Textile Design (Printing) I & II

Syllabus- For Govt. Polytechnic (Diploma Sector)
Post: Lecturer Textile Design (Printing)
Paper-I

1. **Fibres**: Definition of fibre, yarn & fabrics, classification of fibres, essential properties and uses of cotton, bast fibres; flex, jute, hemp & rammie, properties and uses of various types of silk, introduction to wool-merino, mohair, cashmere, camel and alpaca properties, grading of cotton & wool, identification of fibres by different methods.
2. **Yarn manufacture**: processes involved in the Conversion of fibres into Yarn, working principles of blow room, carding, draw frame, combing, speed frame, ring frame & doubling, types of yarns & their uses, yarn characteristics like count ,twist, strength, unevenness, hairiness, Different types of yarn s; spun yarn, filament yarn, fancy yarn, textured yarns, high twist yarn, ply yarn, cable yarn, core-spun yarn, rotor yarn, friction spun yarn etc.
3. **Fabric manufacture-I:** Processes in preparation to weaving, winding:- objectives, types of winding machines, faults & their remedies in winding, warping: objectives, types, sizing objectives, methods of sizing, sizing ingredients, drawing-in & beaming objects & different methods of beaming.
4. **Indian Traditional Textile:** Historical significance, construction techniques, styles, colour, motifs, Dyeing & printing in India, Phulkari, Kashmir embroidery, Chickankari, Bengal Kantha, Sanganhari, Patola, Bandhani, Ikat, Jamdani, Kanchipuram, Baluchar Madhubani etc., Block printing, metal work, Ivory & stone work, carpet & floor covering.
5. **Basic Design**: interpretation of lines, conversion of shapes from natual to geometric, & abstract, organizing shape to create motif, colour wheel, intensity of colour, monochromatic, complementary, split complementary, analogues, achromatic, primary, secondary, tertiary colour, **Art & craft:** Tie & dye, batik, stencil craft, embroidery techniques, folk art, painting, creative art.
6. **Textile Colouration**: Preparatory processes, singeing, desizing, scouring, & bleaching for cotton, wool & silk, classification of dyes, definition & methods of dyeing, dyeing of cotton with direct, azoic, vat, reactive, dyeing of wool, acrylic, dyeing of nylon, dyeing of polyester etc, different dyeing machines, factors affecting color fastness & fastness measurement.
7. **Textile Printing-I**: Introduction to printing, methods and styles of printing, classification of printing thickeners and methods of thickeners paste preparation, emulsion thickeners, synthetic thickeners, and mechanism of viscosity build up in emulsion and synthetic thickeners, Rheological behavior of thickeners., Preparation of cloth for print paste preparation, wetting agents, hygroscopic chemicals dispersing agents, oxidative and reducing agents etc., precautions, methods of printing - block printing, roller printing, roller engraving and chroming, Screen printing- preparation of screens, rotary screen printing, rotary screen preparation-manual and photosensitive, its method of application, merits and demerits, faults and prevention in printing methods, general methods of print fixation, and machines used for after treatment of printing goods steaming, ageing, curing etc., pigment printing of cotton, binder emulsion, print paste recipe and steps involved, various styles of printing- direct, resist & discharge style of printing of cotton using direct, reactive, vat and indigosol colours.
8. **Garment Technology**: Garment classification, fabric selection, methods of taking measurement, patterning & grading, principles of pattern drafting, objective & equipment for spreading, cutting & sorting pattern, Sewing technology: Classification of stitch & seam, types of sewing machines, garment production systems;, Basic of fusing, pressing & packing, care labeling, statutory regulations for care labeling, Garment quality assurance: Pre sewing, sewing & post sewing defects, their causes & remedies, dimensional stability of garments, quality assurance of accessories.

Syllabus- For Govt. Polytechnic (Diploma Sector)
Post: Lecturer Textile Design (Printing)
Paper-II

1. **Fibre-II**: Basics of man made fibres, regenerated & synthetic fibres, introduction to specialized fibres, structure & properties of regenerated & synthetic fibres ,different blends of fibres, various specialized fibres like, glass, Nomex, Kevlar, PBO, , PBO, etc.
2. **Fabric Manufacture-II:** Primary, secondary & auxillary motions in weaving, various types of weaving machines, dobby & jacquard loom, principles of shuttleless loom like projectile, air-jet, water jet, rapier, Various types of knitted fabrics & knitting machines.
3. **Fabric Construction & cloth analysis:** Classification of woven fabric, design, draft, peg plan, denting plan, plain weave & its derivative, twill weave & its derivatives, satin & sateen weave, toweling weaves, crepe weave. Estimation of warp & weft crimp, fabric thickness, gsm, cover etc, welts & piques, bedford cords, backed fabric (warp & weft), extra warp & extra weft, types of double structure, tubular fabrics.
4. **Principles of Design**: Difference between art & design, types of lines, types of shapes, study of colours, light theory, pigment theory, types & categories of textures, rhythm, harmony, balance, gradation, negative & positive space, proportion, aesthetic qualities of design: traditional, geometric, modern, realistic, symbolic qualities.
5. **Textile Design**: Enlargement and reduction of designs, Composition of bi-symmetrical and Multi-symmetrical figures, development of designs suitable for dobby, jacquards, development of decorative designs, development of all over design, electronic jacquard, development of pattern, construction of motif for printing & weaving, principle of preparing decorative designs, basis of textile design like diamond ogee, curved line, half drop, reverse etc, transferring of design to pint paper, apparel furnishing, Special complex fabrics eg. Double cloth, brocades, tapestries, damask, Turkish toweling.
6. **Textile Printing II**: Printing of wool and silk with different dye classes such as reactive, acid, metal complex dyes using the above styles. Printing of synthetic and blends- Printing in different styles on polyester, nylon, acrylic and their blends such as P/V, P/C, wool/acrylic, wool/nylon and different types of union fabrics, cotton/wool, cotton/silk etc with different dye classes., Other techniques of printing like raised, metal and flock printing, polychromatic dyeing, foam printing, bubble printing etc. Spray printing, tie and dye, batik printing, brasso printing, transfer printing- fundamental principles of transfer printing, sublimation transfer printing of polyester, machines used, digital printing - inkjet printing, concept and practice, printing of non woven -carpets, hosiery goods and bonded goods, camouflage printing.
7. **Textile Finishing**: objects of finishing and its importance, various types of finishes, Calendaring & its applications, water proof & water repellent finishes, flame retardant & flame proof finishes, soil & stain release finish, antibacterial & moth proof finishes, crease/wrinkle resistant finishes, latest developments in finishing.
8. **Textile Quality Assurance**: Difference between QC & QA, Properties of fibres, yarns & fabrics & their relevance in assessing performance of textile, Fibre testing:- fibre length, fibre fineness, maturity, fibre strength, & other properties, Yarn testing; concept of count & twist & its measurement, yarn tensile strength, yarn evenness, hairiness & other properties, fabric testing: measurement of GSM, thickness, crimp, tensile strength, tear strength, abrasion resistance, air permeability, crease recovery, water proof & water repellency, concept of drape & its measurement.