric dyes (Natural dyes)

1. Vat dye



Vat dye is made from natural plants. So, Vat dye is also called indigo dyes. Vat dye is insoluble in water but soluble by vatting process. Vat dyes is windly used in cellulose materials for dyeing purpose. Vat dye have good overall fastness properties.

Vat dye is not directly use for dyeing process. Vatting is must be required before dyeing. Because vat dye is insoluble in water but it Solubilized by vatting process and then dyeing is done.

Properties;

1. Vat dye are insoluble in water.

2. The particle size of vat dye is very small.

3. Vat dye are Applied in alkaline condition PH 12-14

4. vat dye mostly belong to indigoid, and Anthraquinone class.

5. vat dyes can’t be directly applied on cotton material for dyeing.

6. In vat dyeing process, first need vatting process.

7. First vatting process is done then it can apply on textile materials for dyeing purpose.

8. After dyeing it gives different shade.

9. wet fastness is very good but rubbing fastness is not good.

10. wet fastness is very good around 4-5.

2. Basic dyes

Basic dye are insoluble in water but Solubility of this dye in water with the presence of glacial acetic acid. basic dyes are synthatic type class dyes. this dyes are windly used in dyeing of synthatic materials. because this dyes have more affinity for synthetic materials. It's produced bright shade and high tinctorial values. basic dyes are powerful colouring agent. these dyes are also be called Cationic dye.

Properties;

1. Basic dyes are insoluble in water.

2. Basic dyes have good affinity for synthetic materials.

3. Basic dye is synthetic class type dyes.

4. basic dye is produced bright shade.

5. basic dye is a powerful colouring agent.

6. basic dye is also called cationic dyes.

7. basic dyes is produced excellent shade.

8. basic dyeing is comparatively cheap process. and it is a cheap in price.

3.Direct dye

Direct dye are highly soluble in water. direct dye are easily dissolve in water. this dyes are windly used in cellulose materials because direct dye have good affinity for cellulosic materials such as Cotton materials. Dyeing is done Alkaline condition. direct dye is easy and cheap process. But in this process after treatment is required after dyeing for improving shade of dyed materials. direct dye are also be dyed wool, silk, Nylon materials. this dyes gives good fastness property.

Properties;

1. direct dye have good solubility in water.

2. This dye is more useful for cellulosic materials such as cotton as well as proteins fibres such as wool, silk, and nylon.

3. direct dyeing process is not produce proper fastness properties so generally after treatment is required for shade development.

4. direct dyeing process is comparatively cheap compared with reactive dye and also vat dye.

5. Uses Nature of direct dye is anionic.

6. Direct dyeing process is done at low temp.

7. direct dyeing process is not more expensive compared with reactive dyeing process.

4. Reactive dyes

Reactive dye are soluble in water. Reactive dyes are also more stable for cellulosic materials. this dyes have also be high affinity for cellulosic materials as well as for proteins fibres and also be polyamide fibres. this dyes is easy to make a Covalent linkage with the fibres and work as a integral part of fibre. this dye also be use for dyeing of Cotton,wool, and silk materials.

Properties;

1. Reactive dyes are soluble in water.

2. Reactive dyes are comparatively cheap and best.

3. Easy dyeing methods and it require less time for dyeing

4. It require low temperature for dyeing

5. Reactive dye having good perspiration fastness with rating 4-5.

6. Reactive dyes have very good wash fastness but has moderate rubbing fastness.

7. Reactive dyes have very good light fastness with rating 6.

8. reactive dyes are found in power, liquid and print past form.

9. Reactive dyes are anionic dyes, which are used for dyeing cellulose, protein, and polyamide fibers

10. Dyes have stable electron arrangement and can protect the degrading effect of ultra-violet ray.

5. Azo dyes

Azo dyes are Soluble in water. azo dyes are chemically class of dyes and this dyes are organic compound. Azo dyes are contain functional group (N=N) . this dyes are bound to Aromatic ring. these ring are break down with high temp. these dyes are also be use for dyeing of cellulose materials as well as proteins fibres. azo dyes are produced strong colour with good depth of shade on to the materials. Azo dyes are produced Different strong colour such as acid orange 7, direct blue 15, methyl yellow and acid red.

Some azo dyes are harmful for skin but not all azo dyes. this dyes is easy to absorbed on skin during dyeing so doing work with very carefully. Because if azo dyes are contact on skin then it may chances of skin cancer.

Properties;

1. Azo dye is soluble in water.

2. It is a chemical class of dyes.

3. **this dyes are chemical class of dyes**.

4. this dye are highly organic compound.

5. **this dyes are contain azo function group (N=N).**

6. It is **properly bound to aromatic ring.**

7. azo dye are used for the dyeing of cellulose materials as well as polyester materials.

8. this dyes are produced strong colour with good depth of shade on to the materials.

9. this dyes have some important colouring Function property. this is the reason it gives good colour (shade) on materials.

10. this dye gives good effect on cellulosic materials

6. Acid dyes

Acid dye are highly soluble in water compare to the basic dyes. Acid dyes are windly used for proteins fibres such as wool, silk, acrylic, nylon. Proteins fibres contain Sulphonic acid groups. The function of Sulphonic acid groups is to improve or increase the Solubility in water.

And it's gives proper dye molecules and this molecules make negative charge and proteins fibres are make positive charge. This both make more interacts to dye property. In this process, some special force is applied during dyeing such as Vander walls force and hydrogen bond. This force is help during dyeing. and get even dyeing.

Properties;

1. Acid dyes are highly soluble in water compare with basic dyes.

2. Acid dyes is properly work on proteins fibres such as wool, silk, nylon.

3. Acid dye have no affinity for cellulosic materials. Hence, acid dye is not suitable for cellulosic materials.

4. Acid dyes is more suitable and profitable for proteins fibres such as silk, wool, nylon and acrylic.

5. Acid dyes are properly ionic in nature.

6. Acid dyes is more react on to the proteins fibres with the help of Vander Waals and hydrogen bonds because it's formed between fibre and dyes.

7. Light fastness is good in case of acid dye but in case of basic dye light fastness is poor.

8. In case of acid dyes, uses strong acidic to netural pH.

9. Acid dyes is more effective for proteins.

7. Azoic dyes

Azoic dyes are Contain azo group (N=N). Azoic dyes are synthatic types dyes. Its made in the form of readymade. azo dyes are produced coloured substance by the reaction of two components such as,

(1) Coupling compound (napthol)

(2) Di – azo Component (salt diazo)

Azoic dyes are Colour Component but it is insoluble in water. and azoic dyes are gives exllent washing fastness property.

Properties

1. Azoic dyes are insoluble in water.

2. Azoic dyes give bright colour.

3. This dyes gives excellent washing fastness.

4. Dyes also give good light fastness.

5. This process is not expensive.

6. Easy to handle.

7. This process is not long process.

8. This dyes are Mostly use for synthetic materials for colouration.

8. Sulphur dyes

Sulphur dyes are in soluble in water. Sulphur dye are more suitable for cellulosic materials and denim fabric. Sulphur dyes are produced strong deep shade. and this dyes are also produced Different colours such as red, yellow, orange. Sulphur dyes are converted to leco form with the help of dilute aqueous (Na2S) before dyeing. Also be use for production of heavy materials such as rubber materials.it also be used for textile printing process. but it is costly process.

Properties;

1. Sulphur dyes are insoluble in water.

2. Sulphur dyes have no afinity for textile cellulose fibres.

3. Sulphur dyes are converted to leuco form before dyeing with the help of dilute aqueous (na2s).

4. This leuco form is used for dyeing of cellulose materials.

5. Sulphur dyes develop s-s linkage in chemical structure.

6. Sulphur dyes are produced black and brown shade.

7. Sulphur dyes are used and it's give great results in case of different types of textile printing.

8. Sulphur dyes are insoluble in water.

9. Sulphur dyeing is favourable cost structure.

10. Alkaline condition is required for dyeing.

11. Sulphur dyeing is one of the most popular for black, brown and blue shade production.

9. Pigment dyes

Pigment is not a dye, pigment is a Chemical substance which is windly use after the pigment dyeing for improving the fastness properties. Pigment easily panetrate on to the materials with the help of binders. So, binder is must be required in pigment dyeing. now a days pigment dyeing is also carried out in lots of industry.

Properties

• pigment dyes have good covering power.

• size particle of this dyes is ranging 0.2 – 0.4.

• Powerful chemical resistance.

• Good dispersion.

• better resistance to tight.

• stability is very good on dyed materials.

10.Mordant dyes

Mordant dyes are acid dyes in which contains metal atom it can be insert in dye bath during dyeing. Mordant dyes have good affinity for proteins fibres such as silk, and wool.

Mordanting is must be required for synthatic dyestuff, some synthatic dyes are generally in use that required mordanting for proper exhaustion and proper pantration.

this is the reason it produces better shade on to the materials. But if dyes are made from natural plants then mordanting is not required. Mordant dyes required a mordant in their uses, it is easy to deposition in the form of colour.

Properties

• low affinity for textile materials.

• Mordant dyes may be natural or synthetic.

• this dyes are mostly apply on proteins fibre. Such as nylon and acrylic fibre.

• this dye are soluble in cold water.

• Dyeing of textile materials is carry out with the help of mordants.

11. Disperse dye

Disperse dye are insoluble in water. This dyes are easy to diffuse in to the fibres Because disperse dye have very small dye particals. Disperse dye are windly used in synthatic materials such as polyester, nylon, and blend materials such as polyester/cotton. disperse dye is given good shade for synthetic materials. Some Chemical substance is used in disperse dye such dispersing agent it's help to improve the depth of shade on the materials. this dyes have very small dye particals compare to the other dyes, this is the reason to easy to diffuse and easy to panatrate on to the materials. and it gives good shade or good colour on to the synthatic materials. this dyes are also be dyed hydrophobic materials such as nylon, acrylic.

Properties;

1. this dye are insoluble in water.

2. invironment behaviour of this dye is not good.

3. this dye is easy to diffuse in to fibre or materials because disperse dye having very small dye particals.

4. disperse dyeing process is not expansive it is very cheap process.

5. disperse dye colour produce bright and lighter shade.

6. light fastness properties is good rating 4.5-5.

7. some important chemicals is required during dyeing Such as dispersing agent.

8. disperse dyeing is done of synthetic materials with the help of three methods such as high temperature dyeing methods, thrmsole methods and carrier methods.

9. some important chemicals is required during dyeing Such as dispersing agent.

10. it also increase the rate of dye exhaustion power during dyeing. this reason it easily diffuse on to the materials and gives proper shade.

12. Developed dyes

Developed dyes are made from developer with the help of some after treatment process. The main role of develop dyes are to develop depth of shade on to the materials. For example, develop dyes are "direct dyes." this dyes is also called developed dyes.

13. Aniline dyes

Aniline dyes are derived chemically from aniline. Coal – tar distillation product. For example…. inks, dyes and other uses.

14. Nitro dyes

Nitro dye are Aromatic Compound types dyes. Nitro dyes are produced strong colour with the help of nitro group and hydroxy group. nitro dyes also be contain chlorine and nitro dyes are more stable with the presence of nitro and hydroxy group.

15. Anthraquione dyes

Anthraquinone dyes are synthatic class types dyes. This dyes are found mostly synthetically. This dyes have carbonyl group (>C=O). anthraquinone dyes are Colourless but red to blue is found from uses hydroxy or amino group. Anthraquinone dyes can be found in natural dyes as well as synthatic dyes. Some dyes are also be know as anthraquinone types dyes such as Mordant, vat and also disperse dye.

16. Turmeric (natural dyes)

Dyes are made from naturally turmeric dyeing is windly carried out for dyeing of cellulosic materials. these dyes are used in most of the ancient civilization, such as India, Egypt or more.

dyes are mostly used in dyeing, Printing and painting in India. turmeric dyes are extensively used as a Cosmetic for women. Such as Heena, mahandi, and more. dyes are mostly used in food and confectionery. all indian people are used turmeric in food. Because it is very important for indian life.

Turmeric is also be used in textile industry for dyeing purpose. Turmeric powder has ability to dyed cellulose materials. In case of turmeric dyeing first mordanting of turmeric is required then dyeing is done. Its produce pale yellow shade. this dyes is produced good fastness property. and this process is low moderate cost.

Properties;

the use of natural dyes for dyeing, painting and printing.

2. mostly natural dyes are used for dyeing, printing and painting in India.

3. they are extensively used as cosmetics for woman. some examples are heena/ mehadi for decorating the palms and soles young maidens. 'surma' to enhance the effect of eye lashes.

4. Natural dye is also used in food and confectionary. ex; saffron, turmeric, kashmiri chilli, and ratanjyot. Because of the wide use, these dyes have become a part and parcel of Indian life.

5. the use of natural dyes for textile dyeing almost disappeared, due to wide range of synthetic colours available, with good fastness properties.

BASIC EMBROIDERY STITCHES

Backstitch- is so easy to learn that you'll have it down within the first few stitches. This basic stitch is likely to be the stitch you'll use the most. Backstitch is useful for any kind of outlining, but it's also a stitch that pairs well with other stitches, making it a key stitch to learn.It's also easy to embellish with weaving or wrapping, and quickly transforms into the more decorative Pekinese stitch.

Running stitch- a simple embroidery stitch that is good for making dashed outlines and adding details to your embroidery. It's also the basis for Japanese sashiko embroidery. Although basic, it's adaptable and can become complex. For example, you can change the look by adjusting the length and spacing or adding a second row of stitches between the first. It's also another stitch that works well with weaving and wrapping.

The straight stitch hardly requires an explanation, because it is as simple as bringing the needle up through the fabric and then going back down. But it's worth exploring the many uses for this building block embroidery stitch.

French Knot- This stitch involves wrapping the needle to form a knot on the surface of the fabric. The trick to making French knots is to hold the working thread taut, but not too tight. Give it some practice.

Stem stitch- is another basic stitch that's perfect for creating smooth outlines. It works well for both straight lines and curves, and despite its name, it isn't only for embroidering stems. Use a stem stitch on just about any lines in your stitching. Like so many stitches, you can adjust the width of stem stitching or use it for fill stitching. Just try to keep your stitch length consistent to create a beautiful result.

Chain stitch – it forms a row of linked stitches that really stands out.There are several ways to work the chain stitch and it's a good idea to at least learn how to work it forward and in reverse.

Satin stitch - One of the most classic embroidery stitches for filling an area is the basic satin stitch. There are a few variations, but at its essence, satin stitch is a series of straight stitches worked next to each other. The secret to making those straight stitches turn into something special is in practicing the length and proximity of the stitches. The result is a filled shape that is simply stunning.

Feather stitch – it is a linked stitch that creates open lines that almost look like they're moving. It's perfect for making frames and borders, and it works well layered or embellished with other stitches too. The look of feather stitch makes it good for stitching seaweed, foliage, feathers, or scales, and the variations make it possible to embroider a multitude of natural designs.

split stitch - as another option for making outlines. The process for working split stitch is similar to working backstitch, but upside down. In fact, the back of your work will end up looking like the front of the backstitch.

Detached chain stitch – it is sometimes referred to as a single chain, is a common stitch for making flowers, leaves and more. This stitch is worked as a standard chain stitch, but with just one "link."Detached chain stitch is what makes lazy daisy flowers, which are typically formed with five of six of these stitches.

Fly stitch- it is worked similar to a detached chain stitch, but rather than making a petal or teardrop shape, fly stitch forms a V shape or sometimes a soft curve.Try fly stitch in a row, scattered as fill, stitched in a radius, or plenty of other variations.

Woven wheel stitch- it looks like a more advanced embroidery stitch, but it's actually quite simple. Start with a star of straight stitches and then weave the working thread to form a flower. Soon you have a stitch that will fill your hoop with amazing florals.

Couching stitch- it is an embroidery method that everyone should know. This stitch uses two lengths of thread at one time. One remains on the surface of the fabric, while the other holds it in place with tacking stitches.Use this stitch for making outlines, creating texture, or filling an area. It even works with ribbon, yarn, and other materials.

Blanket stitch- it is usually the trickiest part, but once you start, it's so easy to do. Use this stitch to make borders and decorative lines or as an edge for applique within your embroidery. Add variation to the stitch by adjusting the spacing and height of the stitches.

Bullion knots- these are not for the faint of heart. But they are a stitch you should learn. Think of them as a really long french knot that can make gorgeous roses. Practice making them small and then start making them bigger. You'll be glad to know this one.

UNIT: IV APPAREL CLASSIFICATION AND CATEGORIES

Casual wear- emphasises comfort and informality. Casual wear refers to the clothes we use for everyday wear. This style emphasises on comfort, relaxation, and informality. It includes a wide range of clothes and styles. Casual dressing gives first place to personal expression and comfort over formality and conformity.

Tee-shirts (polo shirts, turtlenecks, etc.), jeans, jackets, khakis, hoodies, summer dresses, skirts, sneakers, loafers and sandals are examples for casual wear. Sportswear, clothes worn for manual labour also falls under casual wear. It can be worn when you are going on trips, shopping, and casual outings with friends. This style is also worn by high school and college students unless the schools don't have a specific uniform. Casual wear is usually made from materials such as cotton, jersey, denim, polyester and flannel. Casual wear is not made from expensive and dressy materials such as chiffon, brocade, and velvet. Casual wear should not be worn for ceremonial events, parties, weddings and other formal events, business meetings or to work (in offices).

Formal Wear

Formal wear refers to clothing that is suitable for formal events such as ceremonial events, weddings, balls, formal dinners, etc. Formal wear is nowadays mostly worn at formal dances, high school prom dances, and entertainment industry award programs.

Although most people associate black tie with formal wear, the satirically proper dress code for formal wear is white tie for evening and morning dress for daytime. Women are supposed to wear ball gowns or formal evening (floor length) gowns. Uniforms such as formal military uniforms, law court dress, academic and graduate dress are also considered as formal wear.

The following list will give a clear description of the dress code for formal wear.

Formal Wear for Men

- Black dress coat (tailcoat), matching trousers with two stripes of satin or braid(Europe or the UK) or a single stripe (the US)
- White vest
- White bow tie
- White piqué wing-collared shirt with stiff front
- Braces
- Shirt studs and cuff links
- White or grey gloves
- Black patent shoes and black dress socks

Formal Wear for Women

- Floor length evening gown long gloves (optional)
- Long gloves (optional)

What is the difference between Casual and Formal Wear?

Casual vs Formal	
Casual is everyday wear.	Formal wear is worn for formal events.
Occasions	
Casual wear is worn for informal and relaxed occasions such as trips, shopping, meeting friends, etc.	Formal wear is worn for formal events such as ceremonial events, weddings, state dinners, etc.
Clothing	
Casual wear includes jeans, tee-shirts, skirts, summer dresses, hoodies, etc.	Formal wear includes dress shirts, dress coats, ties, trousers, long evening gowns, etc.
Shoes	
Sneakers, loafers, slippers, and sandals are worn for casual wear.	High-quality shoes are worn for formal wear.
Materials	
Materials such as cotton, jersey, denim, polyester and flannel are used to make casual wear clothing.	Materials such as satin, velvet, silk, brocade, etc. are used to make formal wear clothing.
Feel	

Traditio
they wea
different
social id

Though following these traditions and wearing traditional clothes is slowly reducing in most countries where westernization is coming more into play, costumes and traditional wear will always have an important part, on the most important days…like festivals, weddings and important events and functions.

It maybe not be practical to wear on a daily basis in this day and age but sure enough ispart of our culture and nationality which defines us as a race.India being so diverse culturally and geographically, almost every region and state in Indian has their own attire.Some similarities and common factors can be found in these costumes for instance the Sari/Saree can be called the Traditional attire of Indian Women, but the sari is worn differently in different parts of the country.

Party Wear- A party dress is a **dress worn especially for a party**. Different types of party such as children's party, cocktail party, garden party and costume party would tend to require different styles of dress. One classic style of party dress for women in modern society is the little black dress.

Uniform -It is a type of clothing worn by members of an organization while participatingin that organization's activity**.** Modern uniforms are most often worn

by armed forcesand paramilitary organizations such as police, emergency services, security guards, in some workplaces and schools and by inmates in prisons. In some countries, some otherofficials also wear uniforms in their duties.When everyone in the business or school wears the same thing, employees and students have equal footing. No one can stand out due to better or more expensive clothing. This increases self-confidence and unifies the group. Everyone is on the same platform, regardless of economic status.Wearing a uniform means not having to buy work or school clothes. This creates less strain on the budget.

Finally, uniforms create a sense of belonging. Everyone wearing one feels at home, andthat improves team building and overall satisfaction.

Sportswear or **active wear -** is clothing, including footwear, worn for sport or physical exercise. Sport-specific clothing is worn for most sports and physical exercise, for practical, comfort or safety reasons.

Typical sport-specific garments include tracksuits, shorts, T-shirts and polo shirts.

Specialized garments include swimsuits (for swimming), wet

suits (for diving or surfing), ski suits (for skiing) and leotards (for gymnastics). Sports footwear include trainers, football boots, riding boots, and ice skates. Sportswear alsoincludes bikini and some crop tops and undergarments, such as

the jockstrap and sports bra. Sportswear is also at times
wornas casual fashion clothing.

For most sports the athletes wear a combination of different items of clothing, e.g. sportshoes, pants and shirts. In some sports, protective gear may need to be worn, such

as helmets or American football body armour.

Sports fabrics are technical materials which help to keep the wearer comfortable duringexercise. The type of fabric required will depend upon the intensity of the exercise and the activity. Yoga clothing should use fabrics with exceptional stretch ability for easy movement which will likely require the fabric to be of a knitted construction. Apparel for long distance running will keep the wearer in good comfort if it has excellent moisture wicking properties to enable sweat to transfer from the inside to the outside for the garment. Performance clothing for outdoor sports in the winter or snow sports should use breathable fabrics with very good insulating properties.

Maternity clothing is worn by women as an adaptation to changes in body size during pregnancy. The evolution of maternity clothing began during the Middle

Ages, and became fashionable as women became more selective about style and comfort in the types of maternity clothing they wore.

Maternity wear is generally designed using a loose, suitable cut that includes elastic, tabs, stretchable fabric such as elastane, and spandex that allows the consumer extra- comfort in her gestating days. After pregnancy, many women also wear maternityclothes until they have lost the weight of pregnancy and can fit back into normalclothing.

UNIT : V MANUFACTURING PROCESS

1.INTRODUCTION

Garments Manufacturing: - A complete garment has to face several processes from its order

receiving to shipment. During garments manufacturing, a process flow chart must be needed to complete an order easily. Also, a process flow chart helps to understand a garment manufacturing method that how the raw materials are converted into wearable garments.

Each process of garments manufacturing flow chart is discussed in the below with the details*:*

1. **Design**:-Design is provided by the buyer. After placing an order buyer send the technical sheetand art-work of an order to the merchandiser. This process is done both manually or by using thecomputer.

2. **Fabric layout** - To cut the fabric properly fabric is spread inlay form. Fabric Spreading is donemanually or by using a computerized method.

3. **Fabric Cutting:** - Fabrics have to cut here according to the marker of garments. The fabric Cutting process is done by using a manual method or computerized method.This is the
major operation of the cutting room when they spread and cut into garments. Of all the operationsin the cutting room, this is the most decisive, because once the fabric has been cut, very little canbe done to rectify serious defects.

- A first planning consideration is whether the totals arrived at in the cutting room are the same as those required to maintain full production in the sewing room and subsequently theplanned delivery schedule. Any cloth problems created in the cutting room can affect the output in the sewing room. Assuming all components of fabric, design, and trims are acceptable and correctly planned and cut, the next stage is to extend the cutting room

programme to the sewing room.

- All cutting operations are carried out by straight knife cutting machines.

4. **Stitching**: - All the parts of a garment are joined here to make a complete garment. The sewing process is done manually.Stitching or sewing is done after the cut pieces are bundled according to size, colour and quantities determined by the sewing room.Garments are sewn in an assembly line, with the garment becoming complete as it progresses down the sewing line. Sewing machine operators receive a bundle of cut fabric and repeatedly sew the same portionof the garment, passing that completed portion to the next operator. For example, the first operator may sew the collar to the body of the garment and the next operator may sew a sleeve to the body. Quality assurance is performed at the end of the sewing line to ensure thatthe garment has been properly assembled and that no manufacturing defects exist. When needed, the garment will be reworked or mended at designated sewing stations. This labor- intensive process progressively transforms pieces of fabric into designer garments.

- The central process in the manufacture of clothing is the joining together ofcomponents.
- Stitching is done as per the specification is given by the buyer.
- High power single needle or computerized sewing machines are used to completethe sewing operation. Fusing machines for fusing collar components, button, and buttonhole, sewing machines for sewing button and buttonholes are specifically employed.

5.. **Garments Inspection:** - After completing sewing, inspection should be done here to makefault free garments. Garments Inspection is done by using the manual method.

6. **Garments Ironing and Finishing:** - Here garments are treated by steam; also requiredfinishing should be completed here. This process is done by using the manual method.

7. Final Inspection: - Finally, the complete garments are inspected here according to the buyer'sspecification. Final Inspection is done by manual method**.**

2. CUTTING - FABRIC SELECTION AND DESIGN

Fabric selection is a crucial step in designing a project because fabrics are designed for specific applications, a fabric manufactured for one purpose, may not be adaptable for another use.Therefore selecting the appropriate fabric is only the first step in providing serviceable fabrics for apparel manufacturing.Designers specify the fabric as part of their design concept. Designers may develop new styles for fabrics that have been successful.

1. Various aspects of Fabric selection

Fabrics used in garment manufacturing can be categorized into two groups: properties and characteristics. A property is a static physical dimension such as yards per pound; whereas, the characteristic is the reaction of the fabrics when a force is imposed upon it. Elongation, elasticity, shrinkage and seam strength are examples of characteristics. These are the measure of reactions to dynamic conditions. Characteristics are physical or chemical changes in the fabric resulting from the application of outside forces.

2. General consideration of fabrics for apparel manufacturing

The apparel producer is interested primarily in the characteristics of a fabric. Although fabric characteristics are related to fabric properties, a fabric property is of no interest to the apparel manufacture unless it controls a fabric characteristic or cost factor vital to him, or unless the property itself such as thickness or weight, has definite utility or style value.There are three viewpoints to stipulating fabric selection

- The consumer's viewpoint
- The fabric producer's viewpoint
- The garment producer's viewpoint

The consumer's interests lie solely in the appearance and wearability characteristics of the fabric; the durability, utility and style values.The garment producer is interested in the garment productionworking characteristics of the fabric, the cost of producing a given garment with the fabric. If the garment producer is a jobber or manufacturer who sells the garment directly or indirectly to consumers, he will be interested, also, in all the consumer values. If the garment producer is a contractor his interest lies only in the field of the production cost aspect of the working characteristics.The same applies to the fabric producer. If he fabricates cloth for garment manufactures, he must consider garment production work characteristics. However, if the fabric producer makes cloth for over the counter retail sales, he does not have to consider whether the working characteristics are good enough to produce the garment with industrial equipment and methods.

In the sampling stage, factory learns the garment construction details and material required for a given order. The sampling department is also work as a research and development (R&D) sectionfor the factory. Sampling process helps production team start the bulk production without many issues.

Selection of fabric: There are thousands of fabric designs and fabric quality. Fabric selection is done based on fabric quality required, like fabric color, fibre content, surface texture, hand feel, physical and chemical properties. If the required fabric is already available in the market, factory purchases those fabrics from the stock. For this factory need to explore various places

for findingthe required fabrics. Otherwise, they work with the fabric supplier to develop the desired fabric quality.

Designing

The designers work in different ways. Some sketch their ideas on paper, while others drape fabric on a dress form and some others use computerized design system. These systems are becoming widely used and provide the designer with a highly versatile and flexible tool for creating new designs in the shortest time. The designer with the help of forecasting trends of style, colour and fabrics develops the illustrations/sketches for haute couture or readymade or mass market.Designers make designs as per the latest trends and buyers test. For big manufacturers, the designing department plays an important role in retaining customers by showing new designs to their buyers in every season.

3. DESIGNING: FUNCTIONS OF DESIGNING SECTION

- Apparel design department is responsible for product development. They focus on developing garment designs in similar product categories the company does its business. Designers develop new design collection every season. Designers make designs as per thelatest trends and buyers test. For big manufacturers, the designing department plays an important role in retaining customers by showing new designs to their buyers in every season.
- Designers develop a library for fabrics, trims and accessories, and for garments.
- Apparel retailers and brands those have own manufacturing set-up, normally set up the design department for developing new designs.

Design Department - The design department can be considered as the research and development department of a clothing factory, because it is in this department that the prototypes of garments are developed and prepared for selling and production. For most factories the processof product development involves seven stages;

1. Forecasting
2. Designing
3. Collection Planning
4. Pattern Making
5. Technology
6. Production of sample garments
7. Pattern Grading

1. **Forecasting**

   Fashion forecasting is information that offers effective and highly accurate trend

predictions to the fashion, style and related industries. Fashion intelligence and industry experience shape the reports which are creative, inspiring and highly focused on various product. This provides analysis of current and future fashion trends and a very comprehensive coverage of Colour & trend direction, 18 months in advance of the season followed by design reports for each trend, 12 months ahead.

2. **Designing**

The designers work in different ways. Some sketch their ideas on paper, while others drape fabric on a dress form and some others use computerized design system. These systems are becoming widely used and provide the designer with a highly versatile and flexible tool for creating new designs in the shortest time. The designer with the help of forecasting trends of style, colour and fabrics develops the illustrations/sketches for haute couture or readymade or mass market.

3. **Collection Planning**

This process is in effect the pre production phase of sampling and the objectives are to set out in detail the styles, fabrics and colors which will represent the company's proposals for the forth-coming season. The designer works in close co–operation with the marketing department and tighter they attempt to determine the best possible style, fabric and price combinations. Using the sketches of core collection, various alternatives and approaches will be examined:

- Developing the variations from the core designs,
- Trying the same cloth on a number of different designs,
- Modifying some of the ideas to make garments more acceptable to a wider range ofcustomers,
- Addition of 'fill-in' type garments for which there may be a steady demand throughoutthe season.
- Inclusion of garments which some of the larger buyers have indicated an interest.
- Balancing the contents of the collection so that it contains the optimum style andprice combinations.

4. **Pattern Making**

Pattern making may be done manually by a trained patter maker with a paper and measuring tools or by using an auto CAD or by draping fabric directly onto the dress form. The resulting pattern pieces are used to construct the garment in required size. Various shapes and sizes of pattern pieces can be produced for various styles of garments.

5. **Technology**

Technological innovations in the garment industry have been tremendous. Each and every department of the apparel industry has the scope of highly efficient machines. Use of sophisticated and advance, machine improves the quality of the product and maximizes the profits of the company.

6. **Production of sample garments**

Sampling unit within the industry makes sample garments supervised by the pattern maker or the designer. Sampling is a continual process during the development of new product. A sample needs to conform to the design, fabric and color trends along with the perfect fit analysis. Cost of each sample must be accurately calculated in order to determine the cost price and then the selling price.

7. **Pattern Grading**

Pattern sizing and grading done on computer or manually is link between pattern design and generation and preparatory stages of cutting in different sizes. It is the process wherepatterns of different sizes are produced from the original master pattern.

4. FABRIC: WASHING, CHECKINGRAINLINE, STRAIGHTENINGPRESSING

WASHING DEPARTMENT - The garment is sent to the **washing department** until complete with all the operations and is then finished in line with the buyer's requirements for that particular style and thus plays an important part in the final look and texture of the garment, which must be faithfulto the buyer's specifications 100%. There are various types of washing procedures involved and they are categorized as follows: standard washing/water, washing/drying, softener washing, desize washing, enzyme washing, stone enzyme washing, rubber ball washing, denim washing, bleach washing, tinting / T-staining. The process which is used to transform the outlook appearance, warmness & fashion appeal of the garments is called garment washing. Garment
pre- wash became popular, especially since 1978 when jeans garments started pre- washing and got instant popularity. It gave different a look of the clothes. Garment washing is mainly done after stitching. Wash types usually depend on the product natures and usages. Based on consumer demand and fashion trend, the buyer will fix the washing type of any product. For example, stone enzyme wash is required for denim item, but light softener wash is perfect for a knitted item.

Garment wash here refers to garment pre- wash performed after production of garment's beforeusing it for the consumers. Garment washing is utilized for the following reasons:

(1) Usually, some Garment shows up hard, feeling rough, stiff and not responsive enough forwearing if not pre- washed.

(2) Garment is often made bigger and larger. Pre- wash returns those to the right size anddimensional instability.

(3) After pre- wash garment becomes fit as they get rid of shrinkage; as a result, thegarmentbecomes a soft hand feels and become size free.

(4) After wash some garment's become more attractive, lucrative and lively, such as jeans, twill,cotton, gabardine etc.

(5) Different washing methods are being used to make an additional appeal for customers/Buyers.

(6) During manufacturing dirt, spot or oil mark may add to the garment's what may

eliminate bywashing process.

(7) To eliminate starch and chemicals what used during fabric manufacturing and dyeing process.There are different varieties of garment wash used nowadays:

1. Normal wash
2. Pigment wash
3. Bleach wash
4. Stone wash with or without bleach
5. Acid wash
6. Enzyme wash
7. Caustic wash
8. Garment wash and over-dye
9. Whitening

A simple outline about different garment wash has given here:

1) **NORMAL WASH:** Normal wash consists of washing garments in hot water with adequate detergent and softener, rinse with plain water and dry in tumble dryer until it is 100% dry. Some sodium is added to lend the garment a prominent washed look. Water temperature, proportion of components of wash is adjusted as per requirement of wash and types of fabric; the garment is made of.

2) **PIGMENT WASH:** Pigment Wash is similar to normal wash but a bit costlier. The garment is solid color pigment dye. The requirement is that the color should fade evenly to lend the garment a prominent washed look. Pigment wash requires a higher temperature of water than a normalwash.

(1) Use hot water 50-60 degree C.

(2) Load the tumble washer not more than 70 % of its capacity. It enables garment to move inside smoothly. If fully loaded with garments due to the friction of the garments with tumble body.

3) **BLEACH WASH:** -Bleach wash means that bleach chemical is used in water while washing in atumble washer. Strict washing time is a requirement with such wash because otherwise the garment may be over bleached and the color cannot be reversed.

4) **STONE WASH: -** Stone wash means washing garments with special stones so that garments achieve a very strong washed effect. Volcanic stones are used in such wash abrade exposed parts of the garments, this idea of washing with porous volcanic stones is to give the garment a strong and rough wash to achieve the pronounced washed effect through abrasion on the exposed areas, such as the seams and pocket corners.

Sometimes, bleach is added to the wash so that the color fades in a more pronounced manner. This is done to make navy blue jeans into a more faded light blue. Such wash requires a lot ofskill, experience; workmanship and expertise so that desired results are achieved

5) **ACID WASH:** It is a patented process and can be used only by permission. It is also a kind of

stone wash. The wash is performed in two steps: in the first step, garment is washed without waterand in the 2nd step with water.

(1) Soak volcanic stones in potassium permanganate solution. Stones absorb chemicals and become saturated. The stones are then dried in normal air or sun. The stones are ready for work.

(2) Denim garments are now made ready for wash. They are desized/detached in water in atumble washer and dried in a spin dryer.

(3) The garments are put in a separate tumble washer filled with *treated stones*. Water is not added. Now run the tumble dryer wash the garments without water. Tumble washer is run to wash the garments without water. Stone will abrade the garments, especially, the exposed parts. Hiddenparts will not be abraded.

(4) After that, the garments are taken out of the tumble and transferred to another tumbler filled with water for washing and rinsing. After rinsing is over, the prominent acid wash effect will show up.

The treated stones carry the chemical to bleach the exposed parts and bleach them to white. But the hidden parts remain untouched. Whitening agents are often added to water during rinse to make the white color in the blue jeans whiter to display acid wash.

6) **ENZYME WASH:** Enzyme wash is performed with a kind of live cell. Enzyme can break some fibers of fabric and gives the fabric special effect desired on the garment. Enzyme wash provides the fabric a soft, sanded or "peached" effect very desirable on many garments. Enzyme wash is also useful for indigo denim.
In this case, enzyme can replace stone but gives denim a stone wash look, with better and nicer blue and white contrast on the fabric. Enzyme wash is, however, costlier than stone wash.
7) **CAUSTIC WASH:** Caustic wash is a pre- printing wash. Caustic is a strong chemical with highly corrosive features. Prior to printing on cotton fabrics, gray goods are treated in boiling water with caustic, which also has strong cleaning power, especially for grease. This wash can remove all soil, dirt, grease, fine particles of cotton seeds as well as all foreign materials. As a result, only pure cotton fiber in the fabric for printing is left. It leads to stability of printing and well- cleaned fabric. However, when we want to do caustic wash on garments, we just do the opposite of the above; prior to printing, fabric is not treated with caustic wash for cleaning.

8) **GARMENT WASH AND OVER-DYE:** This type of wash is also used for denim garments to give them an exclusive look. This is performed in the following way:
Wash the denim garments with stone so that the double needle seams, pocket flaps, and exposed parts get washed down to light blue color or white.
(8.2) Put into dye the tumble to dye the garments to get the desired color.

(8.3) A coat of new color will appear on to the garment, especially, in areas where the garment has been washed to a light shade. It creates a unique but different look. In this process of wash, the lining or pocketing will pick up the color too. By this wash, direct dye or reactive dye same as dyeing fabrics or yarn may be used. Direct dye is cheap. So, direct dye may be utilized with the concomitant use of color fixing agent, after dying to make the color more stable. In case of solid color fabric staining within the garment is not a problem. However, if garments of different colors are washed together by the consumers, color may transfer to other garments. Reactive dye is always preferable in this case.
9) **WHITENING:** Whitening agents are used to create a super white look. (Unless the garments you wash is all colored namely no white color at all in the fabric, you should use whitening powder in the rinsing process to make the white part more white) In denim where there are colored warp threads and white weft threads. If such garments undergo "stone wash and bleach" whitening powder is used for the final rinsing. It makes the white threads in the fabric whiter and generates a stronger contrast between blue and white on the surface of the fabric. After washing, denim checks the reverse side of the fabric to *evaluate if adequate* whitening agent has been used during rinsing. It is a common practice that garments having white parts should be washed with whitening powder at the time of rinse. It generates a quick and desired look.

CHECKING GRAINLINE OF THE FABRIC

After the fabric is purchased and before cutting and sewing process, the following two proceduresmust be undertaken in order to avoid any deformities during construction.

Grain is the direction of the yarns in a fabric. Grain can be lengthwise grain, crosswise grain, andbias. Grain is very important when constructing garments since it determines how a garment will hang, fit and appear. All fabrics that are made up of yarns have grain or direction. Technically, the term grain only refers to woven fabric while the term direction is frequently used with knit fabrics.

All fabrics made from yarns are *'grain perfect'* after knitting and weaving. Looms and knitting machines construct fabrics in a grain perfect manner. However, a fabric can become off- grain during the processes of finishing (dyeing, printing, permanent finishing, and/or packaging, winding onto a bolt). Garments that are not cut and sewn according to the fabric grain can stretch in places they should not, have sagging hems and be uncomfortable to wear. Patterns are specifically designed with grain in mind so that the body can take advantage of the amount of stretch or lack of give in the fabric.

Woven Fabric - The lengthwise yarns (sometimes called the warp) run parallel to the selvage edge of the fabric. They are usually more tightly twisted, stronger, and more stable than the crosswise yarns.

Selvage – the firm edge along the lengthwise direction of a woven fabric. The crosswise yarns (sometimes called the woof, weft, or filling) are perpendicular, or at right angles to the selvage. Theyare woven under and over one or more yarns to create the fabric. These yarns are usually somewhat more loosely twisted and weaker than the lengthwise yarns.

Bias is any diagonal direction on a fabric. The fabric will 'give' or stretch.Any slanting line or cutin a garment that is not at 45 degree angle is referred to as garment bias. Basically a bias cut incloth is a slanting or diagonal severing of the material. Both warp and woof threads will be cut. **True bias** is the 45-degree angle or middle between the crosswise and lengthwise grain. Fold the fabric so lengthwise and crosswise yarns lie on top of and parallel to each other. This is where a woven fabric will have the greatest stretch. True bias is used for bindings, facings, pipings, folds, cords etc. It equally severs both warp and woof threads.

On grain print is a fabric wherein the prints on both the crosswise and lengthwise yarns run at right angles. This kind of fabric has perfect right-angled corners and is said to be 'grain perfect'.**Off grain print** is a fabric which does not show perfect right-angled corners and the lengthwise and crosswise lines/print does not run at right angles. Such kind of off-grain printed fabrics are difficult to sew because it is impossible to match the seam lines, at centre front, at centre back and at shoulders.

With the grain When the edges of yarns along a bias cut edge tends to close up compactly when stroked with fingers, it is referred as with the grain. While working with a bias edge, it isbetter to work *with the grain* to avoid stretching or raveling.

Against the grain When the edges of yarns along a bias cut edge tends to fray or come apartwhen stroked with fingers, it is referred as against the grain.

Straightening of fabric grain - Woven fabrics especially of lower quality are often slightly "*off grain*", it means lengthwise and cross wise threads are not completely perpendicular to each other. To make sure that the lengthwise and cross wise threads in the fabric are at right angles toeach other, referred to as "*on-grain*", it is necessary to straighten one of the cut ends.

Methods of straightening woven fabrics

1. **Pull The Thread From Selvedge To Selvedge** - This method is appropriate for looselywoven fabrics.
    1. In woven fabric one filling yarn is carefully pulled until the fabric puckers.
    2. Cut along the puckered line to the pulled yarn.
    3. Repeat the pulling and cutting process until the opposite selvedge is reached.
    4. The cut edge will be on grain and can be used in cutting patterns.
2. **Cutting Along A Prominent Filling Yarn /Print Line -** When a filling yarn is readily visiblethe fabric may simply be cut from selvedge to selvedge.
    1. This method can be used for a striped or plaid fabric with lines that run along thecrosswise grain. The stripe or plaid must be *woven* into the fabric.
    2. Cut along one of these lines from one selvedge to the other, close to the cut edgeof the fabric.
3. **Tearing -** This method is appropriate for tightly woven fabrics. Loosely woven fabrics maystretch out of shape with this method.
    - Clip into the selvedge near to the cut edge of the fabric.
    - Tear the fabric all the way down to the opposite selvedge.

4.**Steam press method:** If the above mentioned method does not work, clip the selvedges at intervals, sprinkle water on the fabric and press with a hot iron in the appropriate direction till thefabric become grain perfect.

5.**Immersion method:** This is the most effective method for straightening washable fabrics. The fabric is folded lengthwise and the selvedges are tacked together. It is then immersed in water until completely wet, and excess water is squeezed out. The fabric is hung up, till it is half dry. The half dry fabric is placed near the corner of a table and stretching process is carried out

to make it grain perfect. After straightening, it is kept on a flat surface and dried. When dry,press with an iron, remove the tacking stitches along the edges.

Note: If a printed fabric is off-grain the fabric grain can be straightened but not the print. Hence it is necessary to carefully inspect print of the fabric before purchasing. It is better to avoid any printed fabric that is badly off-grain.

5. PATTERN LAY OUT

The placement of pattern on the fabric, in an economical manner, that is without wasting fabric is known as pattern layout. All the patterns should be arranged prop-erly following grain of the fabric.Example the bodice centre front will be in straight (lengthwise direction) grain.

Objective of layout

Once a design is finalized, the next step is to construct it. The various steps involved in garment construction include pattern making for the chosen design, fabric estimation, layout on fabric, cutting, assembling, stitching and finally finishing. The main advantage of a pattern layout is that it minimizes fabric wastage, thus helping to optimally utilize the fabric.

A layout can be defined as a methodical arrangement of various pattern pieces on the fabric. The main objectives of a layout is

1. To ascertain if the fabric bought is sufficient for the design planned.
2. To minimize fabric wastage
3. To optimize the use of fabric

Importance of layout

Layout and cutting of clothes have become complex of late and an exciting art. Layout can be viewed as a process of placing all pattern pieces of a garment style correctly on fabric to ensure economical usage. It is simple if the basic principles are learnt thoroughly and clearly if designers pay attention to incremental changes in fashion demand (Aldrich, 1997). Layout procedure has two main media involved. These are final patterns and fabric on which the patterns are to be laid. Knowledge and understanding of these media is an essential tool for successful layout and appreciable constructed garments. Fabric is the prime raw material in garment construction. 70 percent of the garment cost is incurred by the fabric. Therefore every centimeter of fabric saved is money saved! It is one of the preliminary processes in garment construction. It involves planningof pattern layout on the fabric. It is a crucial process which influences the economy of the fabrics

consumed for a garment. it also allows to take care of any defects in the fabric by subjecting it through checking for quality. it helps to minimize quality issues like bowing, shade variations or pattern defects with in a garment. it calls for higher accuracy. Therefore layout plays an important role in arriving at most economical fabric consumption.

Principle of layout

The principle of layout is based on the thumb rule of following grain direction and fit of the garment greatly depends on the grain of the components cut. The way a particular garment fits or hangs will be the resultant of the grain properties. Especially in woven fabrics, lengthwise grain is primly followed to cut major components, crosswise for those parts which undergo more stress. Off-grain or bias for maximum stretch or give.

Factors that influence the layout –

- Type of the fabric – refers to the construction, woven, knit or leather.

- Directions in the fabric – lengthwise grain, width wise grain, off grain, courses, Wales or non-direction materials like leather.
- Width of the fabric – narrow, medium, double with or tubular fabrics.

- Surface of the fabric – brushed, un-brushed.

- Pattern of the fabric – whether solid dyed, chequered, plaids, all over printed, randomly designed.
- Style of the garment – type of component to be cut out like symmetric, asymmetric.

- Number of components to be cut.

- Press the fabric without any wrinkles before laying the patterns.
- Place the fabric on a large or a hard flat surface, which is easy for work.
- Place the larger patterns first. Place sim-ilar pattern together, with same length. Example placement of bodice front and bodices back next to each other, such that the side seams are close to each other.
- Place the smaller patterns in gaps in between the larger pattern.
    - If pattern is to be cut in more num-ber, example two sleeve patterns, place them on fold. This concept is not pos-sible when the fabric has a one way design or when the patterns have dif-ferent front and back patterns.
    - Keep weight, pencil, pins ready in hand, to draw, or pin or place weights on patterns, so that it remain in cor-rect position.

Types of Pattern Layouts

Based upon the place-ment of the patterns, the layouts are classified as

Open Layout - Open layout is the simplest layout. The fab-ric is spread on the table and the patterns are laid from left to right one after the other. This is easy for beginners. No fold is made in this method. It can be used for all patterns. This is used especially for designs with dif-ferent left and right patterns.

Lengthwise Centre Fold - The fabric is folded in the lengthwise direction. The selvedges of bothsides are placed one on top of the other and folded in the middle. The fabric forms a fold at the centre. All folded patterns are placed along this fold. This fold is also used for different type of frocks, shirts and blouses.

Width wise Fold - The required width needed for the pat-terns is taken on the fabric and folded in the lengthwise direction. This is com-monly seen when many small patterns are found in garments. The fold should be parallel to the selvedge. This is used for many garments from simplebaby's panty to integrated men's coats.

Bias /Crosswise Outer Fold - Crosswise centre fold is similar to length-wise centre fold. In this fold, the fabric is folded in crosswise direction. It is best suited, when the patterns are too narrowto be fitted in the lengthwise fold. This fold can also be used when special effects are needed like having a dress with hori-zontal strips using a material with length-wise stripes.

Double Fold or Combination Fold

In combination fold the fabric is folded in lengthwise and crosswise grains together. This layout isused for sari petticoats and jablas

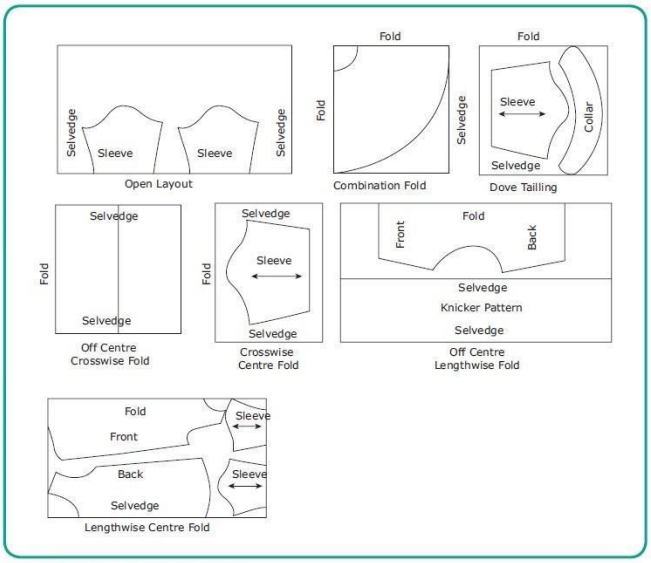


Figure 11.4 Different Types of Layout

Make a trial layout by keeping weights or two pins per pattern, to make sure that cloth will be sufficient. Rules 6 to 9 must be borne in mind while making the trial layout.

Straight grain lines on patterns must be kept parallel to the fabric selvedge. To ensure this, measure and adjust the pattern so that both ends of the straight grain line are the same distance from the selvedge and pin the pattern to the fabric along the grain line arrows.
Fold lines on the patterns must be kept on folded edges of fabric.

Leave enough space between patterns for cutting outward notches and marking seam allowance (ifthe patterns do not include seam allowances). Also make sure that there is enough material left for cutting out belts, facings, etc. for which you may not have made paper patterns.

Fabrics with one way design – When cutting these fabrics, you must take care to see that all the pattern pieces are arranged in the same correct direction.Any fabric that has a woven, knit orprinted design that needs to be running in one direction on the finished garment is called a one-waydesign.
These designs can be any type of pattern or design including:

- floral,
- abstract shapes,
- stripes,
- plaids,
- checks.

The pattern may be all over the fabric (overall print/motif) or only on one edge (border print/design).

Many prints are treated as one-way designs when they have a dominant motif that needs to be placed carefully.
In a two-way pattern half the motifs face upright and half are upside down so that the patterngives the same feeling in either vertical direction Fabrics printed with one-way or two-way patterns, however, must always be utilized in a consistent direction. That is, fabrics so printed must alwaysbe cut with respect to the "top" and "bottom" of the pattern so that a piece of fabric showing upside-down motifs is not placed next to a piece showing right side-up motifs. Because direction of motifsis a consideration in the utilization of these patterns, they are referred to as directional.
Fabrics with nap and pile – have to be treated like fabrics with one way design **Fabrics with bolddesigns such as plaids, and crosswise stripes** – Match plaids and stripes so that they form continuous lines across seam openings or meet at equal angles.

Asymmetric designs – These designs call for right and left sides to be cut separately from asingle layer of fabric, taking care to see that you are not cutting both the sections for the same side.If the material has no right and wrong side, this problem will not arise.

Rules to remember in pattern layout

- Press the fabric before laying it out on the table.
- A large table is useful for comfortably laying out all the pattern pieces.
- For an open layout (where single thickness of fabric is used) place the fabric with the right side up.
- For all other layouts, fold the right sides facing each other so that the wrong side faces seamstress.
- If a combination fold is used, lay and cut the lengthwise pattern pieces first before refolding the cloth for crosswise layout.
- Since most garments are made with the lengthwise grain running vertically on the body, align the pattern pieces on the fabric accordingly, with the grain line of pattern parallel to theselvage.
- Pin all the pattern pieces to the fabric. Use only dressmaker's pins as they do not damage the fabric. Pins should be perpendicular to the stitching lines and the cutting line.
- Place large pattern pieces first and then fit in the smaller ones.
- Lay the pieces as close to each other so that fabric is not wasted.
- Fit pattern pieces that are similar in shape next to each other. This process is called ***dovetailing***.
- Always test out to see if all the pattern pieces fit into the fabric being used.
- Mark seam allowances on the fabric if the pattern indicates so.
- If pattern details are being transferred using a carbon paper, use a paper that is as close tothe colour of the fabric as possible.
- Mark pattern details only on the wrong side of the fabric.
- Keep the fold lines of patterns on the folded edge of the cloth.
- When using a lining material, mark only on the lining than on the actual fabric the garmentis made.
- Try to fit the wide end of one piece to the narrower end of the other
- Arrange all pattern pieces before cutting the cloth**.**

6. CUTTING:

Fabric cutting is a very important process for manufacturing garments. Apparel can be rejected ifthe cutting process will not be perfect. As a result, some points should consider before cutting which helps to minimize the probability of garments rejection by the buyer. The clarification of cutting is very complex. In readymade garments industries, the fabric is cut from layand spreading with accuracy and properly which is known as fabric cutting. Marker outline is used to cut the fabric. During garments manufacturing, fabric cutting is very important as if something iscut in the wrong way which is not be rectified. .

Basic steps to cutting fabric -

1. Ensure that you have lightly pressed the fabric with a medium hot iron. For accuracy in cutting you need to get the wrinkles out.
2. Use the sharpest scissors you can get your hands on for cutting
3. Layout your fabric on a large hard surface (I use my big dining table for cutting) – gives you a perspective. Also ensures smooth cutting. It will be best if you can find a big surface where you can rest the full or the folded cloth without any edges hanging outPrepare the paper pattern by cutting it out.
   2.Prepare the fabric by prewashing and pressing. Learn more about prewashing fabric before sewing here.
4. Most of the time there will be creases in the paper pattern; use a dry iron to take them out.
5. If the fabric has a one-way design then lay all of your pattern pieces in the same direction with the finished project in mind.
6. Accurate notch size. If it is large in size, it can be seen after sewing of fabrics. Also, there is a great probability of producing problems in the matching of patterns after sewing.
7. Lay out the fabric on your cutting surface as per the grain. Should position the pattern pieces on the fold or the grainline as indicated.
8. You can first layout all the pattern pieces on the fabric and see which pattern arrangement works. Try out different arrangements to get the prints/nap etc correct, save on fabric. You need toknow that all your pattern pieces will fit into the fabric you have at hand. So ensure that all the pattern pieces will fit within the fabric. This has to be done before cutting. If they do not fit you may have to adjust the placement of the pieces. Likewise, if you are marking directly onto the fabric mark the big pieces first, then the smaller pieces. This way if the cloth is not enough you canadjust and cut smaller pieces better than big pieces.
9. Pin paper pattern to fabric. You can also use pattern weights. This ensures that there will be no shifting of the paper pattern. Pin near the outer edge as well as inside. Pattern weight can also be used. I prefer pins but there are people who say pins distort the fabric.
10. Trace around the pattern.. Mark the darts etc by tracing with a carbon paper or by tailor's tacks.11.Remove paper pattern.
12. Or alternatively, you can keep the paper pattern and cut it. In this case, keep one hand on the pattern to keep it from moving. If you lift the pattern even once the whole thing may get distorted.
13. Make long strokes of cutting with your scissors – this is advised for cutting long straight edges. But for cutting curves take short strokes.
14. Cut off the excess fabric outside the marked lines using a scissors or a rotary cutter.

Cutting tips for different fabric types

Cutting plain fabric This fabric can confuse you – both the face and the back of the fabric can lookalmost the same. You will have to mark the face of the fabric with a chalk before cutting this. You can choose the side which is smoother without any lines of the weave as the face (front).
Leather or faux leather If you are cutting leather or faux leather you can save a lot of

frustrations by using a rotary cutter and mat. That is not to say you cannot use scissors. But rotary cutter cuts best.Never ever pin the pattern to the faux leather. Pin holes look horrible and it is better to use pattern weights. You can use paper clips or binder clips also clipping the pattern to the edges. I have even used tic tac hair clips

Printed fabric One of the joys of sewing your own clothes for me is matching prints on the seam line.If you are cutting stripe, plaid and other fabric with prints and designs do not follow the lengthwise grain. Instead, you can follow the print. Cut the pattern pieces out of a single layer of fabric. Then match the design of the second piece with the first.

Striped fabric – Check out the post on the 16 different types of stripes in fabric. One important thing to note when cutting stripes is to ensure that the two sides left and right gets the same amount of stripes. Otherwise, it could look unbalanced.Lengthwise stripes elongate a body, so ifyou want a slim look choose this direction for cutting the fabric – you would also consider lengthwise stripes when cutting sleeves. You can check out this post on tips for making you look slim with the right clothes and prints. If you cut striped fabric on the diagonal and join it, you get interesting results.

Check fabrics it is unpardonable when you have both sides looking unbalanced checks.It is very difficult to match. The main things are to get the checks in balance on both sides, where are the dominant checks placed, whether you want crosswise matching.You need the same number of checks on both sides of pattern pieces.- this should be ensured especially for sleeves, legs, etc. This is called crosswise matching. For eg you may want to match the chequered pattern on the sleeve with the bodice so that they look continuous. It can look very nice but may be challenging. You can achieve this with careful planning. Match at the seam lines and not at the cutting lines.

Printed/patterned cloth Check out the post on the different types of fabric patterns in dress materials. With printed clothes you have a challenge in getting prints similar for two sides – like getting the same prints on both sleeves may prove to be difficult if you have only so much fabric. In such cases, it becomes imperative that you buy more fabric than is required if you require this kind of pattern matching.

slippery fabrics like chiffon This is a tricky and frustrating space – cutting slippery fabrics. You can use thin paper, tissue paper underneath to cut these fabrics without disaster. Also use serrated scissors.

Wetting the fabric lightly with a spray bottle will give some weight to the fabric. But you have to be careful with the cutting surface.

If you have an absolutely unmanageable fabric in your hands you can skip cutting before sewing altogether. Mark the pattern on the fabric. Sew the seams. Cut it out after sewing with enoughseam allowances.

Delicate fabrics For tissue like fabrics you can keep a thin paper/ tissue paper along with the fabric and cut together. use this method for silk also .

Directional prints A very important thing to consider when cutting printed fabrics is the directionof the prints. You do not want an upside down design on your sewn garment (imagine an upside down house print). Keep all the pattern pieces in the same direction before cutting.

If you have a one way print fabric, care needs to be taken that all pattern pieces are cut in the same direction. The fabric has to be kept in one directions to get the print in the way you want.

- Sometimes you may also want a particular print on a special place of the garment. This is should also be taken into consideration when buying the fabric (may need more yardage)

and placement of patterns

- You should be aware that if you want to match prints along the seam line you will need more cloth than the pattern calls for. This is because once we have cut one side of the pattern, you will have to search for the matching portion in the rest of the cloth for the same print. When looking out for the matching print, take into consideration seam allowance along the seam also.
- Keep the part you have already cut on the matching printed portion. Mark

  around and cut it out. If you use invisible zippers along the seam you will not even notice that the fabric panel belongs to two pieces.

7. POINTS TO BE KEPT IN MIND WHILE STITCHING THE GARMENT

1 Select the best fabric

2. Prewash fabric before sewing

3. 3 Learn to cut fabric properly
4. Get a good enough sewing machine
5 Press as you sew
6 Always interface where necessary
7 Maintain your sewing machine
8 Learn to make clothes from sewing patterns
9 Get some nice sewing supplies and tools
10 Plan the sequence of stitching in advance
11 Always clip and trim seam allowances wherever necessary

12. Buy the best quality sewing notions and trims

13 Follow couture sewing techniques
14 Hang garments before hemming

15 Check for loose thread trails and trim away

16 16 Follow the Fitting standards in clothing

1. Select the best fabric Quality fabric choice is the number one pre-requisite of a great looking polished sewn garment.

Buy as per your sewing pattern or follow the general guidelines to see how much fabric you need for your sewing

Different fabric types call for different types of sewing techniques – checkout relevant articles for sewing with sheers and transparent fabrics, satin, leather plastic, vinyl , pleather poplin polyester and denim.

2. Prewash fabric before sewing

Most of the fabric shrink in wash. This will make your finished sewn garment unfit to wearafter

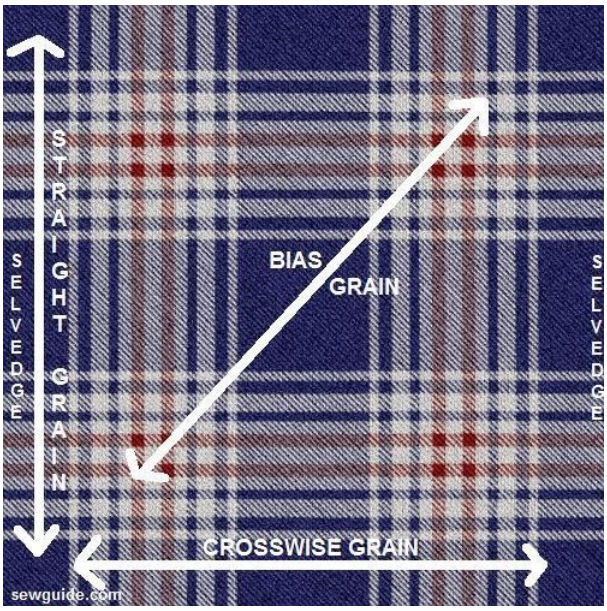
the first few washes if you have not prewashed the fabric.

Prewashing the fabric is nothing but hand washing it and drying it properly. Remember toiron all the wrinkles out before using it.

3. Learn to cut fabric properly

Use Sharp good quality scissors to cut fabric

- Find the right side of your fabric. For your knits, stretch it by the crosswise grain – it will curl to the rightside. For wovens usually the right side will look brighter with a good sheen. If you still cannot, look for the selvedge holes – you will find open holes on the wrong side. There may also be thread knots /slubs on the wrong side.
- Ensure that the fabric is cut on the lengthwise grain for dresses pants skirts etc for proper drape and good fall. Learn more about cutting the fabric properly here and about grainline and how to cut fabric on the bias



4. Get a good enough sewing machine

Your Sewing machine doesnot have to be a fancy piece for you to take up sewing. Anordinary straight stitch or zig zag sewing machine will suffice.

5. Press as you sew

It is very easy to skip the pressing when sewing clothes.

Pressing is such an important thing when sewing, the whole look of your final product maydepend on this.So ignore pressing while sewing at your own peril.

An iron can give that professional 'not- homemade' look to your home made clothes.Always sew the seams open.

6. Always interface where necessary

Interfacing is a fabric material which is used to give firmness, strength, stability and weight to seams and fabric surfaces.The fabric would just flop around if not for the interfacing- I cannot imagine a collar or cuff without interfacing.

You can use fusible interfacing on just about any fabric. Just place the glue side of this

interfacingon the wrong side of your fabric and then use a hot iron to press in place.

Always use interfacing on facings and seams with stresses like butonholes, zippers, behindpockets.

interfacing does for you

- Reinforces
- Stabilises
- Prevents sagging
- Give shape
- Neatens edges

7. Maintain your sewing machine

Your sewing machine can make your sewing life hell if you do not give it the care it deserves.

9 Get some nice sewing supplies and tools

You most likely already have the most essential sewing tools like sewing machine, tape measure, scissors, pins, chalk and pattern paper.

10 Plan the sequence of stitching in advance

You can stitch the sections as per the sequence detailed below or as per your pattern instructions.

11. Always clip and trim seam allowances wherever necessary

For seams to work nicely this is a necessity, especially if you have curved seams. Your pattern pieces have curves and you stitch straight lines . To conform to the curves the seam allowances should be trimmed to the minimum and clipped at intervals

12. Buy the best quality sewing notions and trims

Sewing notions and trims you use on your clothes shout the quality of the final product. Even a well tailored clothing in a good fabric can be ruined with a cheap looking zipper or button. So donot compromise on this.

13 Follow couture sewing techniques

Finishing the fabric edges, using delicate invisible stitches are all techniques designers use to finish their exquisite creations. Learn and follow them.

14. You may think that it is simple enough to leave the inside fabric edges as is. But after a few tumbling in the washing machine the fabric edges will definitely fray and create a mess inside your garment. It looks professional and polished if you have finished fabric edges inside your garment too.

14 Hang garments before hemming

Most fabric stretches. To ensure that the stretch is done away with before hemming hang the dress for at least 12 hours before you hem it. You will eliminate the stretch of newly sewn clothes this way.

15 Check for loose thread trails and trim away

Nothing is nore unsightly than loose threads on a garment you are wearing. When you back stitch at the start of a seam and when ending, it you will be leaving lot of thread tails – just clip all of them at the end of your session painstakingly.

16 Follow the Fitting standards in clothing

There are some standards of clothing that you should ensure that your finished sewn product should adhere to. Ensure that they are followed so that you make something that you are proud of

You should ensure that the garment you have sewn meets the following criteria

- Buttons fasten easily, neatly and securely.
- There are no loose seam stitching or hanging threads
- Buttons and buttonholes are all placed at an equal distance from the edge
- Stitches are all even and smooth
- Collars are neatly finished, equal on both sides, undercollar doesnot roll to the front collar. Thecorners are neatly turned out.
- Darts are lying smooth without any projections. Dart on either side of the bodice are placedequally and look the same.
- Facing at the neckline is neatly turned inside the garment without any bulges. The fabricedges are finished
- Prints and patterns of the cloth you have chosen look neatly joined.
- Hem stitching is looking smooth without any projections or bulges and at an even distancefrom the hem edge
- The pant hem is ending 2 cms from the ground when you are wearing shoes. Long sleevehems are touching the top of your hands.

  Dressmaking is rewarding. But shoddy work is not encouraging. Make clothes you can wearwith pride by following these tips.

8. FINISHING – IRONING OF DIFFERENT FABRICS

PRESSING

Pressing or **ironing** is the most important finishing process in the readymade **garments sector** which is done by subjecting a **cloth** to heat and pressure with or without steam toremove unwanted creases and to impart a flat appearance to the **garments**. **Pressing** or **ironing** is also done to introduce creases in the **apparel**.

Objects of Pressing or Ironing:

Pressing or ironing has different types of objects which are mentioned below:

1. Removal of unwanted creases andcrinkles,
2. Shaping,
3. To apply creases where necessary,
4. Under pressing,
5. Final pressing.

1. Removal of unwanted creases and crinkles: - Various types of unwanted creases and crinkles arise during manufacturing the garments. These may be formed due to the washing of garments. Pressing or ironing is done here to remove those unwanted crinkles and creases fromthe garments.

2. Shaping: - In the apparel dart and seam are used for proper shaping to the wearer. Pressing is done here to increase the beauty and attractiveness of the created shape by using dart and seam. In some cases, it needs to shrink or stretch of garments parts for shaping.

3.To apply creases where necessary:

In the garments manufacturing industry, pressing or ironing is done for applying a creasingeffect in the apparel to increase the beauty. Also pressing or ironing is done before sewing the garments to increase the beauty and proper sewing.

4. Under pressing:

Before sewing the garments, some parts needed minimum pressing to sewing easily and beautifully which is called under pressing. In the readymade garments industry, under pressingis done for making coats, jackets, and trousers.

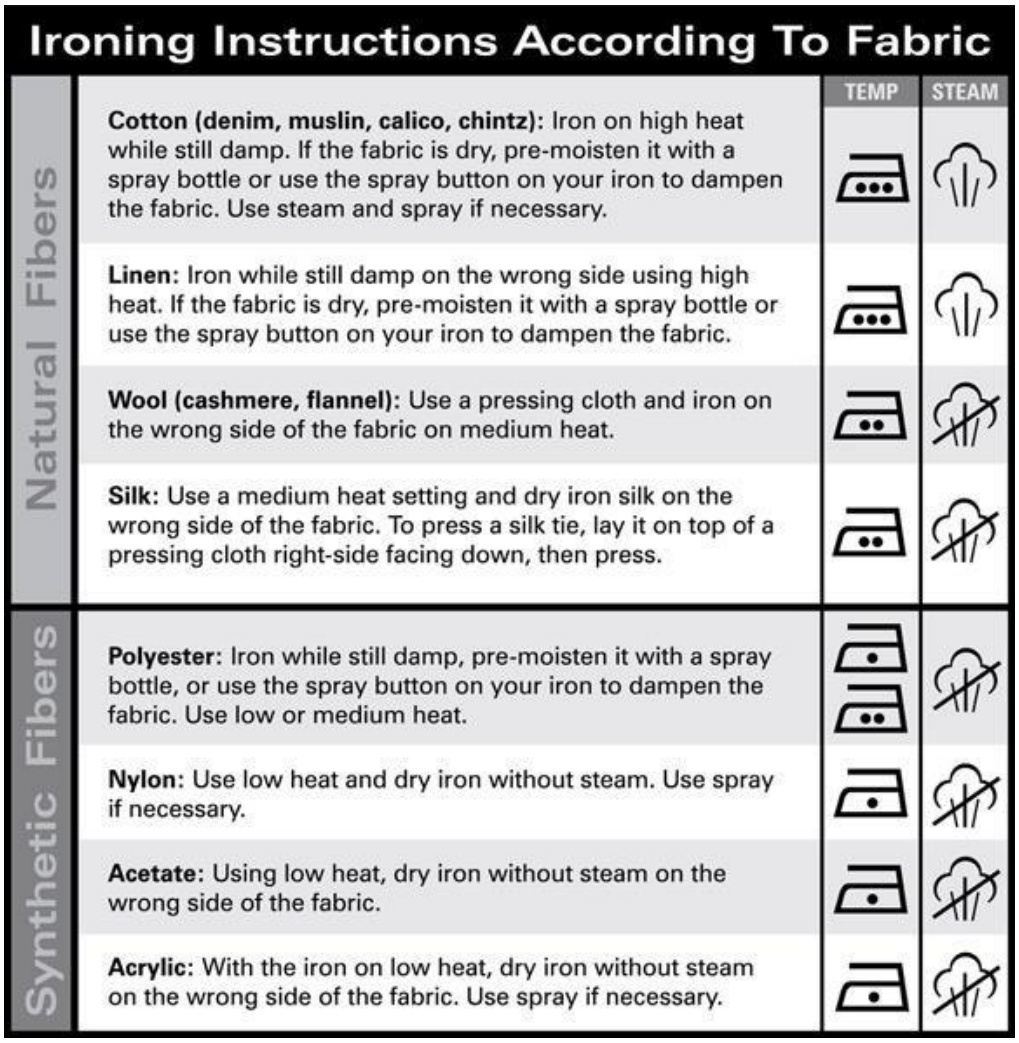
5. Final pressing:

After making the garments, pressing is done finally before folding which is called final pressing. Pressing or ironing is done here to increase the beauty of garments and to impart a flat appearance to the clothing.

As every fabric is different, your ironing technique may need to be adjusted to make sure you don'tdamage your favorite linen pants or cashmere sweater. Make sure to check the label inside your clothing or linens to see the recommended fabric care instructions, including ironing recommendations. Follow these simple rules if you are missing a label:

- If you are ironing a piece of clothing but don’t know what the fabric is made out of, use thelowest temperature first and test on an inside seam.

- Use a low-temperature setting if you are ironing a fabric blendIf you are ironing clothing



made of multiple types of fabric, start on a low setting

Natural Fibers

- **How to Iron Cotton** (denim, muslin, calico, chintz): Iron on high heat while still damp. If the fabric is dry, pre-moisten it with a spray bottle or use the spray button on your iron to dampen the fabric. Use steam and spray if necessary.
- **How to Iron Silk:** Use a medium heat setting and dry iron inside out. To press a silk tie, layit on top of a pressing cloth right-side facing down, then press.
- **How to Iron Wool (cashmere, flannel):** Use a pressing cloth and steam iron inside out on medium heat.

Synthetic Fibers

- **How to Iron Acetate:** Using low heat, dry iron without steam on the wrong side of thefabric.
- **How to Iron Acrylic:** With the iron on low heat, dry iron without steam on the wrong side ofthe fabric. Use spray if necessary.

- **How to Iron Nylon:** Use low heat and dry iron without steam. Use spray if necessary.
- **How to Iron Polyester:** Iron while still damp, pre-moisten it with a spray bottle, or use thespray button on your iron to dampen the fabric. Use low or medium heat.

Whether you are ironing linen, silk or cotton, the most important thing is to have an iron that works well and is up to making your clothing or fabric wrinkle-free. Look for an iron that not only has temperature settings but includes specific fabric types so you don't have to guess.

The finishing department is the department that comes after all the departments and plays an equally important role in the garment's final appearance.

Activities of the finishing department are listed below -

- **Thread trimming**
- **Attach button and button holing in case these jobs are done in the stitching section**
- **Checking of garments**
- **Stain removing**
- **Garment Pressing / Ironing**
- **Folding and Tagging**
- **Packing**
- **Communicate with internal department**

1. **Thread Trimming: -**In the stitching department, thread trails and thread chains are not trimmed neatly. Uncut threads and thread tails in garments are trimmed in the finishing department by helpers. Uncut and loose threads on garments are considered defects.
2. **Checking garments: -** All garments are checked at the finishing stage for visuals and measurement. Finishing checkers check the complete garment inside and out. Checking is done for garment detailing, such as care labelling, and trims.
3. **Button attach and Butting holing: -** Products those have trimming like button, snap button, eyelets are attached in finishing section.
4. **Removing stains:-**Stains and spots are found on garments. Spots are removed using a hand spot gun or by using a stain removing machine prior to pressing. Dust and stains can be removedby machine washing. So, many times finishing department wash garments inside department.
5. **Repair work and mending -** Defective garments may need to repair for stitching and fabric defects. All repair activities are done in finishing department itself instead of sending defective garments to stitching department.
6. **Ironing garments: -** Garments are ironed using a steam iron. This is done to remove creases in the garment. For knitted garments measurements are set by steam press. Vacuum pressing

tables are used for garment pressing.

7. Folding and tagging: - Pressed garments are folded in a specified dimension. Tags, such as price tags and hang tags are attached to the garment by means of a kimble gun or threads.

8. Packing garments: Finally, properly folded garments are packed into poly bags as per customer requirements. Individual poly bags are then packed into bigger cartons.

9. Preparation of packing list: The packing in-charge prepares a packing list for the shipment. After packing is completed for an order, the finishing department informs the concerned merchant.

10. Internal shipment audits - Quality department perform internal shipment audit in the finishing department. This audit is done prior to final inspection.

11. Documentation and reporting- Like other departments, finishing department maintain production records for pressing, and packing.

10.QUALITY INSPECTION

QUALITY INSPECTION -

Garment Inspection? - Garments inspection is an important term in the readymade garments sector. Quality inspector is the main in apparel inspection, who certifies the garments export order, whether it is perfect for shipping or not. The quality inspector has to ensure perfect quality according to the buyer's instruction in various stages of garments inspection, which have been discussed in this article.

BENEFITS OF QUALITY INSPECTION

Improve Product Quality- Automated quality inspections can improve product quality. It's true that a manual quality inspection process is labor intensive and prone to human error. When the quality inspection process is automated it becomes more accurate and repeatable, ensuring that products are produced at the highest quality levels. The process is also much quicker, meaning that products are able to get to market more efficiently.

Business Growth - Quality inspections that are automated can also help facilitate business growth. When the quality inspection process is made more efficient via automation it has a positive impact on the bottom line of the company as a whole. Product quality overall is improved which means that the products are more in-demand. In addition, an automated system is able to collect data for every feature on all products which is attractive to potential buyers. The quality data is right there for them to see as they make decisions.

Cost Effective- Automating the quality inspection process is also morecost effective. While there is an upfront cost associated with an automated inspection system, it is a one-time investment.The long-term ROI of the inspection system must be considered. Over the lifetime of the system it will amount to significant cost-savings compared to the cost of labor associated

with a manual quality inspection process. Employees expect to be paid more as they become more experienced whereas an automated inspection system involves no additional costs.

Customer Satisfaction - Using quality control tools and processes like **Test Measurement Calibration** and **TraQtion** not only ensures that your product are safe and exactly as they should be, but it also ensures that your customers are not disappointed by the foods they by. The better quality your products, the happier the consumer, will be and the more money you will make selling your stuff to them. By effectively inspecting and exercising control over your company's production processes, you can lower your production costs by ensuring that inferior products and defects are kept to an absolute minimum. This has the knock-on effect of being better for the environment too. If you want **improve the custumer experience in your business** this is a good article to read.

Can Use Your Resources More Effectively- Quality control procedures enable you to use the resources available to you in the most effective way possible so that nothing is wasted and you don't have to worry about going over budget.

Increase Morale - Implementing better quality control procedures can actually boost the morale of your employees because it can make them feel more like they are working towards a common goal, creating high-quality goods for the market. It can also help to foster a happier atmosphere because staff know exactly what is expected of them, which means they won't be caught off guard by a disgruntled manager who isn't happy with their work.

Products are Uniform- When you run a business, you need to ensure that every product you put out meets the same high standard. If some products are of a higher quality than others, disgruntled customers, who've paid more for an inferior product than their friends, are sure to rear their heads. Luckily. Effective quality control is an easy way to ensure that every product you sellis the same.Asyou can see, there are so many advantages to quality control that you can't afford not to implement it in your business.