AMTE-13 PROCESS CONTROL IN SPINNING

OBJECTIVE:
To enable the students to understand and apply process and quality control measures during spinning of yarn

UNIT I LEVELLING

Different levelling methods adopted in the spinning machines to achieve better uniformity of the products; influence of the uniformity of the intermediate products on the yarn quality; effect of machines and processing parameters on product uniformity; importance of FIBRE mix homogeneity on yarn quality; types and levels of mixing in the preparatory processes; assessment of FIBRE-blend variations.

UNIT II NEP AND HOOK REMOVAL

Causes of nep and hook formation in the FIBRE-opening processes; improving the removal of neps in the carding and combing machines; maximizing the FIBRE hook straightening during the preparatory operations; measurement of neps and hooks.

UNIT III WASTE CONTROL

Control of waste in blowroom, card and combers; influence of machine and processing parameters on waste removal; controlling the lint content in waste; cleaning efficiency and cleaning intensity.

UNIT IV PRODUCTION CONTROL

Factors affecting the production limits of the spinning machinery; achieving maximum production in the given machinery; new concepts in achieving higher production in the spinning machinery; role of machinery maintenance and humidity control on production efficiency; computation of the productivity indices.

UNIT V YARN QUALITY ANALYSIS & MAN-MADE FIBRE PROCESSING

Analysis and control of within length and between length variations and spectrogram; yarn faults classifications; causes and remedies for yarn defects. Optimum processing conditions required for man-made FIBREs like polyester, viscose in the spinning machinery.

OUTCOMES:
Upon completion of this course, the student shall be able to understand the Quality control measures in terms of levelling of material, neps and waste during the process Factors influencing production of the spinning machines Analysis of quality of yarn Special measures to be taken while processing man made FIBREs

TEXTBOOKS:
Klein W., “Man-made FiBREs and their Processing”, The Textile Institute, Manchester, 1994
REFERENCES:

Lord P.R., “Yarn Production; Science, Technology and Economics”, The Textile Institute, Manchester, 1999
Furter R., “Evenness Testing in Yarn Production Part 1 and Part II “, The Textile Institute, Manchester, 1982
Van der Sluijs M and Hunter L., “Neps in Cotton Lint, Textile Progress “, The Textile Institute, Manchester, 1999