



# **TRINITY COLLEGE FOR WOMEN NAMAKKAL**

**DEPARTMENT OF COSTUME DESIGN & FASHION**

**FABRIC SCIENCE  
ODD SEMESTER**

**Presented by**

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# KNITTING

# INTRODUCTION

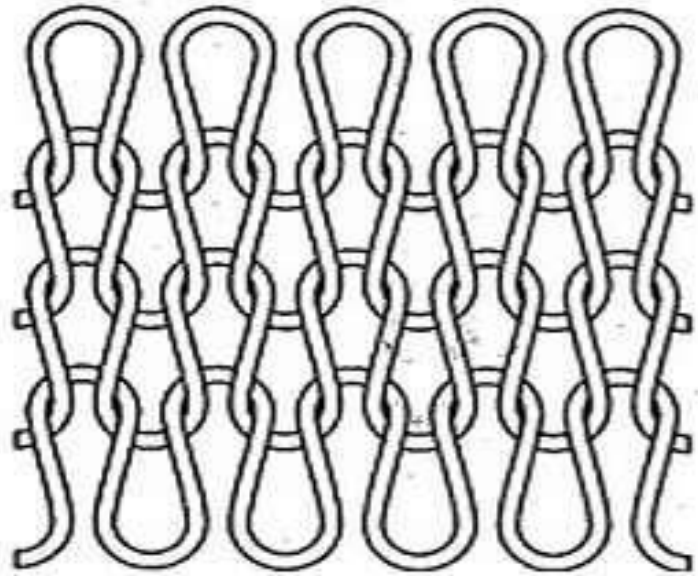
- Knitting is a fabrication process in which needles are used to form a series of interlocking loops from one or more yarns or from a set of yarns.
- In knitted fabrics, yarns do not move in both directions as they do in weaving; there are no warp and no filling yarns in a knitted fabric.
- When a woven fabric is unravelled, both warp and filling yarns are removed.

## NEEDLES

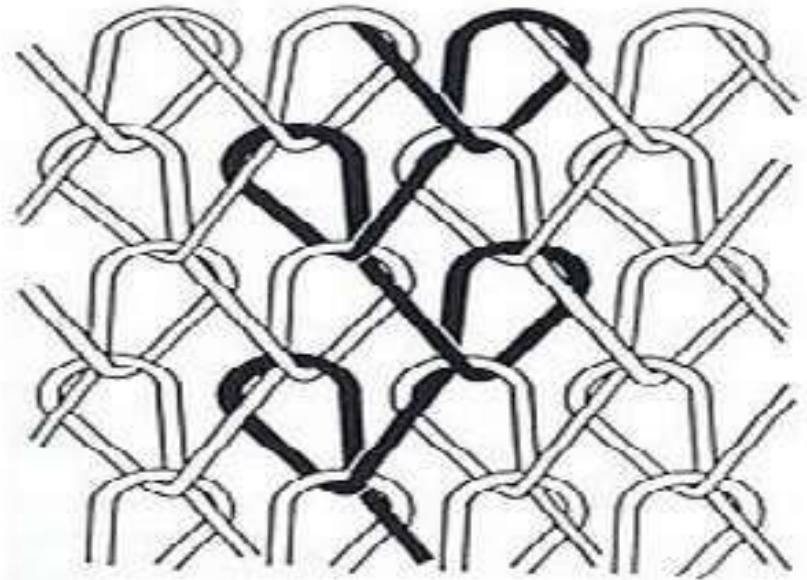
- Knitting is done by needles, such as spring-beard, latch, or compound.
- Most filling knits are formed with the latch needle. The spring-beard, or bearded, needle may be used to produce fully fashioned garments and knit-fleece fabrics.
- Spring-beard needles are usually used with fine yarns, whereas latch needles may be used in making coarse fabrics.
- A double latch needle is used to make purl loops. The compound needle is used primarily in warp knitting.

## STITCHES

- Needles make stitches or loops. The stitches are named based on the way they are made.
- Stitches may be open or closed, depending on how the stitch is formed.
- Open stitches are most common in filling
- knitting. In warp knitting either of the kind may be found, depending on the design of the knit.



**Weft Knitting**



**Warp Knitting**

## FABRIC CHARACTERISTICS

- Fabric density is defined by describing the number of stitches, not yarns, in a specific direction.
- Wales are vertical columns of stitches in the knit fabric. Courses are horizontal rows of stitches.
- Fabric density is often designated as Wales by courses. For example, a T-shirt jersey might have 32 Wales per inch and 44 courses per inch.
- This fabric would have a density of 32 x 44. Cut, or gauge, indicates the fineness of the stitch.
- It is measured as the number of needles in a specific space on the needle bar and often expressed as needles per inch .

## FILLING OR WEFT KNITTING

- Filling knitting can be either a hand or a machine process. In hand knitting, a yarn is cast (looped) onto one needle, another needle is inserted into the first stitch, the yarn is positioned around the needle, and by manipulating the needle the new stitch is taken off onto the second needle.
- The process is repeated with all the stitches being taken off from one needle to the other.
- In machine knitting, many needles are set into a machine and the stitch is made in a series of steps.
- By the end of the series, one needle has gone through a complete up and down motion, and a new stitch has been formed.
- In the running position, the needle moves up and the old stitch begins to slide down the needle.



## MACHINES USED IN FILLING KNITTING

- Machine knitting is done on single-knit and double-knit circular and flatbed machines.
- The circular machines are faster in production. Circular machines are described by the diameter of the fabric tube they produce.
- Greater flexibility demands by the industry have resulted in machines that make a variety of tube diameters. Diameters can be changed with minimal down time.
- New yarns can be fed into the structure at any point on the diameter.



# THANK YOU

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