

# AMTE-15 KNITTING TECHNOLOGY

## UNIT-1 INTRODUCTION

- 1.1 Reasons for the growth of the knitting industry.
- 1.2 Comparison of fabric properties - wovens, knits and bonded fabrics;
- 1.3 Classification of knitting processes- weft knit & warp knit; yarn quality requirements for knitting.
- 1.4 Preparation of staple yarns for weft and warp knitting.

## UNIT-2 FUNDAMENTALS OF KNITTING

- 2.1 General definitions and principles of knitting;
- 2.2 Types of knitting needles
- 2.3 Bearded, Latch & Compound Needle. Elements of knitted loop structure.

## UNIT-3 WEFT KNITTING

- 3.1 Basic weft knitted structures and their production - plain, rib, interlock and purl;
- 3.2 Fundamentals of formation of knit, tuck and float stitches;
- 3.3 Factors affecting the formation of loop; effect of loop length and shape on fabric properties;
- 3.4 Analysis of various types of weft knitted structure. Weft knitted fabric geometry.

## UNIT-4 WEFT KNITTING MACHINES

- 4.1 Construction, Characteristics and working of circular knitting machines used for the production of basic structures; production of derivatives of weft knitted structures;
- 4.2 Needle control in circular knitting machines; quality control in knitted fabric production; production calculation. Basic principles and elements of flat knitting machines;
- 4.3 Different types of flat knitting machines- manual, mechanical and computer controlled; production of various weft knitted structures using flat knitting machines.

## UNIT-5 WARP KNITTING

- 5.1 Basic principles; elements of warp knitted loop- open loop, closed loop;
- 5.2 Warp knitting elements- chain link, chain links for simple patterns, guide bar movement mechanism,.
- 5.3 Tricot and Rachel warp knitting machines.
- 5.4 Principles of double needle bar patterning, Terry pile fabric production.
- 5.5 Let off system; run in value based on the lapping diagram; take up system;
- 5.6 Theoretical concepts of warp knitted loop configuration.
- 5.7 Uses of warp knitted fabrics in technical applications.

## REFERENCES Books:

1. Chandrasekhar Iyer, Bernd Mammel and Wolfgang Schach., "Circular Knitting", Meisenbach GmbH, Bamberg, 1995.
2. Samuel Raz., "Warp Knitting production", Melliand Textilberichte, GmbH, Rohrbacher, 1987.